# Energy Safety Net Toolkit

## TOOL #1

## IN HARM'S WAY:
### HOME HEATING, FIRE HAZARDS AND LOW-INCOME HOUSEHOLDS

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At the end of the 2000/2001 winter heating season, at least 4.3 million low-income households were at risk of having their utility service cutoff because of an inability to pay their winter home energy bills.[1] As a result of high natural gas prices and extremely cold weather, the National Fuel Funds Network (NFFN) and other national organizations found, "utility shutoffs and arrearages are up dramatically from previous years with very few mechanisms in place to protect low-income seniors and children from the health and safety risks of a freezing house this coming winter."[2]

In addition to facing the health impacts of cold homes, households that are placed in jeopardy of losing their home heating service, or who actually experience the termination of service, face the safety problems associated with a resort to unsafe alternative methods for heating as well. One study of Washington state consumers, for example, found that many consumers generate heat by using an alternative fuel source such as a portable heater, the kitchen stove, or a fireplace.[3] Similarly, in North Carolina, of those households losing their primary fuel, nearly one in four (24%) used either portable kerosene heaters or portable electric heaters as their replacement source of heat.

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1 National Fuel Fund Network, et al. (June 2001). ***The Cold Facts***, at 1, National Fuel Fund Network: Washington D.C.

2 While the NFFN study focused on utility shutoffs, similar issues would arise from the loss of service from bulk fuel vendors. The loss of fuel oil service, for example, might arise from a refusal of a dealer to deliver additional oil when prior bills remain unpaid. There is no "disconnection of service" in the sense of a utility shutoff, but there is a loss of home heating nonetheless. Indeed, given the winter utility shutoff protections many states have adopted to prevent winter shutoffs –these are often referred to as a winter moratorium—customers of bulk fuels such as fuel oil and propane may be in *greater* danger than utility customers.

3 Michael Sheehan, *et al.* (1994). ***An Assessment of Low-Income Energy Needs in Washington State***, at 108, Washington Department of Communities, Trade and Economic Development (CTED): Olympia, WA.

A nearly equal proportion of the households losing their primary source of heat relied upon either their cooking stove or their fireplace (20%) as their primary heating source.[4]

These states are certainly not unique. A 1999 national study surveyed nearly 500 low-income service providers, including state LIHEAP administrators; state administrators of the federal low-income weatherization assistance program (WAP); state and local community action administrators; and local Legal Services Corporation (LSC) and other community-based low-income advocates. In addition, survey requests were sent to each state office that is a member of the National Association of State Utility Consumer Advocates (NASUCA) as well as to the consumer services staff member at each state public utility commission. In response to a question asking what low-income households do in response to unaffordable home energy bills, the *most* common response was that households rely on alternate heat sources (ovens, burners, electric blankets), change fuel types, and use electric space heaters.[5]

A new move to auxiliary heating sources, attributable to high natural gas prices, substantial arrears, and a high rate of utility service terminations, opens up the possibility of an associated new fire risk for low-income households.[6] As a result, home energy providers, their regulators, and service agencies that provide crisis intervention funding should develop closer working relationships with fire prevention and protection organizations and programs.

## HOME HEATING FIRES

While home heating equipment is no longer the single most substantial cause of home fires,[7] it remains one of the leading factors contributing to fires, as well as to fire-related injuries and deaths. In particular, according to the National Fire Protection Association (NFPA), portable and fixed space heaters present a risk of harm.[8] While portable space heaters are not the major cause of home heating fires, they play a much more substantial role in deaths and injuries. Portable and fixed space heaters (and their related equipment such as fireplaces, chimneys and chimney collectors) accounted for roughly two of every three (65%) home heating fires in 1998[9] and three of every four (76%) associated deaths.[10] Each of these devices has a higher death rate per

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4 Roger Colton and Roberta Levinson (1991). ***Energy and Poverty in North Carolina***, National Consumer Law Center: Boston.

5 Roger Colton (1999). ***Measuring LIHEAP's Results: Responding to Home Energy Unaffordability***, at 22 – 28, Fisher, Sheehan and Colton, Public Finance and General Economics: Belmont (MA).

6 As noted above, while this discussion focuses on utility service, similar observations could just as readily be made about unaffordable fuel oil or propane prices in recent years.

7 The term "`homes' refers to one- and two-family dwellings (which includes manufactured homes) and apartments. . ." The share of fires involving heating equipment, NFPA says, "is quite different for the two types of homes." While heating equipment is the second leading cause of fires in one- and two-family dwellings, it was only the seventh highest cause of fires in apartments.

8 According to the NFPA, "The causes of fires involving portable or fixed space heaters are dominated by human errors, such as placing them too close to combustibles and lack of maintenance." Id.

9 1998 is the most recent data available. *See e.g.*, John Hall (June 2001). ***U.S. Home Heating Fire Patterns and Trends***, National Fire Protection Association: Quincy (MA).

10 Marty Ahrens (June 2001). ***The U.S. Fire Problem Overview Report: Leading Causes and Other Patterns and Trends***, at 55, National Fire Protection Association: Quincy (MA).

million households using them than do the various types of central heating units or water heaters.

Indeed, portable electric heaters have accounted for the highest home heating fire death toll in 10 of the past 14 years.[11] No other cause of home heating fires comes even close to the fatality rate caused by portable heaters and fixed space heaters. In usage-weighted terms, while portable heaters do not cause more fires than central heating units, they are associated with significantly more deaths, more injuries, and more direct property damage, than are central units.

Comparative Risks of Leading Home Heating Devices
1994 – 1998 Fire Data and High vs. Low 1997 Usage Estimates

| Heating Unit Type | Fuel Source | Fires per 10,000 HHs | Civilian Deaths per Million HHs | Civilian Injuries per Million HHs | Direct Property Damage Per HH |
|---|---|---|---|---|---|
| Central Heating Unit | Gas | 0.70 – 0.70 | 0.66 – 0.66 | 3.1 – 3.1 | $0.91 - $0.91 |
| | Liquid | 2.83 – 3.12 | 0.95 – 1.05 | 5.4 – 5.9 | $1.55 - $1.70 |
| | Electric | 1.68 – 3.53 | 0.16 – 0.34 | 2.0 – 4.2 | $0.97 - $2.03 |
| | | | | | |
| Portable Heater | Liquid | 3.66 – 4.57 | 12.31 – 15.39 | 34.9 – 43.6 | $6.84 - $8.55 |
| | Electric | 1.93 – 2.30 | 6.47 – 7.73 | 16.4 – 19.7 | $3.55 - $4.24 |

**SOURCE:**

John Hall (June 2001). U.S. Home Heating Fire Patterns and Trends, at 65, National Fire Protection Association: Quincy (MA).

Moreover, while room gas heaters do not generate the same *fire* deaths as do the portable heaters, because they can cause deaths due to carbon monoxide poisoning from inadequate ventilation, the *overall* risk of room gas heaters is comparable to that of portable kerosene heaters. Portable kerosene heaters have the highest fire death rate relative to the number of households that use them. They are illegal in some states.

## THE WINTER FIRE DANGER

The winter heating season presents the most dangerous time for home heating fires. The NFPA reports that:

> Both home structure fires and home structure fire deaths show a sharp peak in the cold-weather months. . .Half of the home heating fires and three-fourths of the home-heating fire deaths occurred in the months of December, January and February. . .As noted earlier, heating fires and heating fire deaths are disproportionately associated with portable or fixed space heating equipment and the associated chimneys or venting systems.[12]

Given the number of households who are entering the 2001/2002 winter heating season with high arrears and the loss of service, this winter heating season may present a level of risk that has not

[11] ***Home Heating Fire Patterns and Trends***, *supra*, at 13.

[12] Marty Ahrens (June 2001). ***The U.S. Fire Problem Overview Report: Leading Causes and Other Patterns and Trends***, at 76, National Fire Protection Association: Quincy (MA).

been experienced since the days when high oil prices and supply interruptions pushed households to rely more heavily on supplemental heating sources.

## THE PARTICULAR DANGER FOR LOW-INCOME HOUSEHOLDS

Low-income households face a particular risk of not only experiencing a home heating fire, but of facing injury, death and/or substantial property damage as a result. Poverty, the residential fire rate, and the residential fire death rate, are all significantly associated.

Fire and Death Rates by Degree of Poverty
in U.S. Cities with a Population of More Than 250,000

| Percent of Persons Below Poverty | Median Residential Fire Rate | Median Residential Fire Death Rate | Number of Cities |
|---|---|---|---|
| 25.1 and over | 179 (80 - 230) | 2.82 (0.55 – 5.22) | 6 |
| 20.1 – 25.0 | 164 (22 – 676) | 2.30 (0.24 – 5.79) | 14 |
| 15.1 – 20.0 | 168 (83 – 389) | 1.27 (0.00 – 2.61) | 17 |
| 10.1 – 15.0 | 147 (79 – 242) | 0.92 (0.09 – 3.37) | 14 |
| 5.1 – 10.0 | 122 (90 – 217) | 0.87 (0.00 – 1.20) | 4 |

**SOURCE:**

"Burning Issues," at 104, ***NFPA Journal*** (January/February 1996).

### *The Unaffordability of Utilities*

According to the NFPA, "not being able to afford utilities" is one of the "major factors of increased fire risks" for low-income households. "In poor homes, small portable heaters or space heaters may be used to heat areas much too large for their capacity, and some households supplement heating equipment by turning on their ovens and leaving the door open."[13]

### *Other Factors Affecting the Poor*

Aside from low-income status being associated with an increased incidence of home fires generally, it is associated with deadly fires as well. Several factors contribute to this result, the NFPA has found:

- Not being able to afford smoke detectors. "Three fifths of all home fire deaths occur in the approximately seven percent of homes without detectors."[14] One-third of all homes with detectors that have fires have detectors that are not working.

[13] "Burning Issues," ***NFPA Journal***, at 104 (January/February 1996).

[14] ***U.S. Fire Problem Overview Report***, *supra*, at 51.

- Not always being able to afford child care and leaving children unattended or unsupervised. Unattended children are those left completely alone with no adult or babysitter to look after them.[15]

- Not being able to afford a telephone. "Without a telephone, the chance of a delay in alarm when reporting a fire to the fire department increases."[16] According to the Federal Communications Commission (FCC), while telephone penetration rates for residential consumers in general exceeds 95%, March 2000 data shows that the penetration rate for households with incomes below $5,000 was only 80.3%. In addition, penetration rates for households relying exclusively on public assistance for income fall to only 45%.[17]

- Living in less fire resistant housing, as well as using less fire resistant furniture and mattresses. "Diminished financial resources prevent many families from investing in fire safety because the resources they do have usually go to other, more immediate necessities."[18]

## FIRE PREVENTION PARTNERSHIPS

The termination of utility service to low-income households who cannot afford to pay their bills presents potential safety problems that extend far beyond the health impacts of inadequately heated housing. The safety implications arising from households using alternative sources of home heating deserve a higher profile.

NFFN believes that the United States should set as an explicit goal that the 4.3 million low-income households facing utility service terminations each year, as well as the 5.0 million households receiving federal LIHEAP assistance each year,[19] should be free of energy-related home fire hazards by 2007 associated with the loss or unaffordability of home heating service.

To establish strategies and tactics on how to achieve this goal, NFFN calls for convening a collaboration between the national associations of agencies serving the energy needs of low-income households and the national fire prevention organizations. This collaboration should include, at a minimum, NFFN, the National Fire Protection Association's (NFPA) Center for

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15 ***Burning Issues***, supra, at 104.

16 ***Burning Issues***, *supra*, at 104.

17 Amongst specific low-income households, telephone penetration rates are dramatically low. Of households on public assistance, 35 percent lack telephones. Of households receiving food stamps, 31 percent lack telephones. Of households receiving energy assistance, 21 percent lack telephones. Indeed, of those households completely dependent on public assistance, the penetration rate of telephone service is only 43.5 percent (leaving more than 56 percent with*out* service). Alexander Belinfante (1989). *Telephone Penetration and Household Family Characteristics*, Federal Communications Commission Docket No. CC 87-339. Washington D.C.

18 Rita Fahy and Alison Norton, "How Being Poor Affects Fire Risk. . ." ***Fire Journal***, at 29:34 (January/February 1989).

19 There is likely some overlap between these two populations.

High-Risk Outreach,[20] the U.S. Center for Disease Control's Center for the Prevention of Unintentional Injuries,[21] the National Community Action Foundation (NCAF),[22] and the National Energy Assistance Director's Association (NEADA).[23] The American Gas Association (AGA), Edison Electric Institute, and National Rural Electric Cooperative Association (NRECA) should be invited to participate as well.

Specific interim strategies are readily available while the collaboration develops its long-term implementation plan. In particular, utilities, utility regulators, and the public and private agencies providing financial crisis assistance would be well-served to develop relationships with programs designed to prevent fires, as well as programs designed to mitigate the human and financial cost of fires. NFFN believes the following immediate actions to be in order:

- Property and casualty insurance companies should provide financial support to local fuel funds. Given the role that energy-related fires play in residential death, injury and property damage, as well as the role that poverty plays in exacerbating the incidence and degree of such fire hazards, local fuel funds can be seen as a front-line fire prevention tool.

- Agencies delivering low-income energy efficiency services, whether through the federal Weatherization Assistance Program (WAP) or through utility energy efficiency programs, should be funded to incorporate fire prevention aspects to their home energy audits. At a minimum, weatherization agencies should ensure that working smoke detectors are in each home in which efficiency services are delivered.

- Utility shutoff avoidance strategies deserve a higher profile in fire prevention activities. National and local activities during Fire Prevention Week, for example, should include information about means to access Low-Income Home Energy Assistance Program (LIHEAP) benefits, private fuel fund assistance, and federal Weatherization Assistance Program (WAP) benefits, as mechanisms to prevent shutoffs giving rise to the need for the use of portable space heaters in low-income homes.

- Local utilities should incorporate fire prevention information in the process of service terminations. With millions of low-income households in danger of losing their utility service at the end of the 2000/2001 winter heating season, the potential use of

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[20] Created in 1995, the Center has as one major goal to reduce deaths and injuries among preschool-age children. Another priority for the Center is to reduce deaths and injuries among older adults (age 65 and older). At age 65, older adults are twice as likely to be killed or injured by fires when compared to the population at large. By age 75, that risk increases to three times that of the general population – four times at age 85.

[21] The prevention of fire-related injury and death in economically-distressed communities is one focus of the CDC's Center for the Prevention of Unintentional Injuries.

[22] NCAF serves the national network of local community action agencies delivering federal weatherization assistance.

[23] NEADA is the national association of state LIHEAP directors.

dangerous portable space heaters is foreseeable. Many of the fire dangers arising from such use are reasonably preventable through education.

- Local fire prevention World Wide Web (WWW) sites should incorporate links to state LIHEAP agencies, local fuel funds, local community action agencies, and other local agencies delivering low-income energy efficiency and home energy assistance benefits as a fire prevention technique. National fire prevention agencies should incorporate WWW links to LIHEAP, NFFN and related energy assistance organizations.

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