National Association of State Fire Marshal's

Juvenile Firesetter Intervention Project

Summary Report on Areas 3 and 5

Home Environment Dimensions &
Social Service Resources

December 1999
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I. Introduction

This is the final report of the expert panel organized by the Fireproof Children Company to address two areas of importance with respect to the juvenile firesetter problem: home environments (Area 3 of the NASFM request for proposal) and generally available social service resources that might be utilized (Area 5). The original charge to our panel included:

Home Environment (Area 3)

- A review of items used by children to ignite fires, using the most current data available;
- Which items are used most frequently (lighters, matches, space heaters, etc.) and their accessibility to children, and under what circumstances these items are available;
- A review of the items most commonly ignited by children. And why some items are targeted;

Social Service Resources (Area 5)

- A review and evaluation of generally available social service resources that are not now being utilized to address juvenile firesetting behaviors, such as services that address drug use, gangs, sex offenders, etc;
- A series of recommendations on which program resources would be most effective in juvenile intervention, including how these programs can be mobilized to address juvenile firesetting issues;

- A comprehensive listing of social service resources that are not currently available, but are vitally needed to reduce juvenile firesetting behaviors.

In addressing the questions outlined, we reviewed:

1) national statistics (both the raw NFIRS data and the adjusted NFPA data);
2) systematically collected local and regional data (Rochester, NY; Toronto, ON; Portland, OR; Anchorage, AK);
3) relevant scientific literature and
4) published reports of various community service programs.

We also interviewed 8 fire and childcare officials representing diverse areas of the country. Our interviews were designed to ensure that our conclusions and recommendations were sensitive to regional and cultural differences.

The following report summarizes this information and what the team believes can be concluded from it. It presents our recommendations, questions still to be addressed, and descriptions of the types of research studies that would provide answers to these questions.

II. Panel Members

- Robert Cole, Ph.D. Associate Professor of Psychiatry, University of Rochester and President of Fireproof Children – Team Leader
- Jerold Bills, Investigator, Rochester Fire Department and Vice-President of Fireproof Children
- Robert Crandall, Lieutenant, Rochester Fire Department and Vice-President of Fireproof Children
- Mark D. French, New York State Office of Children and Family Services
- Harriet Kitzman, Ph.D. Loretta C. Ford Professor of Nursing, University of Rochester
- Kenneth McConnochie, M.D. Professor of Pediatrics, University of Rochester
- Sherri MacKay, Ph.D. Assistant Professor of Psychiatry, University of Toronto and Director, Toronto Arson Prevention Program
- Lizette Peterson-Homer, Ph.D. Byler Distinguished Professor of Psychology, University of Missouri – Columbia
- Mary Skvorak, Ms. Ed. Behavior Management Applications, Instructor Nazareth College and Rochester City School District

III. Overview of Juvenile Firesetting

Fire is a serious problem whether defined in terms of property loss, injury or death; and child fireplay is an important contributor to the overall fire problem. Children, primarily elementary school children, are responsible for a surprisingly large number of fires, approximately 100,000 every year (Hall, 1998). Fire interest among children is nearly universal and fireplay is quite common; over half of all children report having played with fire by the time they leave elementary school (Grolnick, 1990; Kafry, 1980).

There is an enormous variability in the degree of psychopathology and dysfunction in the children who start fires and their families. A large number of fires are started by children free of psychopathology, exhibiting no conduct problems, living in primarily functional families (Fineman, 1980; Gaynor & Hatcher, 1986; Gaynor, 1991). Nevertheless most of these children have a limited understanding of fire and of ignition materials, easy access to these materials, frequent exposure to and responsibility for activities involving fire (most frequently cooking) and no explicit family rules about fire use or fireplay (Grolnick et al., 1990). A large percentage of these children never come to the attention of the fire service (or any other community service) because their parents react to the child's fireplay and the children respond to the parents' actions.

The supervision of young children seems to be a particularly challenging and important factor. While parents typically feel their children are safe when they are at home, (Peterson et al., 1993) the easy access to ignition materials and lack of supervision put

many of them at risk. Indeed, the vast majority of serious fires started by children, those fires leading to injury or death, start at home.

Some children start fires in response to serious family problems and/or as part of a pattern of conduct disorder. These children are at much higher risk for recidivism than those judged to start fires simply out of curiosity. Comprehensive interventions have been shown to effectively reduce these high rates of recidivism (Cole et al., 1999).

Fire in the United States

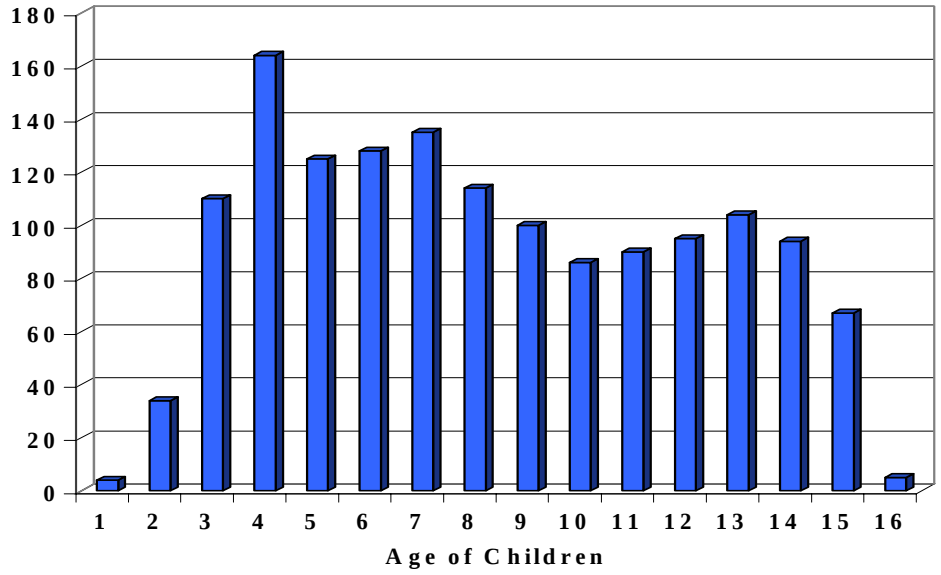
- In 1997 public fire departments in the United States responded to 1,795,000 fires. These fires resulted in 23,750 civilian injuries and 4,050 deaths. The majority of the injuries (17,300 or 73%) and deaths (3,360 or 83%) occurred in home fires. The fire death rates are highest for young, preschool children and the elderly (NFPA, 1999).
- There is a striking relationship between socioeconomic status and the incidence of fire. In a comparison of fire rates across census tracts, the percent of persons with incomes below the poverty line explained 40% of the variance in the fire rates. Interestingly, poverty is related to only 4 of the 7 most frequent causes of fire – all 4 are the result of human action or error: smoking, cooking, incendiary/suspicious and children playing. The frequency of fires caused by faulty heating sources, electrical distribution and appliances are unrelated, or at most only weakly related, to poverty (Schaenman et al., 1998).

- In one study, census tracts with the highest frequency of people with incomes below the poverty line had rates of child-playing fires 14.2 times as high as the wealthiest neighborhoods (FEMA, 1997).
- Unintentional injuries are the leading cause of death among those ages 1 to 38. Fires and burns are the third leading cause of death of children ages 1 to 4. For boys of this age it is the second leading cause of death (National Safety Council, 1997).
- Child playing (with ignition materials - almost always matches and lighters) is the leading cause of fires that kill children under the age of 10. Almost 40% of the fires that kill children 5 and under are started by children (Hall, 1999).
- During the five-year period from 1992 through 1996, children were responsible for 99,200 fires annually. These fires resulted in 2,811 injuries and 358 deaths. Over the past 16 years the overall number of fires started by children has fallen sharply, but almost all of the decrease was in outdoor fires. As most injuries and deaths occur in home fires, the frequency of injury and death has either remained constant (deaths) or increased (injuries) (Hall, 1998).
- Fires started by children resulted in an estimated $250,000,000 in lost property. This does not include the indirect costs of lost wages and taxes or temporary housing. Nor does it include the cost of actually responding to the fire (Hall, 1998). It has been estimated that a single fire run costs approximately $1,000. This alone would add $100,000,000 to the overall cost of children's fireplay and firesetting.
- The overall reduction in child fires includes recent sharp reductions in match and lighter fires, possibly attributable to the introduction of the child-resistant lighter standard in 1994. We believe that this reduction is also due to an increased awareness

of the problem by parents. Consumer Product Safety Commission statistics show that this reduction is concentrated among children 5 and under – the age group targeted by the standard – and had no impact on fires started by older children (Hall, 1998; Smith et al., in press).

- The majority (71%) of child fires occur outside. Only 22% (21,960) of child fires are started at home, yet they command our attention because they account for virtually all (89.6%) of the injuries and deaths (98.1%) that result (Hall, 1998).
- Most adults have "dangerously unrealistic perceptions about fire…. Americans do not view fire as a major risk in their lives…. in spite of the fact that the typical American household will contact the fire department twice in their life (Operation Life Safety, 1998)."
- There is considerable variability within the group of children who are involved in fireplay or firesetting and in the circumstances that contribute to their behavior. Differences in ages capture some of that variability. Figure 1 illustrates the age distribution of children who set the 1445 fires started by children and reported to the Rochester Fire Department in the nine year period beginning January, 1985 and ending December, 1993. The children are surprisingly young. The median age is 7. More fires were started by 4-year-olds than any other age group and over 50% of the fires were started by children ages 4 through 9. This is consistent with data reported by the Portland (OR) Fire & Rescue Services and the Anchorage (AK) Fire Department (Porth 2000). In that review children 8 and under were responsible for 40% of the 841 fires reported.

Figure 1
Fires Started by Children
Rochester Fire Department 1985 - 1993



- Fires started by young children tend to cause greater damage, and are more likely to cause injury, than fires started by older children. Figures 2 and 3 illustrate the relationship between age and the likelihood that a fire will either cause structural damage, injury or death (Figure 2). For children ages 2 through 5 the probability that a fire will cause structural damage ranges from 60% to 82%. For no other age is the probability over 50%. Similarly, the likelihood of injury or death in the 308 fires started by 2-, 3- and 4-year-olds is 10%. With the single exception of the 11-year-olds, the risk of injury from the fires started by older children never exceeds 4%.
- Fires started by young children are more likely to cause structural damage and injury in part because they are much more likely to be started at home. Virtually all fires started by children 5 and under are started at home (Figure 3).

Figure 2
Fires Causing Structural Damage, Injury or Death
Rochester Fire Department 1985 - 1993

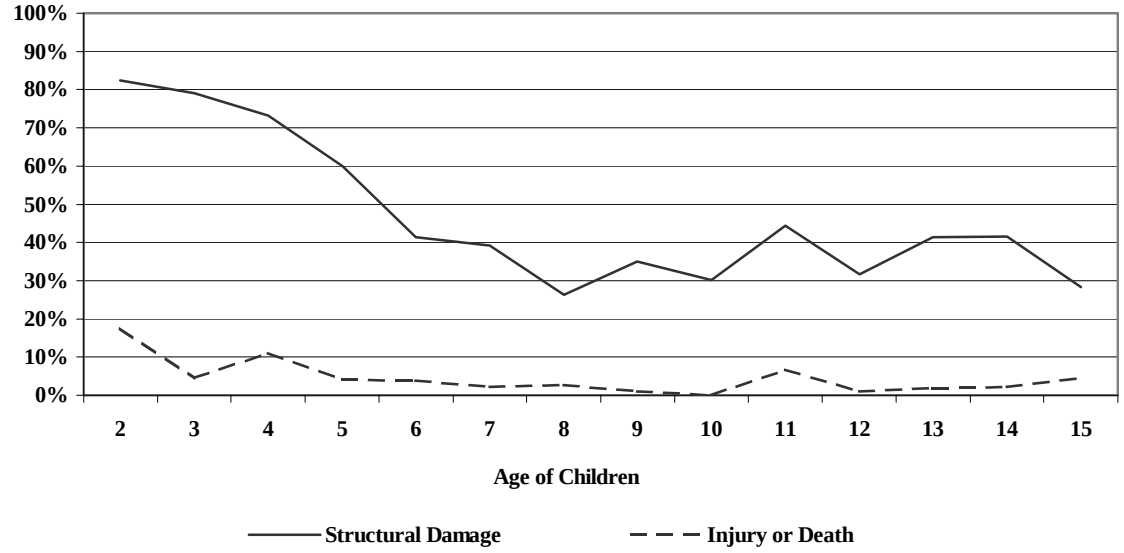


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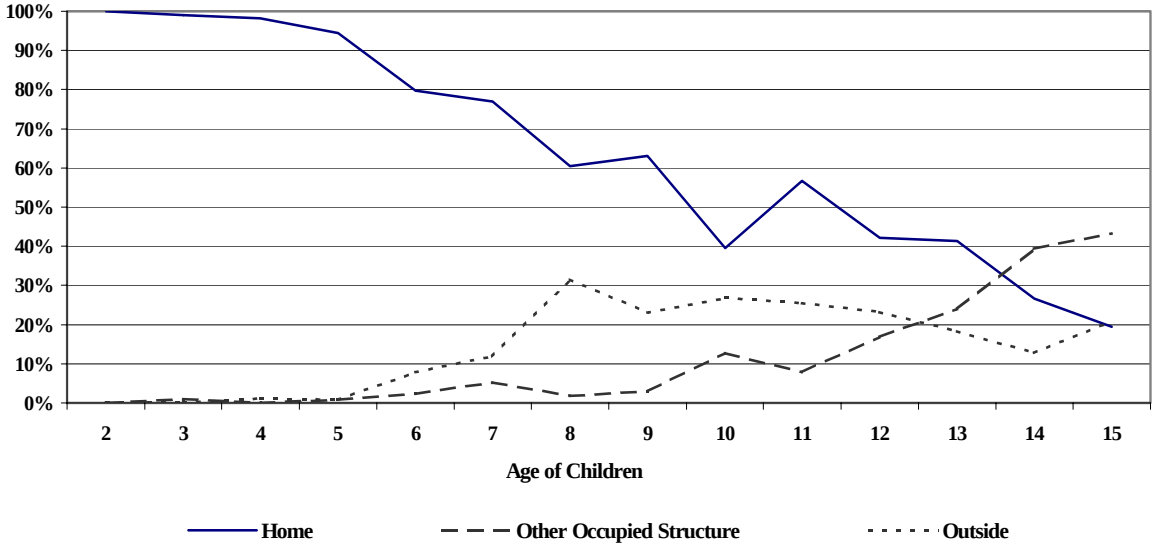
Figure 3
Location of Fire
Rochester Fire Department 1985 - 1993



IV. Home Environment Dimensions

Executive Summary

In examining home environment dimensions, we have gone beyond the original questions concerning actual materials ignited to examine access to those materials and parental supervision generally. It is important to look beyond the literature specifically focused on children's fireplay and firesetting to the larger literature on injury and injury prevention. Four aspects of the home environment related to both overall rates of childhood injury and to the likelihood of children's fireplay and firesetting are explored:

- The presence of hazards and access to ignition materials;
- Supervision and monitoring;
- Modeling of safety and risk behaviors;
- Assignment of responsibilities to children.

Available national data address only a few questions and only in a cursory fashion. No national data are currently available to address age or gender differences in the items used to ignite fires, the items first ignited or the location of these fires (Hall 1998). Data addressing these issues are available from two sources: the City of Rochester Fire Department (much of which is unpublished) and a report summarizing data obtained from Portland, OR and Anchorage, AK (Porth, 2000). Even these data however provide only a cursory look at age and gender effects. The samples are too small to explore a number of interesting questions, for example questions regarding the combined effects of age, gender and family factors. Further, many issues are not addressed in sufficient detail to

adequately understand the actual circumstance surrounding a fire. A number of important conclusions can be drawn however.

Children tend to start fires with common, widely available and easily accessible ignition materials. For all age groups the vast majority of fires are started with matches or lighters. While most fires started by children are started outside, about one in four are started at home and it is these home fires that account for the vast majority of the structural damage, injury and death that results from child firesetting. Fires started in the home originate where children spend most of their time, in the bedrooms and other play areas and the items first ignited are the items found there such as bedding, clothing, furniture, and toys.

Paradoxically, research suggests that parents believe children are safest in the home. As a result of this perception, supervision of children is often relaxed in the home relative to other settings. Because parents are unaware of the frequency of fireplay by young children and the injuries associated with such play, they are often overly casual about fire safety issues in the home. For example, many parents leave ignition materials in easily accessible locations and model inappropriate use of ignition sources (e.g., lighting a cigarette on the stove or via the toaster). They may also assign responsibilities for cooking and the use of other ignition sources to children who are too young to understand the dangers associated with such sources. Young children given responsibilities for activities involving fire have an increased sense of control over fire and an increased likelihood of engaging in fireplay (Grolnick 1990).

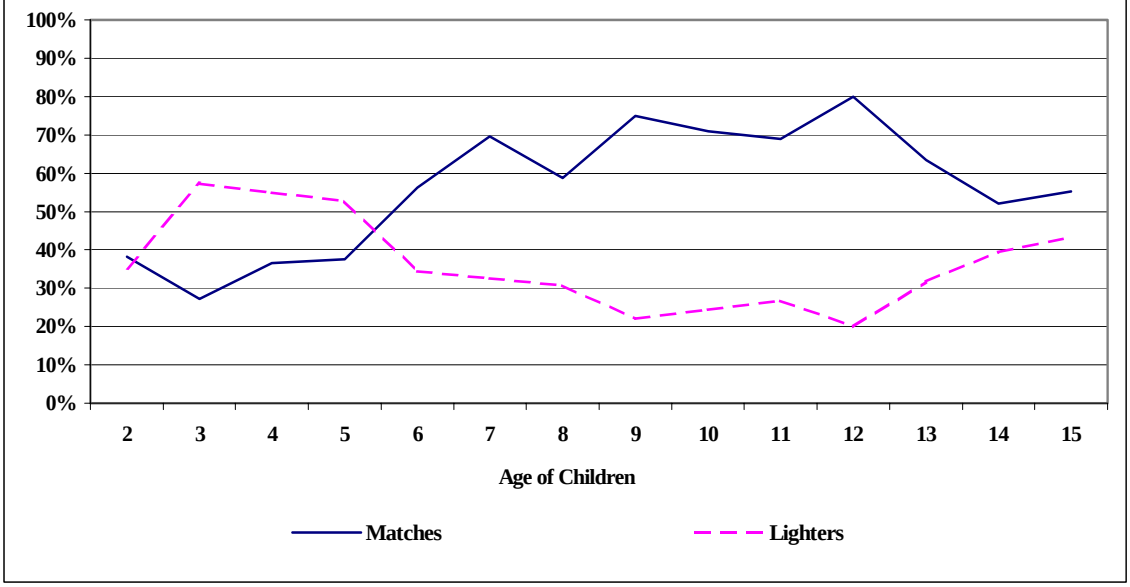
The picture presented by these data is reasonably clear. We must raise the level of awareness and concern among parents and children to the risks that exist in the very environment in which they feel most comfortable. We must encourage parents to safely store ignition materials and to model fire safe behavior for their children. We must develop better parenting guidelines around fire safety. These guidelines would help parents make age appropriate assignments regarding the responsibility for fire to their children and improve their supervision of children inside and out of the home. The strategies and resources needed to accomplish these intervention aims are outlined in the second section of our report.

The Presence Of Hazards And Access To Ignition Materials

Ignition sources. Fires started by children are almost always (between 80% and 90%) started with matches and lighters. The remainder are started by a wide variety of alternative ignition sources including candles, fireworks, tobacco products, gas-fueled equipment, and other unknown or unclassified open flames (Hall, 1998; Cole et al., 1986; Porth, 1999). Whether children use matches rather than lighters is strongly related to age. Figure 4 shows the relationship between the proportions of fires started by matches and lighters and age. During the nine years the Rochester data were assembled, preschool children were somewhat more likely to start fires with lighters than with matches. Once children reach age 6, they are much more likely to use matches. It is our assumption that matches are more available than lighters to most children. They are given away free by many stores, hotels and restaurants and when they are purchased, they are usually

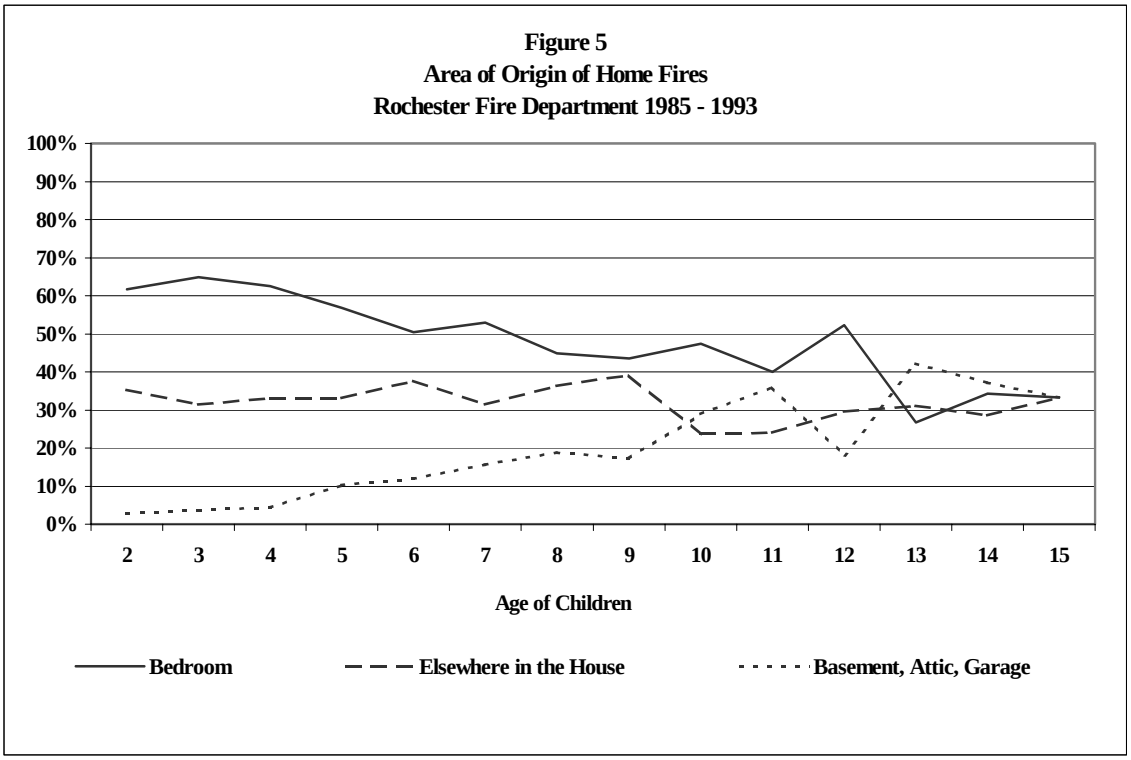
purchased in sets of 50. The data from Portland and Anchorage, much of which was collected after the introduction of the child resistant lighter standard, confirm only a portion of the Rochester findings. In spite of the new standard, the majority (65%) of fires started by preschool children were still started with lighters. In the Porth report, the 6- to 11-year-old children, like the children in Rochester, were more likely to use matches (60 to 65%), but the teens (12 to 17) were more likely to use lighters.

Figure 4
Fires Started by Matches and Lighters
Rochester Fire Department 1985 - 1993



Area of origin. Nationally, home fires started by children most frequently originate in the living areas of the house. Over half (53.4%) are started in a bedroom. This is where children spend much of their free time, feel comfortable, and where parents assume they are safe. An additional 22% originate in living rooms, family rooms, dens, kitchens or closets. These fires account for 87% of the fatal child-set home fires (Hall, 1998).

The area of origin of the fire is strongly related to age. Figure 5 shows the percent of home fires started in bedrooms, other living areas of the home and in the basement, attic, garage or porch as a function of age. Young children, children under the age of 8 but especially those under 5, are most likely to start fires in bedrooms – their own, their parents or their siblings. As children get older they become more likely to start fires in the basement, attic, garage or porch. Roughly one-third of the home fires started by teenagers are started in these areas of the house.



Items first ignited. Not surprisingly, bedding is the material most frequently first ignited (34.5%), followed by clothing (10.9%), upholstered furniture (6.6%), trash (6.3%) and

paper (4.1%), curtains and drapes (3.1%). In these national statistics, no other item accounts for more than 3% of the total. The items first ignited reflect the area of origin of the fire (Hall, 1998).

Table 1
Items First Ignited
Rochester Fire Department 1985 - 1993

Age	Paper	Bedding	Clothing	Flammable Liquids	Furniture	Toys	Leaves
2	3%	50%	21%	0%	12%	3%	0%
3	19%	41%	18%	0%	8%	7%	1%
4	20%	41%	14%	1%	7%	4%	2%
5	37%	28%	18%	1%	11%	1%	1%
6	45%	23%	7%	1%	3%	2%	9%
7	50%	19%	8%	2%	10%	2%	10%
8	56%	10%	4%	5%	2%	4%	17%
9	52%	14%	5%	2%	7%	2%	12%
10	60%	9%	7%	3%	2%	1%	15%
11	56%	8%	9%	6%	2%	3%	11%
12	59%	6%	5%	13%	2%	1%	8%
13	52%	5%	5%	7%	5%	4%	11%
14	57%	7%	9%	5%	1%	1%	9%
15	51%	6%	3%	16%	1%	0%	15%

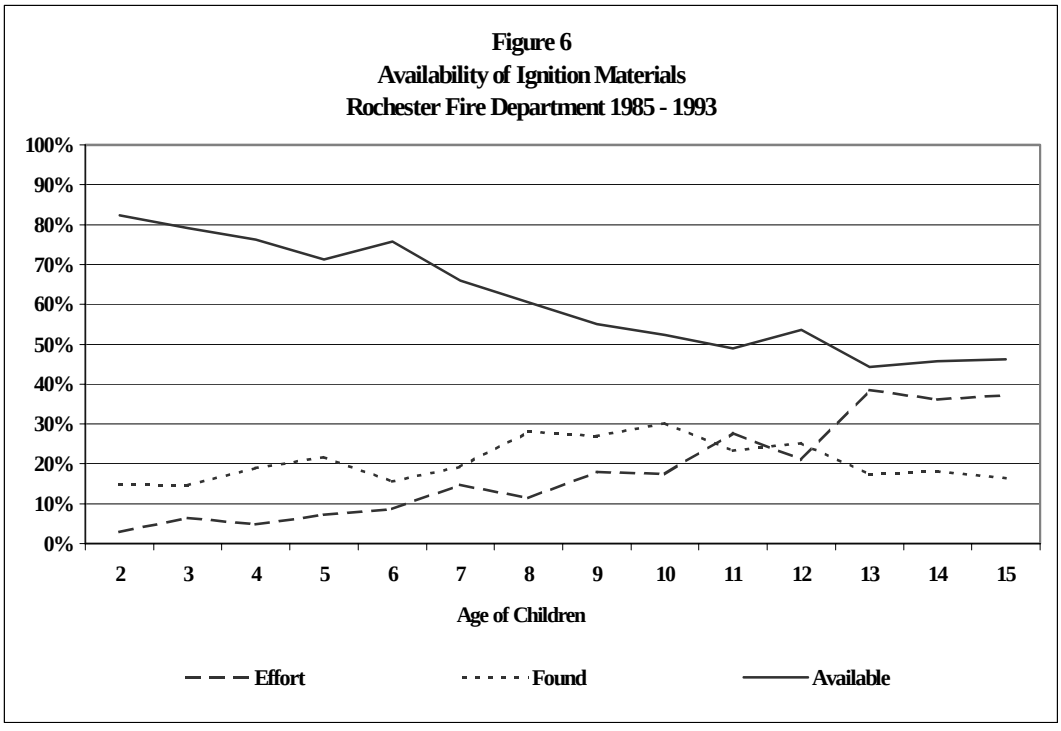
The Rochester data permit us to look at the relationship between age and the first items ignited. These data are summarized in Table 1. Because such a high percentage of fires started by preschool children are started in bedrooms, it is not surprising that the items first ignited by young children are likely to be bedding – mattresses, bedspreads, sheets, etc. By the age of 5 however paper is the most common material. And by age 7 and every age thereafter, paper is the item first ignited in the majority of fires. For the younger children, the third most frequent item ignited is clothing. Perhaps what they are wearing,

perhaps clothing lying on their bedroom floor. For the older children leaves tend to be the next most frequent category. Only for teenagers are flammable liquids used in more than 1 in 20 fires.

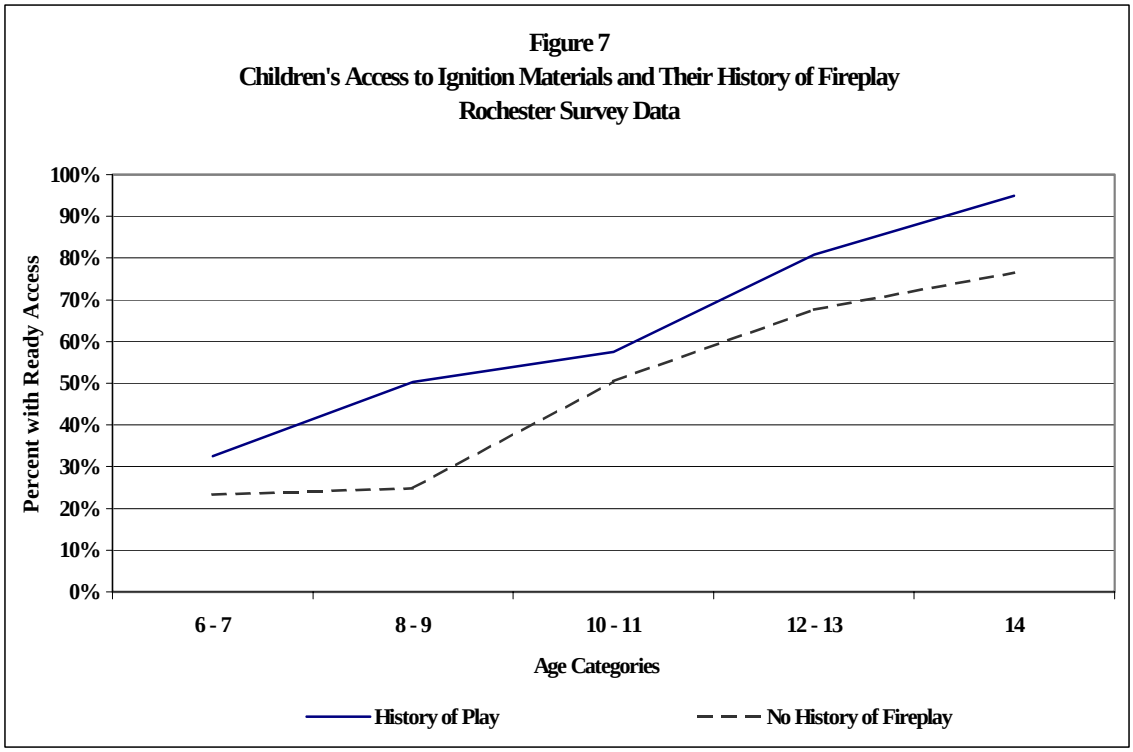
Access to ignition materials among those who start fires. Most of the children who start fires have easy access to ignition materials. The investigators in Rochester reported that 65% had constant and immediate access. Frequently matches and lighters were left out on coffee tables and kitchen counters. When they were "put away" they were frequently kept in accessible kitchen drawers. Fewer than 20% of the children had to make an effort to obtain ignition materials. The remaining children reported having "found the matches or lighters" or that they had been left out by "mistake." In Portland 80% of the children reported they had "found or had been given the ignition materials by a parent or other child." Only 13% said they had to search out or sneak the materials (Cole et al., 1986; Porth, 1999).

In the Rochester data, access to ignition materials is strongly related to age. Figure 6 shows the proportion of fires started by children in homes in which matches or lighters were always available to them, homes where the children had to make a concerted effort to obtain them, and those in which the children claimed they "found the matches or lighter" or the parents had inadvertently made them available. Clearly access to ignition materials is a major contributing factor in all fires started by children, but especially fires started by young children. Over 70% of children under the age of 7 were judged by the fire investigator to have ready access to ignition materials. While this percent declines

steadily with age, it never falls much below 50%. As children get older they are more likely to exert some effort to obtaining ignition materials. Only by age 11 do even 20% of the children have to make this effort. The majority of young children, especially preschool children, have ready access. They take advantage of this circumstance to experiment. We can only speculate that if matches and lighters were not available, young children, especially the preschool children who start the most destructive fires, would not be able to engage in fireplay. The Porth data confirm that young children have access to ignition materials. In his sample 80% of all children had access. It does not show an increase in the number of fires started by children who made some effort to obtain matches and lighters.



Access to ignition materials in a random sample of school children. In a survey of a representative sample of nearly 800 Rochester City School District students, nearly half (48%) reported they had ready access to matches - that they could get a match without asking (Grolnick et al., 1990). Figure 7 shows that accessibility is related to age and to self-reported fireplay. Among those children who report having played with fire, nearly one in three of the 6- and 7-year-olds and nearly half of the 8- and 9-year-olds report they could get a "match or a lighter without asking." Fewer than 1 in 4 of the children who report not having played with fire have such easy access. At every age, children with greater access to ignition materials are more likely to engage in fireplay.



Recommendations. There is a clear consensus that children should not have access to hazardous objects, but not about the specific actions it is reasonable to expect parents to take (Peterson et al., 1993). We need to better understand the factors associated with the presence and accessibility of these hazards, and our panel recommends new research to provide:

- Better understanding of the relationship between parental smoking and the presence of lighters and matches. Little data are currently available to address this question;
- Assessment of specific storage strategies. Large descriptive studies might improve our understanding of the relationship between various storage strategies, children's fireplay and the frequency of child fires. Such studies might include both random samples of families with children who have not set fires and families whose children

have set reported fires; from these data we might be able to identify relatively more secure, yet still practical, storage strategies. Once having identified or developed recommended storage practices, we might conduct evaluations to assess parents' willingness and ability to employ such practices and their impact on child access and fireplay;

- Better understanding of how children obtain access to ignition materials. Are they indeed always available, or is availability linked to specific stressful family events that break the family routine? Availability at stressful times might also give children access at just those times when they are most vulnerable to temptation;
- Testing of the value of education in "inoculating" children against playing with ignition materials when they are available, given the virtual impossibility of completely preventing access.

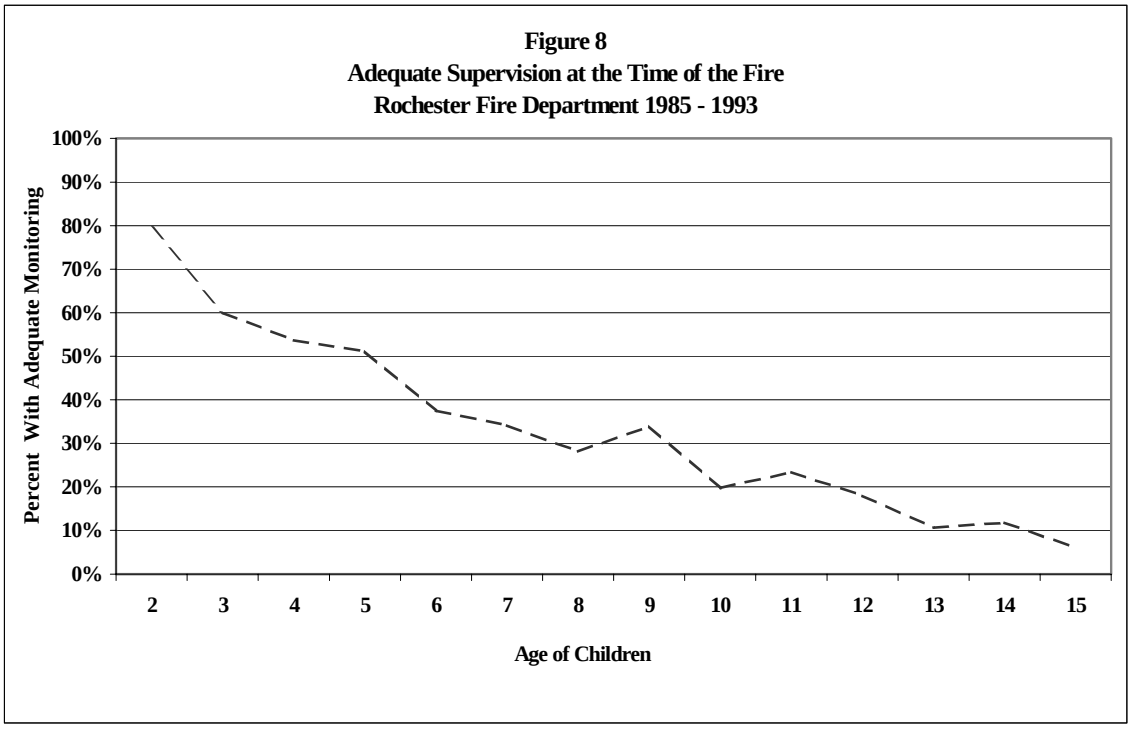
Supervision and Monitoring

Adequately supervising and monitoring young children has long been recognized as an important factor in childhood injury in general (Peterson et al, 1993) and in children's fireplay in particular (Cole et al., 1986; Hanson, MacKay et al., 1995; Fine & Louie, 1979; Kolko & Kazdin, 1990).

Many serious fires are started by children who are left completely unsupervised. This includes children whose parents leave them unattended for extended periods of time after school and in the evening. Most fires started by children (70%) occur during the

afternoon or early evening - between 12:00 p.m. and 8:00 p.m. This is when most children are awake and at home (Cole et al., 1986; Porth, 1999).

In Portland, 26% of the fires started by children were started when no caregiver was present (Porth, 1999). In Rochester, 36% of the children were judged to have been inadequately unsupervised. This includes both children left completely alone and children whose parents (or guardians) were inadequately monitoring their activities – they were asleep, intoxicated or absorbed in other activities (Cole et al., 1986). Figure 8 illustrates the relationship between inadequate supervision and age in the fires started in Rochester. The likelihood that a child who starts a fire is being adequately supervised decreases sharply with age. Only the very young children, those ages 2 and 3 were judged to have been adequately supervised at the time of the fire. Just slightly over half of the 4-year-olds were viewed to have been appropriately supervised. By age 7 this fraction was less than one-third. We believe that these findings are open to question. Judging whether or not a child is being adequately supervised is difficult, especially after the fact. That a fire has occurred raises questions about whether the parent was doing enough. What these data do illustrate is how many fires can start, at home, even when a parent (or other responsible adult) is present at home.



Norms for supervision and monitoring. Defining appropriate supervision is a challenging task. Peterson et al. (1993) surveyed mothers of 8- and 9-year-old children, child protective service (CPS) workers, and physicians on their judgements regarding how long children of different ages could be left unsupervised in a variety of settings. Each respondent was asked to "indicate the number of minutes …[an average normal, healthy] child could…safely be left unsupervised (out of visual and auditory contact)" in several situations varying in degree of risk to the child. Three of the settings were at home: the living room or bedroom (low risk), the bathroom (medium risk) and a room with guns or poisons (high risk). The other settings included the yard, the street, the neighborhood and a parked car. There were no differences in the average ratings of the

mothers, the CPS workers and the physicians, although there was considerable variability within each of the groups.

There were clear differences reflecting the age of the child and the location and level of risk of the setting. Of special interest here are the findings regarding the low risk home setting, living room or bedroom, because of the very large proportion of fires that originate in the living areas of the children's homes. Two findings are noteworthy. First there is "great variability when a low-hazard situation is presented…" For 3-year-olds in the lowest risk settings (at home in a bedroom or living room) the majority of respondents were comfortable leaving children unsupervised for 3 to 15 minutes. At ages 4 and 5 this range was 10 to 30 minutes, by age 8, 30 to 120 minutes and by age 9 from 40 minutes to 4 hours. One in four respondents approved times longer than the upper bound of these ranges – some for up to 5 hours for children as young as 3.

Figure 9 illustrates the relationship between the average approved time and age in this low risk setting. On average the respondents were comfortable leaving 3-year-olds out of auditory and visual contact for nearly 15 minutes; 5-year-olds for 36 minutes and 7-year-olds for 1 hour and 20 minutes. Clearly these adults must assume no hazards are present, an assumption the available data clearly call into question.

Figure 9
Acceptable Average Times without Supervision
in Low Risk Settings at Home
Peterson, Ewigman and Kivlahan 1993

Recommendations. Correcting gross lapses in supervision based on a fundamental misunderstanding of children's capabilities and/or indifference to their welfare will require social service intervention addressing parenting responsibilities and skills. We discuss these issues below.

A great many additional child fires start in homes in which the children are not grossly unsupervised and where a parent is present in the home. Children, however, need very little time to secure ignition materials and start a fire. Defining appropriate supervision is a difficult task requiring a balance between supporting children's independence and freedom of movement and monitoring their safety. There is little agreement regarding where and for how long children of specific ages might be left unsupervised (Peterson et

al., 1993). Interestingly, the one place everyone does agree children, even young children, can be left alone is at home. Unfortunately, this is where the majority of serious child fires occur (Hall, 1998).

The degree of supervision required is, in part, dependent on the presence of hazards. Limiting access to hazards reduces the need for constant supervision. It may be easier to help parents safety proof their homes than change their supervision strategies (MacKay et al., in press).

Further research needs to address the complex network of factors that must be considered in defining appropriate supervision: age, developmental level, location and the presence of hazards. Empirical research must be conducted to investigate:

- Whether or not there is some realistic level of adult supervision that will offer children meaningful protection from injury;
- The latency of response to changes in children's level of activity, that is in response to periods of silence or unusual activity. It might be hypothesized that some parents are sensitive to such changes and responsive, while others become engaged in their own activities and do not hear, or are not sensitive to, such changes. Still others might not have the energy to respond or respond only to direct cries for help;
- Supervision strategies for children at different developmental levels with various temperaments and their relationship to the likelihood of injury. For example, we have unpublished data that demonstrate an interaction between maternal depression and child temperament on the frequency of childhood injuries. Children's level of activity

is related to frequency of injury for the children of depressed mothers, but not for the children of non-depressed mothers. Observational studies might provide valuable data to address these questions.

Modeling Safety And Risk Behaviors

Children learn about their world by watching those around them. Exposure to activities involving fire at home (activities modeled by parents) is related to the likelihood of child fireplay (Grolnick et al., 1990). In addition, we hypothesize that it is not simply exposure to fire, but the manner in which the ignition materials are handled, that relates to child fireplay. Children will imitate their parents' behavior. If the parents take unnecessary risks, so will the children. Children's understanding of the potential danger of an activity is based in part on their parents' behavior.

Because of the parents' familiarity with ignition materials and their own misunderstanding of the risks, they come to believe there is little inherent danger in common household activities involving fire. They communicate these beliefs to their children in the requests they make of their children, the way these requests are made and in the absence of instructions or safety guidelines. This might include asking a four-year-old to cook his own eggs while his mother and father sleep in.

Recommendations. The relationship between exposure to activities involving fire and the likelihood of child fireplay should be confirmed with something other than child self-reports. Large interview and observation studies are required.

We also need to confirm our hypotheses regarding parents' behavior and communication with children regarding fire safety with better interview and observational studies.

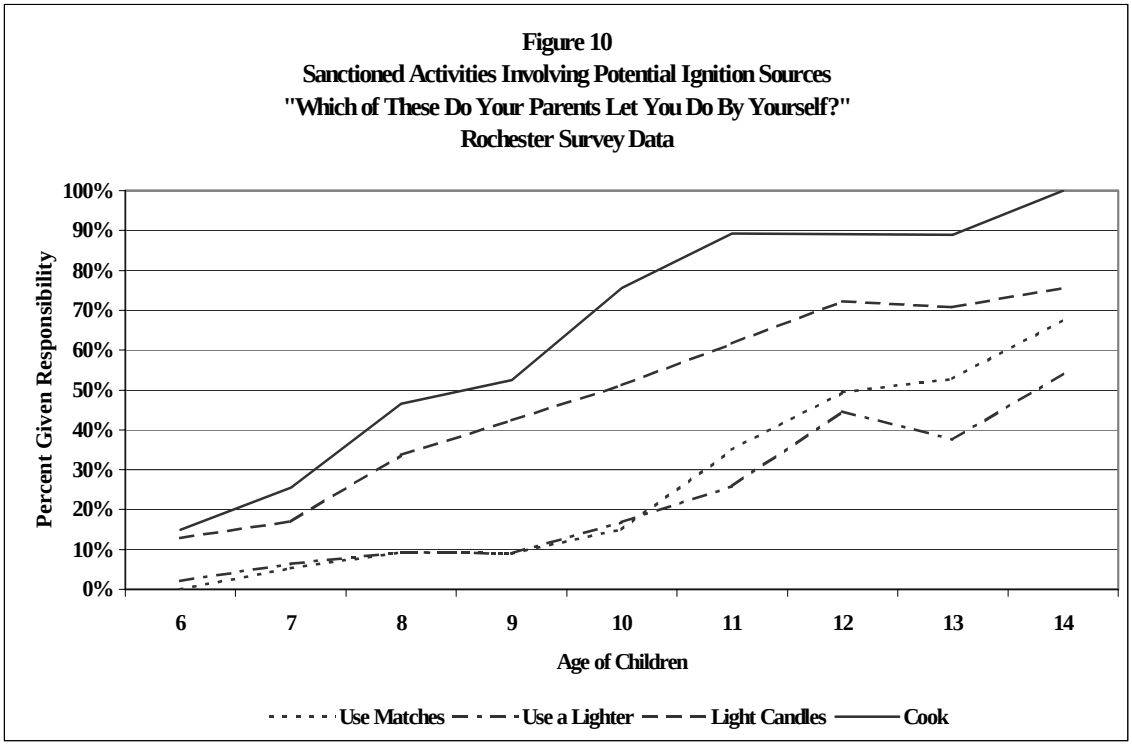
We need to develop and test interventions for adults that correct their misunderstanding and that provide training in modeling and teaching safety to children.

Assignment of Responsibilities

There is evidence from child self-reports that the assignment of responsibilities involving heat-producing appliances and fire is positively related to children's fireplay (Grolnick et al., 1990). Fireplay is positively associated with a sense of control over fire (could you put out a small fire, could you put out a large fire), exposure to and responsibilities for fire activities (cooking, barbecuing, etc.). The average child in the survey was exposed to seven home activities involving fire, had supervised experience with nearly four activities and had independent responsibility for one or two.

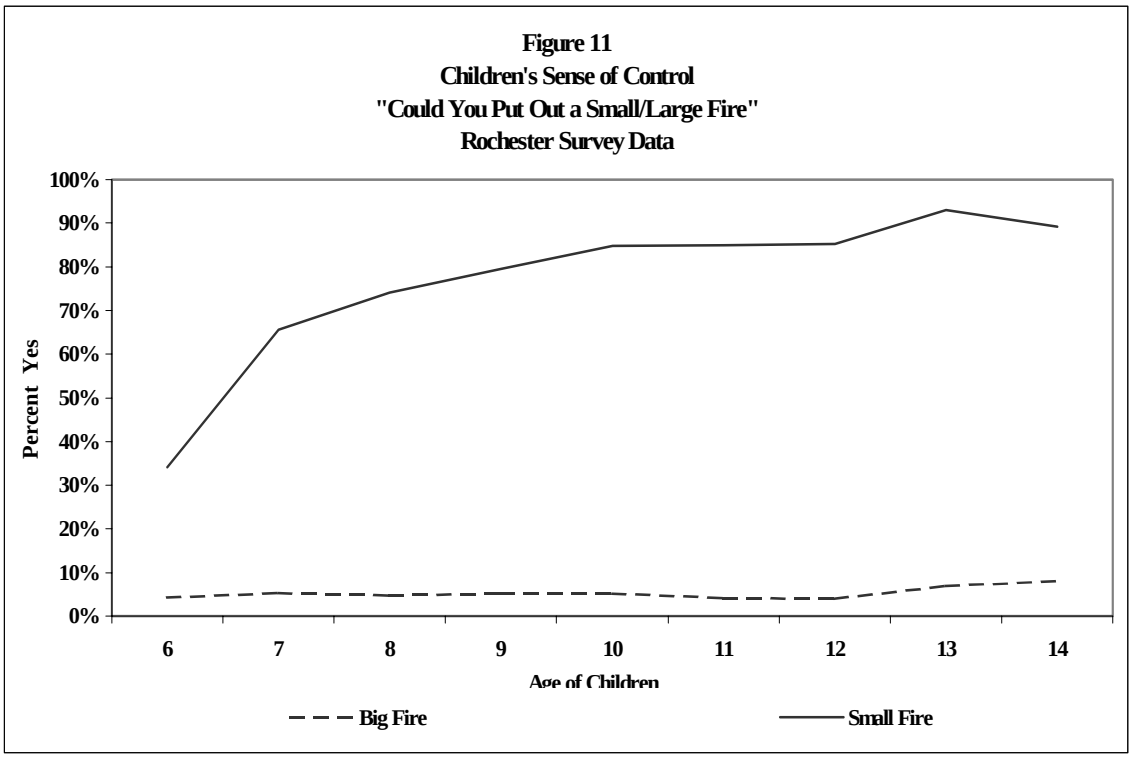
Figure 10 shows the percent of children ages 6 through 14 who report being given permission to use matches, lighters and candles and to cook without parental supervision. While very few children, at least up to the age of 10 are permitted to use matches or lighters, a substantial number are permitted to light candles and to cook. One-fourth of

the 7-year-olds, 50% of 8- and 9-year-olds and nearly all of those children age 11 and older self-report being permitted to cook without adult supervision. Nearly as many of the younger children are permitted to light candles.



The more independent responsibility the children carried, the more unrealistic their sense of control over fire (Grolnick et al., 1990). Our hypothesis is that the act of having been assigned such responsibility, and the experiences that result, contribute to the children's sense of control over fire, which in turn leads to increased fireplay. Young children's (age 6) overestimation of their ability has been shown to be related to injuries of all types (Plumert, 1995) presumably through increased risk taking - that is engaging in activities which they think they can control but which they cannot.

Children's sense of control over fire is also related to age. In the school survey described above, children were asked if they could put out a big fire and if they could put out a small fire. We did not define "big" and "small". Very few of the children at any age felt they could extinguish a large fire. Most of the children age 7 and older, over 70%, felt they could extinguish a small fire. The relationship between age and control is illustrated in Figure 11.



Play with fire is somewhat different than play with other potential hazards – dangerous tools like guns and knives. Fire is animate. It seems to be alive. It is highly reactive. It moves in response to the slightest breath, it changes colors, it grows. It is very rewarding to play with. We hypothesize that it is this reactivity that makes fire so interesting and motivates the children's play. This helps explain why increases in familiarity and

perceived control lead to increases in fireplay, not decreases. Children do not become bored with fire as they have more experience with it. Their curiosity does not become sated.

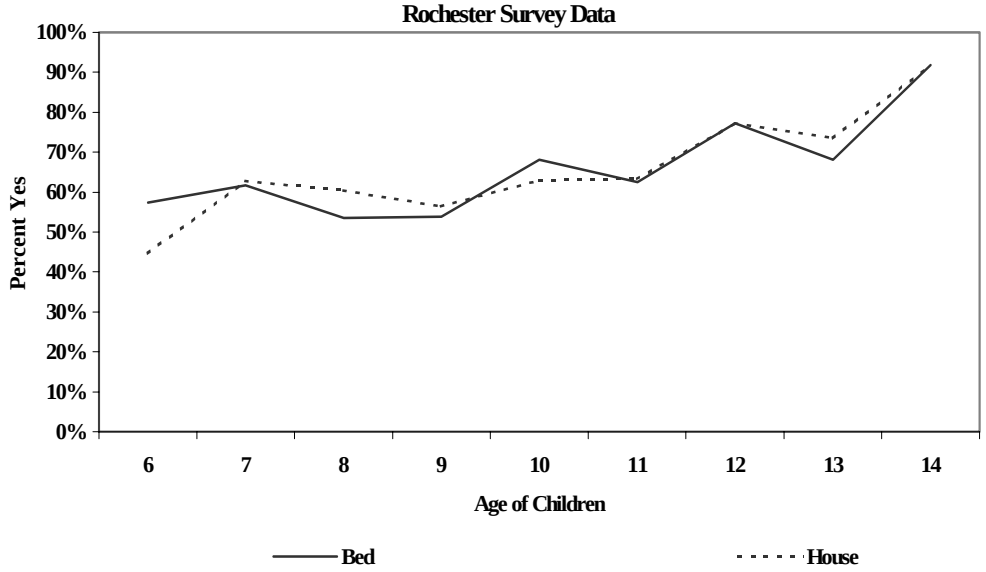
We further hypothesize that a sense of control among older children and adults contributes to more serious fires. Older children and adults who feel they can control small fires will delay reporting the fire while attempting to extinguish it. In a Canadian study of fires "three-fourths of those injured, despite activation of a smoke alarm, were hurt while trying to fight the fire themselves (Fire News, 1997 as cited in Public Fire Education Digest, 1997)." Thirty-nine percent of those in the US injured in fires were fighting the fire or attempting a rescue, not trying to escape. Only 24% were trying to escape just prior to their injury (Hall, 1999).

Many parents have a relatively poor understanding of their children's ability to handle emergencies. Preschool children have no understanding of the transformations of matter and energy (Piaget & Inhelder, 1969). They do not have the cognitive capacity to understand how a single match could possibly become a house fire. They have at best a very limited understanding of cause and effect, and this has been shown to relate to injuries of all types (Coppens, 1986). Elementary school children understand both cause and effect and transformations. They can be very good at following directions. With instruction or good modeling and an opportunity to practice, most will remember and imitate the required actions correctly. They cannot, however, envision all of the future, possible outcomes of an action (Piaget & Inhelder, 1969). They cannot anticipate what might go wrong or respond appropriately if something does. Even a child who cooks

regularly, for example, will not necessarily know how to respond, or do so quickly, if a grease fire occurs.

Parents may overestimate their young children's understanding of the dangers of fires. We hypothesize that they confuse their children's language ability with a real understanding of cause and effect, transformations and unexpected events. In fact, children have only a limited understanding of the power of the small flame and the transformations that must occur if a match or lighter is to culminate in a house fire. In the Rochester survey, only 45% of 6-year-olds, approximately 60% of 7- to 11-year-olds and 70 – 74% of 12- and 13-year-olds understood that one match "could burn up a house." Only by age 14 did 90% of the children understand this fact (Grolnick et al., 1990). The same numbers of children understood that one match could burn up their bed. Figure 12 illustrates these relationships. Perfectly consistent with these findings, MacKay found 67% of 11- to 13-year-old firesetters understood that one match could burn up a house (MacKay et al., 1996).

Figure 12
Children's Understanding of Fire
"Which of These Things Can be All Burned Up by One Match"
Rochester Survey Data



The manner in which assignments involving the use of fire are made, and their age appropriateness, also contribute to children's false sense of control. Too often parents make such assignments casually. This communicates to the children that there is very little risk in the assignment. If such assignments were made deliberately and cautiously, with careful instructions, then the children might respect the potential danger of the appliances and materials with which they work. Perhaps then they would be less inclined, not more inclined, to play with fire.

Assigning responsibilities to children who are old enough to truly understand the potential danger and anticipate and prepare for unexpected events (accidents) would also

ensure that children empowered to use these risky materials would have the cognitive capabilities to handle them appropriately. This level of understanding does not develop until adolescence. Only during adolescence do children develop the skills to anticipate all possible outcomes of an action (Piaget & Inhelder, 1969). It is only then that they can properly anticipate, prepare for and quickly respond to atypical events and emergencies.

Recommendations. These several hypotheses need to be tested with well-constructed interview and observational studies. Several specific issues must be addressed.

- The children's self-reports of the links between fireplay, assignment of fire-related responsibility and sense of control must be replicated with greater attention to sampling, improved measurement and construct validity. We must be able to independently assess, perhaps through parent interview and observation, our existing measures of these constructs and their relationships.
- Parental understanding of their children's level of cognitive development, that is what the children actually understand, and the parent's ability to predict how children will respond in various situations must be examined. We must explore the appropriate assignment of responsibility. How should risky assignments be given? How should they be introduced? What warnings are appropriate? What assignments are appropriate for children of different ages?
- We might use simulated situations involving cooking or other common, but potentially dangerous, activities to explore how children react to unexpected events. This would enhance our understanding of the relationships among the children's

cognitive development, exposure to activities, experience and their ability to perform various chores under routine and unexpected circumstances. It would also permit us to test the accuracy of the parents' characterizations of their children's abilities.

- Further research should include surveys or interview studies that rely on two-stage sampling. The first stage would identify children of different ages who have and have not been given various assignments, and who do and do not report firesetting. We might then conduct more in-depth interviews with subsamples drawn from these various strata.
- Further research should include experimental trials of various educational interventions to test if different approaches to safety education and the assignment of responsibility might alter children's beliefs, sense of control, understanding of risk and actual fireplay.

V. Social Services Resources

Juvenile firesetting results from a range of societal and family issues, from a lack of supervision to serious behavioral problems. The prevention of juvenile firesetting depends on a continuum of interventions and services available in the community:

> "Keeping children safe means keeping children in nurturing, permanent families and supportive communities. This is not a task that can be assigned to a single agency or organization. It requires action at every level and among numerous partners to realize the goal (Children's Defense Fund, 1999, page 103)."

Executive Summary

All children who start fires and their families will benefit from some form of intervention. The most appropriate and cost efficient form of intervention will depend on the nature of the child's firesetting and the presence or absence of other factors that may be contributing to the child's fire involvement. For children who are free of other worrisome behaviors and whose firesetting is of recent onset and not done with the intent of damaging property or injuring persons, a family focussed educational intervention should be sufficient to deter future episodes. This education program would focus primarily on fire safety skills and the prevention of injury through improved child and parental knowledge about fire safety. A second focus of the education program would be to assist parents to develop supervision practices tailored to their child's developmental

needs and abilities. Many parents underestimate the importance of adequate supervision in keeping children safe.

Children with more entrenched or malicious patterns of fire involvement may require more intensive intervention to deter recurrent episodes of fire involvement. Research indicates that chronic or malicious fire involvement by a child often occurs in the context of child or family mental health problems. Thus, in addition to benefiting from the educational intervention outlined above, these children and their parents will require individualized treatment plans to address their underlying mental health needs. Without addressing these mental health needs, the child will remain at high risk for future episodes of firesetting.

The resources to offer an appropriate range of interventions for children and adolescents involved in firesetting are available in virtually all communities. The challenge is to identify, mobilize and integrate these resources. Part of that challenge will be to educate communities, agencies, and individuals about the problem of childhood firesetting, the enormous costs associated with it, and the benefits of a multi-agency collaborative approach to dealing with juvenile firesetting. The present proposal reviews a number of community programs that could be mobilized and three different approaches to coordinating a collaborative program for juvenile firesetters.

Overview of Research Findings

One-third of the fires started by children in two cities with carefully collected incident data (Rochester, NY and Portland, OR) were judged by the investigator to have been influenced by something other than curiosity and to have at least one serious family problem. In Rochester, at the time of the fire, 14% of the families of children setting reported fires were already Child Protective Service cases. In addition, 13% of the parents had a criminal record (Cole et al., 1986). In Portland, the families of 30% of the children were already "receiving some sort of free social service from the community (Porth, 1999)."

Those children living in families with even one observed family problem had a rate of recidivism of 7.6% (that is, children who set a second fire at some point during the follow-up period) versus only 1.1% for those with no noted family problems. Recidivism rates of children in families already referred to Child Protective Service were 11.4%. Recidivism rates of those with police contact were 8.4% (Cole et al., 1986). Rates of recidivism differ widely from study to study. Rates range from under 10% to over 60% (Kolko, 1996; Porth, 1999; Stewart and Culver, 1982). This variability is due in large part to differences in definition, sampling, thoroughness of the follow-up tracking, the length of the follow-up interval and the services provided to children and families following each incident. The critical point here is that recidivism is much higher for children living in difficult family situations.

For the five-year period (1983-1987) during which every family judged to be in need of services was referred to either a social service or mental health agency, repeat firesetting was reduced 74%. Once this program ended, recidivism increased again (Cole et al., 1999).

Other studies have found links to stressful life events such as death, separation, divorce, family illness, frequent moves and unemployment (Fineman, 1980; Kolko & Kazdin, 1990; Jacobson, 1985; Showers & Pickrell, 1985; Gruber et al., 1981).

Still other studies have found that the parents of children who start fires are more likely to be mentally ill, depressed (Fineman, 1980; Kolko & Kazdin, 1990; Kolko & Kazdin, 1990; Gruber et al, 1981; Kazdin & Kolko, 1986; Macht & Mack, 1968), lacking in affection (Kazdin & Kolko, 1986) or psychologically unavailable (Macht & Mack, 1968). Children who set fires are more likely to have conduct problems and poor social skills than children who do not (Kolko et al, 1985; Moore et al, 1996; Sakheim et al, 1991). Some have attention deficit/hyperactivity disorder (ADHD) (Kolko & Kazdin, 1985). While ADHD has been suggested as a contributor to fireplay, it should be noted that prevalence rates of ADHD range between 3% and 5%, while 50% of older elementary school children report fireplay.

Fifteen percent of the elementary school children who started fires had received a short-term suspension versus only 8% of the overall population of city elementary school children (Cole et al., 1986).

Fifteen percent of the children starting fires reported to the Rochester Fire Department were classified as juvenile delinquents – they had already been in trouble with the police (Cole et al., 1999).

Essential Components of a Comprehensive Intervention Program

There is a consensus that children's fireplay and firesetting, like other risk behaviors resulting in unintentional injuries, should be considered as part of a community's overall effort to reduce high risk and aggressive behaviors and promote positive youth development. Furthermore, the range of social factors relating to firesetting portrayed in the above statistics indicates that a continuum of services is needed to address a wide range of child and family problems. To this end each community requires a network of resources. Regardless of the agencies involved, several functions must be fulfilled if a community is to effectively detect, intervene and ultimately prevent juvenile firesetting:

1. identification and referral of children who play with or deliberately set fires;
2. assessment of fire involvement, child and family strengths and weaknesses;
3. the provision of safety education for parents and children;
4. family/child intervention and support;
5. opportunities for out-of-home placement;
6. training for community agencies in juvenile fireplay and firesetting;
7. coordination of community services.

Identification and referral. Primary responsibility for identification and referral rests with the fire department. However all individuals and community organizations that work with children and families must be trained to recognize and report fireplay and firesetting. Many of the most seriously troubled children are taken directly to mental health facilities and never, or only later, come to the attention of the fire service.

All agencies and individuals who work with children must be aware of the prevalence of the problem and the characteristics of children involved in fireplay; routinely query children and families about fireplay and firesetting; provide information about identifying, preventing and addressing fireplay and firesetting; and know where to refer families for assessment and/or intervention.

The specific steps required include:

Identification. The first step by which a child's involvement with fire is brought into a system. Agency staff must be educated in the indicators of juvenile firesetting and know what resources to contact;

Reporting. Once identified, there must be uniform documentation at the local level and ideally at the state and national levels;

Screening. The ability to look at a situation and gather enough information to determine what should happen next and when;

Referral. Transfer all information and responsibility to the next level or appropriate resource for action.

Assessment of fire involvement, child and family strengths and limitations. While fireplay is not necessarily a sign of child or family pathology, a multifaceted assessment of each child and his or her family should be conducted following every detected incident. The assessment should include consideration of:

- the child's involvement with fire including prior fireplay and firesetting;
- the child's understanding of the danger of fire;
- indicators of conduct disorder or other behavioral or psychological problems (oppositional behavior, inattention, hyperactivity, impulse control, interpersonal skill, emotional self-regulation, mood);
- the child's participation and performance in school and other youth activities;
- the family's understanding of the risk of fire and injury risk in general;
- the family's understanding of and ability to supervise, monitor, limit access, set and maintain limits and discipline their children;
- the family's understanding of child development, their own child's capabilities and need for supervision;
- family stress (marital, financial, mental and physical health);
- family dysfunction (physical or sexual abuse, neglect, substance abuse, criminality)
- social services provided to the family, currently and in the past.

Safety education. All families should be provided safety education. Ideally every community should have education programs that give families the information they need to prevent fires and injuries, and to respond appropriately if a fire occurs. In addition, communities should be capable of providing this information to families after a child has

been identified as one who plays with or deliberately sets fires. Communities must establish minimum standards for quality of education. While education alone will not solve the problem, it is nevertheless an important component (Tremblay & Peterson, 1999). This information should include:

- the risk and danger of fire;
- proper storage and use of ignition materials - especially limiting children's access;
- recognizing and correcting other fire and safety hazards;
- proper installation and maintenance of smoke detectors—while 93% of all homes have smoke detectors; 44% of all home fires and 60% of all fatalities occurred in the 7% of homes without them (Hall, 1999);
- planning and practicing exit drills;
- emergency response skills.

Family/child intervention and support. That a child has started a fire, or even that he has had the opportunity to play with fire, suggests a need for family education or intervention. At the minimum, the parents must be encouraged or required to review their storage of ignition materials, their supervision and monitoring practices, their assignment of responsibilities, limit setting, and behavior management strategies. These can be provided either in individual or group sessions, and must be designed to encourage reluctant or resistant parents to participate.

One of the key challenges to a community is to provide these services at no, or at most minimal, cost to the families and in a manner the families will be willing to accept. Both reasonably intensive initial interventions and less frequent, less intensive long-term support are crucial. Child-focused interventions such as participation in available recreation or after-school programs, participation in youth clubs and linkages to a mentor are simple, low cost approaches, which have substantial impact on children's behavior and provide needed supervision.

It is important to consider models where all families in the community are invited to participate. This reduces the stigma of attending and enhances the power of the intervention by providing less functional parents with more functional models. Some communities have had success providing parent training programs in the community, apart from social service or mental health agencies. These programs have been sponsored by schools, churches, libraries and fire departments, directed at injury prevention, problem solving, communication and limit setting. There is no stigma attached to attending a prevention program designed to help keep families injury free and to build family assets. For example, TAPP-C (The Toronto Arson Prevention Program) describes the goals of its program as enhancing family safety – certainly a desirable goal for any family (McKay, 1996; Hanson et al., 1995**)**. This is in stark contrast to remedial or mandated programs designed for parents of children in trouble.

Programs that use paraprofessional "family advocates" rather than professional social workers or psychologists to organize parent groups have been successful in recruiting

reluctant families. In addition, delivery of services through frequent in-home contacts by family advocates is a useful approach to reaching families unwilling to join group activities. Selected members of the local fire service could perform some of these functions.

If either the parents or the group leaders feel further individual counseling would be helpful, those referrals can be made. These groups provide linkages to a range of community resources. There must be an opportunity to participate in follow-up groups, and to receive periodic, on-going support.

These interventions will reduce the risk of all types of injury as well as the likelihood of fireplay and firesetting. In addition, by enhancing the parenting skills of the parents of children showing possible early signs of conduct disorder, they reduce the risk of subsequent conduct disorder, aggression and violence, school dropout and the overall range of problems associated with externalizing disorders.

In spite of their long-term potential, such programs must secure funding in the short run. Funding must support the coordination and monitoring, the agency training, and the actual provision of new services falling beyond the mandate of existing state and federal programs and not covered by private insurance.

Opportunities for out-of-home placement. While it is always preferable to maintain children at home, or in the least restrictive type of care, the majority of the panel felt that

communities must have resources for out-of-home placements for children when they are at imminent risk or when they place others at risk. A range of options, including short-term emergency placements, brief respite for families, and longer-term residential placement, is required.

Identifying and preparing facilities willing to accept children with a history of fireplay or firesetting is challenging. Securing funding for residential care is also challenging.

Training. Most communities have the basic resources necessary to provide relevant social services. They require training, however, to recognize and understand firesetting and to feel confident in their ability to effectively address the problem. In the little data that exist it seems clear that, for the majority of children, once the child and family receive an educational intervention and any contributing problems are addressed, the firesetting will cease (Cole et al., 1999; MacKay et al., in press). Given that over half of all children play with fire during elementary school (Grolnick et al., 1990) and that an even higher proportion of those children already on the case rosters of mental health and social service agencies are involved in fireplay, our community agencies are already working with children who play with or deliberately set fires, they just don't recognize it.

Coordination. A single community agency, or other coordinating body, is needed to organize an effective community response. This organizing entity must:

- help its community recognize and describe the problem by collecting local prevalence data - local data more effectively mobilize community action than national data or regional data;

- identify local organizations capable and willing to provide the necessary services outlined above;
- secure relevant training for each participating agency;
- provide a referral mechanism - a central source of information for every individual and agency within the community;
- facilitate cooperative arrangements among agencies and monitor system problems. Sometimes this will include initiating and hosting interagency training, or orchestrating larger community workshops;
- monitor the success of the program. This will include not only tracking the overall incidence and prevalence of firesetting, but also failures to secure appropriate interventions. Repeat training will be necessary, as will continued problem solving, addressing new issues as they arise.

Underutilized Generally Available Social Services

Teachers, educators and daycare providers "understand children and often develop personal relationships with both youngsters and their families. They are in a special position to educate children [and families] about fire safety (BIC, 1994)" especially the safe storage of materials, an understanding of child development, the appropriate assignments of responsibility and appropriate supervision. In addition, they can help identify and refer children involved in fireplay and firesetting.

While we typically think of teachers working in traditional classrooms, alternate or supplemental programs provide a valuable opportunity to reach low-income children. The largest and most well known of these programs is Head Start. Operating nationwide, local Head Start programs have the same opportunities as classroom teachers to educate and influence both children and their families. In addition they have the flexibility and desire to address a wide range of child development issues. Many Head Start, preschool and daycare programs have adopted one of two popular fire safety programs, *play safe! be safe!®* or *Learn Not to Burn®*.

Parent groups such as the PTA (as well as those organized by religious and civic groups and neighborhood associations) provide a forum through which communities can educate parents about fire safety, behavior management of their children, supervision, and the problems of fireplay and firesetting. These groups can help raise the community standard for the safe storage of ignition materials, for supervision of children, and for the

appropriate assignment of responsibilities. The parents can provide one another practical advice, support, and reinforcement for adhering to these higher standards. Through education they can raise parents' understanding of the problem of firesetting and encourage them to seek help if the children's firesetting does not respond to the parent's actions.

Youth programs and youth organizations such as Boy Scouts, Big Brother/Big Sister, and others organized by both secular and religious organizations. The adults who work with youth in these groups have the same opportunity to influence children and adolescents as do teachers. Because of the personal relationships they develop with the children, they are able to both educate the children about fire and fire safety and also influence their attitudes toward experimentation and the use of fire for inappropriate ends such as seeking attention, the expression of anger or revenge. Organized youth also influence one another. Responsible, pro-social behavior by the majority will encourage and reward similar behavior in the minority. These groups provide a forum to actually teach the skills shown to reduce angry and aggressive behavior.

The activities of the groups themselves give the members the opportunity to engage in constructive and enjoyable activities at times they might otherwise find themselves unsupervised and alone, or with groups of other unsupervised children.

In 1992 the Carnegie Corporation identified 400 national organizations that serve youth (Carnegie Corporation, 1992). Their report was designed to identify community resources

that foster youth development by providing constructive, engaging activities in the non-school hours. These are all community-based organizations serving the children in their own neighborhoods. The largest and most well known organizations include:

- American Red Cross
- Big Brothers/Big Sisters of America
- Boy Scouts of America
- Boys and Girls Clubs
- Camp Fire Boys and Girls
- Child Welfare League
- 4-H Clubs
- Girls Scouts of the USA
- Junior Achievement
- NAACP
- National Urban League
- Salvation Army
- YMCA

> "For program planners concerned with extending services to adolescents in high-risk settings, the most direct way of targeting such services is by expanding services in low-income neighborhoods. While it is possible to identify particular young people who have initiated problem behaviors at an early age, or whose parents do not provide adequate support, such strategies tend to stigmatize individual youth and to follow a deficit-

> oriented model, rather than a youth development approach. The case for focussing on low-income neighborhoods is strengthened by knowledge that economically deprived areas tend also to have less adequately funded public services, higher crime rates, more drugs, more physical danger, and fewer positive role models for young people (Carnegie Corporation, 1992, page 28)."

Two of the evaluations of programs described include:

> "…The Association of Junior League's Teen Outreach Program, a school based life skills management and community service program for middle and high school students, found that participants were less likely than peers who did not participate in the program to become pregnant, drop out, or be suspended from school…(page 38)"
>
> "An evaluation of Boys and Girls Clubs of America's SMART Moves (substance-abuse prevention) showed substantial differences between housing projects that had clubs and those that did not. Residential areas with clubs experience an overall reduction in alcohol and other drug use, drug trafficking and other drug-related crime (page 39)."

While not definitive, these evaluations demonstrate the potential of involving local youth programs in an overall effort to address fireplay and firesetting.

Physicians, nurses, nurse practitioners and other health providers have the "trust and attention of parents and families (BIC, 1994)" and can educate and change behavior.

Pediatricians are a respected source of information and advice and the advice they give is specifically keyed to the children's age and level of development (Cole et al., 1999). As each child completes his or her routine well child visit both the child and parent can review key safety information. Equally important, the pediatrician can review the parents' discipline, behavior management, and supervision strategies. They can inquire about the assignment of responsibilities and when and for how long the children might be left unsupervised. They can then provide specific information individualized to particular children and families.

With proper interviewing they are also able to identify children who might be engaged in fireplay or firesetting and, if appropriate, refer the child and family for further evaluation and intervention. This may arise during a well child visit or during any visit for attention to an injury. They can also identify signs of abuse and neglect or other serious family dysfunction, factors related to conduct disorders and serious, repeat firesetting.

Traditionally, heath care services are provided in private offices or clinics. While efficient, not all potential recipients take advantage of the available services because of the difficulty of actually making and keeping appointments. Furthermore, office or clinic based providers will not see firsthand the home environment and cannot tailor suggestions to individual family circumstances. Recently, nurse home visitation has been shown to be a valuable addition to office based care. In addition to being more sensitive to individual circumstances than office based care, the provider is able to develop a relationship with her patient. The additional insight garnered through a home visit and the

personal relationship that develops gives the nurse an opportunity to make specific, context-sensitive suggestions and the leverage to help ensure compliance. Recent evaluations of a carefully designed and evaluated nurse home visitation program have shown reductions in intentional injuries (documented abuse and neglect), unintentional injuries (during the first four years of life) and adolescent criminal and antisocial behavior (Olds et al., 1997; Olds et al., 1998; Kitzman et al., 1997). The Olds program is currently operating in 130 communities nationwide. Local communities raise funds to pay for program operations and training. Federal funds most frequently used include Medicaid, Maternal and Child Health Block Grants and Temporary Aid to Needy Families.

Other home visitation programs include:

1. **Healthy Families**, now operating in 300 cities in 39 states. Eighteen programs are offered statewide. Healthy Families provides home visits by paraprofessionals from the community to families who score high on a standardized family stress check list and who also have new babies (Children's Defense Fund, 1999) The home visitor teaches parenting skills, supports the parents and provides access to child and family services;
2. **Parents as Teachers** (PAT) operates in over 2000 sites in 49 states. A PAT parent educator visits each participating family at least four times each school year to give parents information about child development and parenting skills along with general encouragement and support; families with greater needs receive more frequent visits and extra services (Children's Defense Fund, 1999);

3. **The Home Instruction Program for Preschool Youngsters** (HIPPY) uses trained paraprofessionals from the community to visit families of four- and five-year-olds to offer support and information about child development, parenting techniques, nutrition and health and safety issues. HIPPY is now operating 121 programs in 28 states and the District of Columbia. (Children's Defense Fund, 1999)
4. The "**Family Ties**" program in New York City uses family advocates to work with two or three families at a time. The paraprofessional spends five to ten hours each week during the initial stages of an intervention in the homes of the families to observe and modify familial behaviors and practices.

Such programs already address childhood injuries and parenting skills. These could easily be expanded to include information regarding child fireplay and firesetting and the particular factors most closely related to them.

Mental health professionals and agencies provide assessment and diagnosis, can tailor interventions to particular children and families, and can provide group interventions. Mental health agencies can address a wide range of child and family problems. In addition, mental health agencies can provide training to all of the other community organizations that have the opportunity to work with children or their families. They can provide training in the recognition and referral of children involved in fireplay and firesetting, of children with impulse control, anger, aggression or conduct problems, and of families who are not successfully managing their children's early life course. They can offer some insight into the children's motivations and give each organization guidelines on how to maximize the effectiveness of their efforts.

Typically mental health services, like other health services, are office based. Some of the most effective programs, however, are taken to the children in schools, youth programs, residential treatment facilities and even jail. One carefully constructed and well-evaluated program, The Prepare Curriculum (Goldstein, 1988) teaches children a variety of emotional regulation (anger management, stress management) and interpersonal skills. The program is carefully designed to be taught in small groups and to address the particular needs of the group members. It is research based and provides opportunity for modeling, role-play, practice, feedback and the transfer of the newly acquired skills from the group setting to the real world of family, school and neighborhood. The program has been evaluated and shown to reduce repeat delinquency among adjudicated delinquents. It is currently being used nationwide.

This type of program exemplifies a flexible, cost effective approach to mental health intervention that engages children and adolescents by addressing their needs and giving them ample opportunity for practice and feedback. It already addresses a number of the psychological factors that are related to fireplay and firesetting. Anyone skilled in working with children is capable of conducting the small groups. Training materials are widely available. They are easy to incorporate into any firesetting prevention or intervention program.

Social service agencies, in this context, refer to those community services designed to protect the safety and welfare of children, known locally as either child protective or child welfare services. Also included here are those preventive services provided by the state to help address family dysfunction and avoid placement of children in foster care. These agencies can provide caseworkers to work with individual families. They direct their efforts toward serious family problems, physical and sexual abuse, and neglect – problems known to be related to serious conduct problems and to serious and persistent firesetting. Child protective services are an important contributor to the overall community response to serious family dysfunction in general and to firesetting in particular. Once charged with responsibility for a family they will reach out to that family in ways that a mental health agency cannot. Further, they can mandate services for children and families, insist that families participate (or risk having the children removed from the home) and they can pay for these services.

Recent social service initiatives create interagency teams that expand the capacity of social welfare agencies to address youth headed toward the juvenile justice system who have mental health treatment needs. These programs directly address the needs of children with conduct disorders or other diagnosable mental illnesses that engage in firesetting. Following are three such programs funded by the State of New York.

1. **The Coordinated Children's Services Initiative** (CCSI), a multi-agency effort currently operating in 33 New York counties and designed to reduce out-of-home placements of children with emotional disabilities. CCSI was designed to promote community-based alternatives that support the care of children in family and family-like settings and to address the fragmented, categorical and inflexible nature of the children's service system. CCSI is based on three core principles:

- Cooperative interagency planning and integrated service delivery;
- Individualized care including service plans developed around individual client needs rather than pre-existing categorical programs;
- A strength-based approach emphasizing empowerment of clients and focussing on client strengths rather than weaknesses.

2. **PINS Diversion/State Interagency Team** was created by the PINS Adjustment Services Act to prevent inappropriate or unnecessary court intervention on behalf of persons alleged to be in need of supervision (PINS). The act put in place mechanisms to divert youth and their families from the judicial system to preventive and community

based services. The act created an interagency planning process which encourages collaboration among and between relevant local and state agencies. Teams are currently operating in 38 New York counties.

3. **Mental Health/Juvenile Justice Project** (MH/JJ) is an interagency collaboration designed to examine the mental health treatment needs of youth who are placed in the juvenile justice system. MH/JJ teams are created within probation departments. Among the anticipated outcomes:

- Juvenile delinquents referred to the family court system and their families will receive a comprehensive interagency assessment of their service needs whenever it appears necessary;
- There will be a decrease in time from when a child with mental health or alcohol or substance abuse service needs is referred to the Family Court system to when the child begins receiving services;
- Juvenile justice workers will become more aware of criteria for appropriate referrals for mental health or alcohol/substance abuse services and will better utilize these services in appropriate cases;
- Mental health workers will become more aware of and responsive to the needs of the juvenile delinquent population and the juvenile justice system.

These teams could easily be expanded to include juvenile arson investigators and to address the needs of the juvenile firesetter - many of whom are charged with arson.

Other states have tried other approaches to coordinating the efforts of child welfare agencies with other local and state services. “Delaware, for example, pairs an alcohol and other drug (AOD) counselor and child welfare service worker to do joint case planning and home visits (Children’s Defense Fund, 1999)”.

“In Ohio, a parent who already has gone through substance abuse treatment and is in recovery is paired with the child welfare service worker to help families with substance abuse problems (Children’s Defense Fund, 1999).”

The El Paso County Department of Human Services helps provide grandparents and other non-parental relatives caring for related children (Children’s Defense Fund, 1999).

Law enforcement agencies are frequently the first agencies to identify fireplay and firesetting. Often they are charged with responsibility for investigating fires, especially fires suspected of having been intentionally set. Law enforcement agencies have the power to investigate. They can uncover a great deal of information about a child and his or her family following a fire incident. This information is critical for making a rapid and appropriate referral. If a crime has been committed, the investigating agency can work with other juvenile justice agencies to insist families participate in education and intervention programs.

Numerous police departments are involved in cooperative ventures with social service agencies to provide a coordinated approach to criminal activity. One such program, The

Child Development – Community Policing (CD-CP) program developed by the New Haven Department of Police Services and the Child Study Center at the Yale University School of Medicine, addresses the "psychological impact of the chronic exposure to community violence on children and families. The CD-CP program brings police officers and mental health professionals together to provide each other with training, consultation, and support, and to provide direct interdisciplinary intervention to children who are victims, witnesses or perpetrators of violent crime (Marans & Berkman, 1997)."

"…. the New Haven model of community policing…places officers on permanent assignment in neighborhoods, expands their role in building relationships with community residents, and encourages their regular contact with children and families in a range of non confrontational settings (Marans & Berkman, 1997)." Community policing adds another dimension to what police departments can offer communities trying to address delinquency in general and firesetting in particular. Not only do they fulfill the investigation and referral roles, but they bring responsible, skilled adults into the community to work with children. The reach of the teacher or the mental health provider is limited to the classroom or to the group meeting. The juvenile officer on the street can monitor the activities of the children, and if necessary intervene, where they live. The CD-CP program is now being replicated in 7 cities nationwide, four with Office of Juvenile Justice and Delinquency Prevention (OJJDP) funding.

Approaches to Organizing Community Efforts

We do not need new, specialized juvenile firesetting intervention programs. We need to apply existing resources in a coordinated manner. The major failure of most communities

is to provide no services at all – primarily due to the failure of agencies to work together. Too many agencies try to fit children into existing categorical programs. If a child or his family does not match the criteria, no services are forthcoming. Without coordination, services provided by other agencies are not suggested. In addition, many services have no outreach component. If a family will not, or cannot, come to the agency office, they receive no services. If they start, but eventually stop coming, no follow-up is conducted. In such cases they receive inadequate services. A coordinated approach that tailors services to individual families ensures that all families that need services receive them. "A very strong case can be made for multi-component programs that address broad objectives. Categorical programs that focus on only one behavior…are important, but unless they are linked together into a more rational approach to reach young people, they will continue to have limited effects (Dryfoos, 1990)."

In some communities a single agency, the fire department for example, might take full responsibility for community organization. With full agency support this model has worked well (Rochester, NY). Fire prevention and fire safety is the mission of the fire service and it has a stake in providing the leadership to develop community resources and to monitor its success.

Alternatively, any number of individuals, especially representatives of community organizations invested in positive youth development and family services, and with the necessary resources, can form an organizing task force.

These two approaches characterize two competing models for organizing a community response to juvenile firesetting and fireplay. Each has its own strengths and weaknesses.

Investing leadership in a single agency. A single, respected agency committed to addressing juvenile firesetting brings instant legitimacy to a community's efforts. In addition, it provides clear leadership. A single organization will set the direction of the program, invite others to participate, take responsibility for the overall success or failure of the program and hold others accountable for their contribution. A single agency also provides an infrastructure. They can provide staff support. The staff can arrange meetings, take minutes and follow-through with tasks.

Investing leadership in a single organization makes the community dependent upon the continuing commitment of that organization. If the directors of that organization leave, or alter their priorities, the community program suffers. In addition, if the lead agency takes too strong a role and does not invite and encourage the efforts of others, their involvement will diminish. The overall program requires the services and resources of a variety of agencies. A loss of involvement precludes the community from developing a complete intervention program.

Creating a community task force. This type of organization may provide more stability, a more balanced perspective of the problem, and a greater knowledge of community resources than a single agency. A task force may permit greater diversity of opinion than a program directed by a single agency. In addition, this type of organization may be more stable because retirement or loss of a key person is less likely to disrupt the function of a task force than the loss of the leader of an organization that holds sole responsibility for the management of the program.

The initial progress of a program directed by a task force will likely be slower than a program directed by a single agency. The task force will need to develop a leadership structure and negotiate a set of priorities. Some early leaders may resign if the emerging structure and priorities do not align with their priorities.

The task force has no infrastructure. It has no staff. Necessary tasks may not be completed between meetings. Administrative chores, such as scheduling meetings and taking minutes, typically fall to a few committed task force members. Without staff support, these individuals will eventually tire of these responsibilities, resent the disproportionate workload and cease to volunteer.

A third alternative. One alternative combines the inclusiveness of the task force with the infrastructure of the agency lead model. If a task force were able to secure funding and hire an executive director and a small staff, it would have the ability to both set broad, representative priorities and to meet its goals. In addition, the task force should

have clearly defined and perhaps limited responsibilities. Rather than accepting responsibilities for the operation of a community program, it might think of its role as identifying key community organizations or professional groups and then providing education and training for those groups. The task force would be a catalyst for the development of a community response, but would not shoulder responsibility for its actual operation. Each community organization would continue to work independently, but with a greater understanding of the problem and the implications of its actions or failure to act.

An example of such a program is Toronto's The Arson Prevention Program for Children (TAPP-C), a collaborative intervention program for children aged 2-17 years that is delivered by both fire service and mental health professionals. Children involved with fire are referred to the program by parents or caregivers, local fire or police departments, schools, mental health centers or the justice system. The local participating fire department provides immediate fire safety education, including home safety checks for smoke detectors and accessibility of matches/lighters. Mental health professionals conduct risk assessment and appropriate services (MacKay et al., 1996.)

This model is inclusive, allowing all members of the community to participate while benefiting from a diverse range of opinions and many types of expertise.
Because it is broad-based, it is not dependent upon a single agency which might

disappear or lose interest. The presence of a staff provides continuity and support for administrative tasks. This model requires that the task force be able to secure funding over time.

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