

## **Burn Education Awareness Recognition and Support (BEARS): A Community-Based Juvenile Firesetters Assessment and Treatment Program**

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In response to the continued staggering statistics of fires set by juveniles and the devastating personal and property costs that are associated with these fires, the Burn and Shock Trauma Institute of Loyola University Medical Center, in collaboration with the State Fire Marshal's Office; the Illinois Fire Safety Alliance; and representatives from the firefighting community, law enforcement, emergency medicine and mental health, came together to create the Burn Education Awareness Recognition and Support Program. Through financial grant support from the International Association of Firefighters, the Illinois Fire Safety Alliance, and other private donations, the Burn Education Awareness Recognition and Support Program is able to provide a free resource to anyone who is concerned about a child playing with fire. Specially trained firefighters assess each child using the tool developed by the Federal Emergency Management Agency. In 2002, we assessed 42 children; 29 of those children were referred through the courts. So far, none of the children treated in our program have returned to fire-setting behaviors. (*J Burn Care Rehabil* 2004;25:324-327)

According to the Illinois State Fire Marshal, of every 100 people in the United States, 16 are children.<sup>1,2</sup> Of every 100 people who die in fires in the United States, 25 are children.<sup>1,2</sup> Of every 100 children who die in fires in the United States, 24 are killed because of children playing with fire.<sup>1,2</sup> Of every 100 people who die in fires set by children in the United States, 85 are children.<sup>1,2</sup> In the state of Illinois, from 1997 to 2001, there were 420 injuries and 25 deaths that were reported as a result of fires set by children.<sup>1</sup> Property damage reports ranged from 3 to 8 million dollars per year during this time period for fires set by children.<sup>1</sup> According to the Federal Bureau of Investigation, arson is the second-leading cause of fires nationally, and 55% of all arsons are set by minors, making this the only felony crime where minors outnumber adults.<sup>2</sup>

In response to these staggering statistics, the Burn and Shock Trauma Institute of Loyola University Medical Center, in collaboration with the State Fire Marshal's Juvenile Fire-setting task force, the Illinois Fire Safety Alliance, and representatives from the firefighting community, law enforcement, emergency medicine and mental health, came together to create the Burn Education Awareness Recognition and Support (BEARS) Program. An Advisory Board was created to oversee the operations of the program and to have input into its future direction. The Advisory Board consists of representatives from Loyola University Medical Center, Chicago Fire Department, State Fire Marshal's Office, Suburban Fire Departments, Chicago Bomb and Arson, Chicago Police Department, Cook County and DuPage County Juvenile Court, and Chicago Lakeshore Hospital.

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### **METHODS**

The BEARS Program is a free resource available to anyone who is concerned about children playing with fire. It provides trained juvenile firesetter intervention specialists to interview a juvenile firesetter and their family. The Federal Emergency Management Agency

tool was created in 1988 by a group of health care professionals to assist in assessing child-setting behaviors, determining a continuum of risk for ongoing fire-setting behaviors from "little risk" or "curiosity firesetter" to "extreme risk".<sup>2-4</sup> The assessment tool consists of three parts: the child interview, which assesses the fire-setting incident; the family interview, which further assesses the incident as well as assesses the family response and potential family dysfunction; and finally, a child behavioral work sheet. Upon completion of the three-part form, the interviewer scores the answers. Certain answers are weighted questions, and these are used to compile an overall score. The scores are then divided into three categories, curiosity, moderate, and extreme. The final assessment is based on total score, as well as the percentage of scores placed in either the moderate- or extreme-risk categories. Any child who scores in an extreme-risk category is referred for further mental health evaluation. If greater than 20% of the scores are in the moderate column, a mental health referral is generated, and if the majority of responses are scored in the curiosity column, then the child is referred for fire safety education.<sup>2</sup>

Upon completion of the Federal Emergency Management Agency assessment, an intervention specialist can determine the child's level of interest in setting fires. An intervention strategy can then be developed and discussed with the child's parent or guardian. Most children who set fires simply require fire safety education.<sup>3-8</sup> Many children are simply curious and simply do not understand the potentially devastating consequences of playing with fire. For others, fire play can mean something more and is meeting an emotional need for them. For these children, mental health intervention is often needed.<sup>6,9,10</sup> The BEARS Program works very closely with the juvenile court systems and provides an alternative to sentencing, particularly for first-time offenders. Not only does our program free up the court system, but instead of simply paying a fine, or doing some type of community service, the child offender, along with his or her family, has an opportunity to obtain some education about the risks of setting fires through a nonthreatening relationship with a trained firefighter. Over this past year, our program has assessed over 40 children, most of who were referred through the court system, or law enforcement. We have an educational curriculum that has been developed by firefighters with the support of the Illinois Fire Safety Alliance that is organized by age and grade level of the child enrolled in the program.<sup>5</sup>

## RESULTS

In the year 2002, our program evaluated 42 children, in addition to providing consulting to existing programs throughout the area. Twenty-nine of the children were referred by the Cook County Juvenile Court. As a result of our success with the Cook County Court system, DuPage County Juvenile Court, a county directly west of Chicago, as of March of 2003 has asked us to take referrals from their court system. The rest of the referrals came from law enforcement, outside fire departments, hospitals, or from parents who have heard about our program. None of the children referred to our program have returned to fire-setting behaviors. Eight of the 29 children referred by the court did not show up for their assessments and were referred back to the court system to the state's attorneys to process for potential criminal charges. Steps have been taken to reduce the number of "no shows," and we are hopeful in this next year, those numbers will significantly go down. Four children referred by the courts were referred for additional mental health evaluation and intervention. The age distribution, racial distribution, and family structure of the children our program is illustrated in Figures 1 through 3. In the study reported here, the children tend to be older than those in other programs in that at the present, most of our referrals come from the court system.<sup>3,4,8</sup>

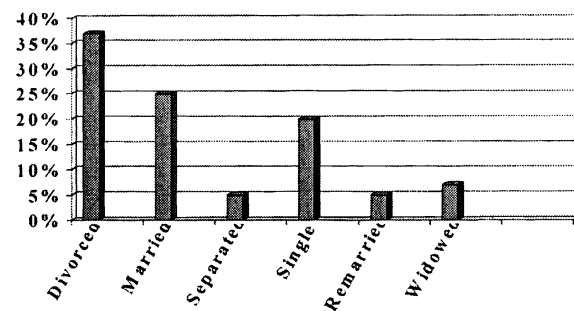


Figure 1. Family status.

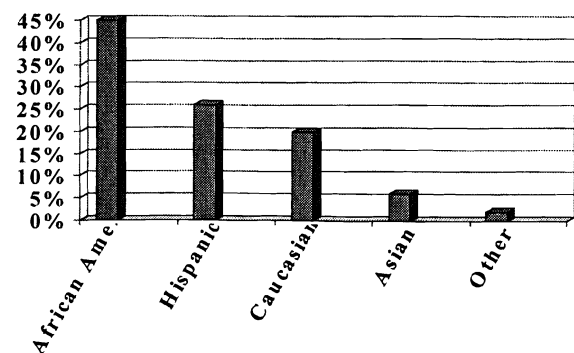


Figure 2. Ethnic breakdown.

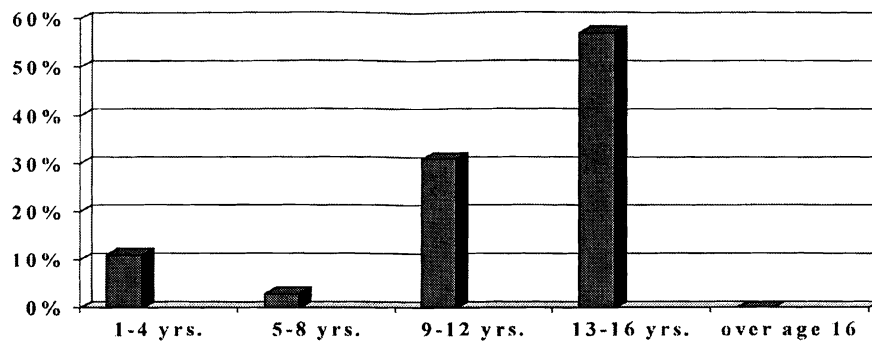


Figure 3. Statistical report by age group.

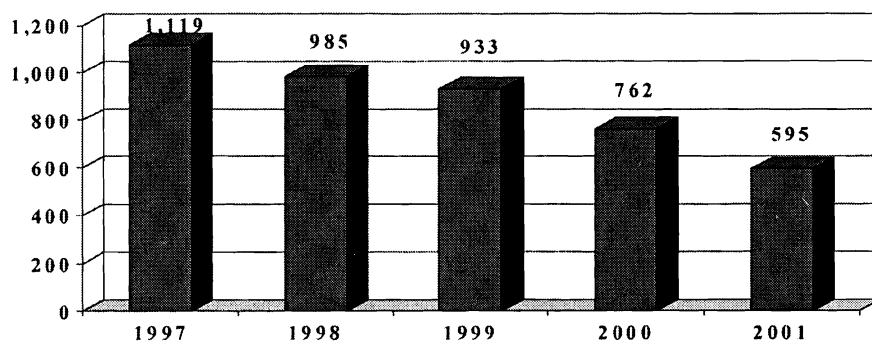


Figure 4. Fires set by juveniles in Illinois. Statistics reprinted from the State Fire Marshal's Office.

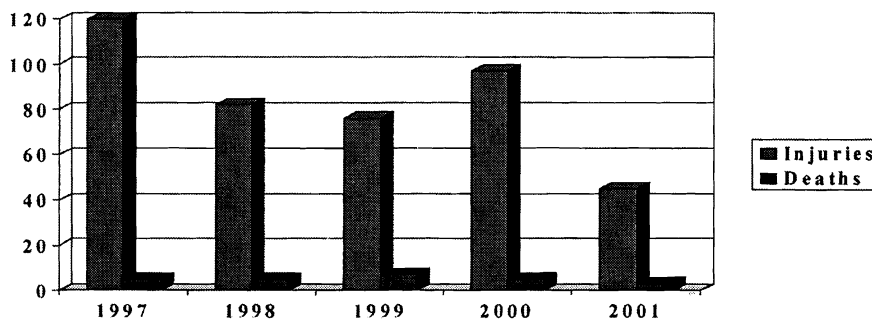


Figure 5. Injuries and deaths caused by fires set by juveniles in Illinois. Statistics reprinted from the State Fire Marshal's Office.

The state of Illinois, through the State Fire Marshal's Office, has made raising the awareness of juvenile fire-setting behaviors a priority, developing a statewide task force to work on this problem. Hundreds of firefighters have been trained as interventionists with the hope of reducing the devastation in which fire play can result. The efforts of fire departments and programs like ours through out the state are paying off. In the past 5 years, the number of reported child-set fires has been reduced by half.<sup>1</sup> Property damage losses have been reduced by more

than 5 million dollars. Perhaps most importantly, injuries to children have been reduced by 60%.<sup>1</sup> It is important to note that these are "reported fires," and one can safely assume that the number of unreported fires set by children is much higher; however, we are still hopeful that the trend overall appears to be declining, given the only available published data that our state has.<sup>1</sup> Figures 4, 5, and 6 depict trends noted by the Illinois State Fire Marshal's Office for numbers of fires, injuries, deaths, and dollar loss for juvenile set fires in Illinois during the period of 1997 to 2001.<sup>1</sup>

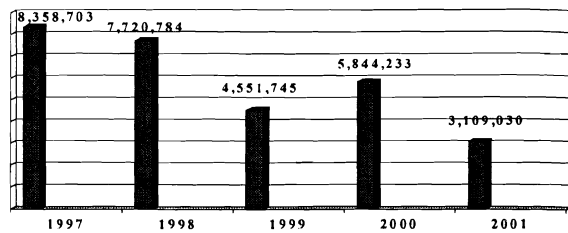


Figure 6. Estimated dollar loss from fires set by juveniles in Illinois. Statistics reprinted from the State Fire Marshal's Office.

## DISCUSSION

Much more research is needed to truly assess the effectiveness of our program. Currently, we are assessing for any return of fire-setting behaviors at 6-month and 1-year intervals after our initial intervention. Until there is an improved reporting mechanism of fires set by children, unfortunately, it will remain difficult to assess whether we are truly making an overall difference. However, we will continue to analyze the current trends being reported by fire departments to the state of Illinois regarding fires set by children. The BEARS Program has been funded through grants obtained through the International Association of Firefighters, the Illinois Fire Safety Alliance, insurance companies, and private donations. Children referred to the program are assessed and provided educational support at absolutely no financial cost to them or their families. Our efforts appear to be working<sup>(1)</sup>; however, our program is completely dependent upon the generosity of others to continue to function and grow. The challenges that come with lack of funding are that the program is highly dependent upon the very limited time of already very stretched professionals. As our program grows, it becomes increasingly clear that it needs leadership that can devote more time to promoting, as well as researching, the effectiveness of the program. Additionally, our program would benefit from greater public awareness of its activities to heighten public visibility. Our hospital, Loyola University Medical Center, was contacted recently about the program, and the hospital operator did not know the BEARS Program existed, further emphasizing the need to market ourselves more effectively.

It is assumed there is still a large contingent of "untouched" referral sources, such as schools, with which we need to establish partnerships. Our goal is to reach all individuals who exhibit fire-setting behavior and prevent more future fire-setting acts. The lo-

cal public schools have not been used as effectively as they could be, resulting in most of our referrals coming from law enforcement. We must increase our efforts to find a representative of the public school system to have a voice on our advisory board.

We strongly feel we have developed a template that can be used in many other community settings. What sets our program apart from many other programs that are housed in fire departments is that ours is truly an integrated interdisciplinary community effort in attempting to mitigate the setting of fires by children, involving a burn center, mental health facilities, police departments, fire departments, and the legal system. We also involve the child's family in our initial assessments and follow-up educational efforts, treating not just the child but also his or her family system. We hope this program can be duplicated in other settings and communities and shown to be an effective tool in responding to children who set fires and in successfully mitigating the fire-setting behaviors. Admittedly, we are still a very new program and look forward to publishing data in the future that continues to reinforce this approach as a successful intervention to juveniles who set fires.

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