



# HOT-ISSUES

## Oregon's Juvenile with Fire Screening Tool

*... purpose, research background and the role it serves*

The Office of State Fire Marshal (OSFM) has shared the *Oregon Juvenile with Fire Screening Tool*® with other states and fire departments. The National Fire Academy's JFS I and II class includes it as an example of a fire service screening tool.

OSFM asks that the tool be used in its entirety, as written, with proper credit given. Any changes to the tool compromise the integrity of its design and the purpose for which it was created. Without research comparable to that done in Oregon, there can be no assurance an altered tool performs as expected.

Oregon interventionists receive extensive training on the tool about its purpose, research background, and the role it serves in a comprehensive community-based evaluation and intervention program. This article was written to explain to others who have not received any training how and why the tool was developed, its intended use and why OSFM asks that it not be altered, reformatted or distributed without OSFM permission.

The discussion printed here is an edited version of a more technical essay which is available on the OSFM Web site: [www.oregon.gov/OSP/SFM](http://www.oregon.gov/OSP/SFM).

**The problem** In the early 1990s, the Office of State Fire Marshal (OSFM) realized the fire service was the only entity assessing the firesetting behavior of youths. Many mental health providers conducted psychological evaluations, but only a few actually addressed the firesetting behavior. In 1996 OSFM convened a task force to develop interviewing tools for the fire service and mental health providers.

**A continuum of evaluation** The task force suggested a continuum, or gated assessment approach, with three levels. The first level would be a basic screening process which would consist of a

simple set of questions **focused on the fire incident** and would result in a decision to provide fire education to the youth and family at the fire department, or a decision to refer the family to the next level for a psychosocial evaluation. This screening could be administered by a trained fire service interventionist, a juvenile justice or child welfare caseworker.

At the next level, an assessment would take more time and would be more complicated administratively, clinically, and statistically. This level would give a more accurate description of the child's overall behavior, render a decision regarding clinical diagnosis, and

### Continuum of Evaluation

Basic SCREENING	Mental Health ASSESSMENT	Psychological/Psychiatric EVALUATION
Fire Service School Counselor	MSW/LCSW/LPC/MS School Psychologist	Licensed Psychologist, PhD Psychiatrist, MD
Fire incident	Mental status	Cognitive functioning, IQ testing
Fire history	Family functioning	Personality traits
Fire knowledge	Social functioning	Developmental issues
	Stressors/crisis	Psychiatric history

provide more information about the family, school and peers. This assessment would be administered by a master's level mental health provider.

The final, and most comprehensive, level of evaluation would consist of a comprehensive psychological including the administration of a battery of tests administered by a licensed psychologist or an evaluation conducted by a psychiatrist.

In adopting this gated assessment approach, the Oregon fire service realized they needed to develop a new interviewing tool that utilized the knowledge, skills, and abilities of a fire professional trained in fire science, investigation and education. This new tool would be based on a number of premises:

- 1) It would not classify level of risk; existing national interviewing tools were based on a mental health risk assessment model. The Oregon fire service sought to change that focus and replace it with a fire service perspective which recognizes that all firesetting behavior is a high-risk behavior since any fire has the potential to cause death, injury and property loss. Many environmental conditions affect whether a fire can get out of control. Factors such as wind and fuel load can quickly grow a tiny flame to out-of-control dimensions which may be totally unrelated to the youth's motive for setting the fire or propensity to repeat the behavior. Making a judgment call about the level of risk represented by a juvenile using fire is in itself risky because no one can say for certain if a youth will set future fires.
- 2) It should be relatively short and easy to administer. Most of the fire professionals in Oregon have multiple responsibilities and cannot devote hours of time to interviewing youth.
- 3) Training Oregon interventionists on the tool statewide would ensure they all follow established standard operating guidelines. This consistency would ensure credibility for interventionists with their Oregon mental health and social service partners.
- 4) The word "screening" would replace the word "assessment" to indicate the distinct role the fire service plays in the process of evaluation.
- 5) It would focus primarily on questions about the fire incident which would incorporate the observations of the fire investigator. These observations are invaluable to a mental health provider and are the questions that mental health providers have the least training experience in asking.

### How was the tool developed?

The *Oregon Juvenile with Fire Screening Tool*<sup>®</sup> was developed over a three year period through research conducted by Drs. Michael Bullis and Paul Yovanoff from the University of Oregon Institute on Violence and Destructive Behavior (the Institute) under a contract with the Oregon Office of State Fire Marshal.

Oregon's Juvenile with Fire Program (the Program) and the Oregon fire service had, since 1990, used the *Comprehensive FireRisk Evaluation* (CFRE) developed by Dr. Kenneth Fineman for the Federal Emergency Management Agency (FEMA)/United States Fire Administration (1980, 1995). The Program and the Institute recognized that a well-accepted theoretical structure of pathology had been articulated by the Fineman measures (Fineman, 1980, 1995). As a result, assigning a risk level had become the dominant model. The CFRE states it was "developed to help you acquire the information you need to determine risk, specifically, the determination of little risk, definite risk, or extreme risk, relative to the prediction of future firesetting [recidivism], and especially dangerous firesetting."<sup>1</sup>

The initial version of the assessment was a three-part screening (Form A—Family Interview, Form B—Child Interview, and Form C—Parent Questionnaire). Specifically, the Institute wanted to identify items that could be eliminated from the FEMA tool, thus minimizing the administration time without jeopardizing the accuracy of referral decisions. The abbreviated screening instrument should still enable differentiation of curiosity fire-setters from more serious firesetters, who would be referred for more complete clinical evaluation.

**Research procedures** Data used in developing the new screening tool were derived from approximately 130 CFRE tools completed by Oregon fire service interventionists between 1996-97. The Institute's general procedure was to sample behavioral indicators. Items that retained the theoretical structure of the CFRE were recommended for inclusion in the new instrument. When specifying procedures for abbreviating the new instrument, the Institute followed methods recommended by the American Psychological Association Standards for Educational and Psychological Testing (APA & NCME, 1995).<sup>2</sup> The Institute isolated statistically significant risk factors that determine whether to refer a youth for a mental health evaluation. The Institute focused on three domains: school, family and peer group/community. Firesetting youths having red flags in

any of the domains are identified as appropriate for referral and beyond the capacity of the fire service to deliver the mental health services needed.

Along with results from completed interviews, each item was clinically evaluated by a group of mental health professionals having extensive experience with juveniles misusing fire. The clinicians identified interview questions they believed indicated a youth at risk and in need of referral.

Item Response Theory (IRT)<sup>3</sup> was used to analyze the data. Following are the basic steps used in the IRT analyses.

1. Develop a Total Risk Scale.
2. Develop IRT Scales for Forms A, B, and C.
3. Equate the Total Risk Scale and IRT Scales.
4. Calibrate each IRT Item I.
5. Identify Optimal Items.
6. Use Clinical Evaluators for Assessment Items.
7. Develop a Total Risk Score and IRT Score Intercorrelations.

Based on analyses of the interview results and item evaluation by clinicians, optimal items were identified as clinically and/or statistically supported. There was good overlap between the clinically and statistically indicated items.

**Fast forward to the present** The *Oregon Juvenile with Fire Screening Tool*<sup>®</sup> is part of a holistic intervention model in Oregon. The model encompasses a continuum of care from least to most restrictive, beginning with a screening using the Oregon tool, referral for a mental health assessment if indicated, and a full psychological evaluation for the most severely at-risk youths.

Each step along the continuum is staffed by appropriately trained practitioners: Fire service interventionists are trained and certified by Oregon's Department of Public Safety Standards and Training to administer and interpret the screening tool; referral assessments are made by credentialed mental health professionals.

Connections between all practitioners are developed and maintained by local intervention networks. Periodic conferences and trainings keep skills current and introduce new practitioners to the field and to the networks.

Educational interventions are vital to the success of the state-led program. These include fire safety education and competency-based cognitive skills training. Diversion programs under the auspices of the juvenile department, hospital-based programs, residential treatment, and shelter care facility programs are at a more restrictive level of the

continuum. At the most restrictive level, youths over fifteen face mandatory sentencing to a secure juvenile facility if they commit a chargeable fire offense. Accountability through assumption of responsibility for the fire is stressed throughout the continuum and the safety of the youth, family, and community are paramount.

## References

- <sup>1</sup> *Instructions for using the Comprehensive FireRisk Forms*, Kenneth R. Fineman, Ph.D., Version 2.001 Jan. 2, 1999.
  - <sup>2</sup> American Educational Research Association, American Psychological Association, & National Council on Measurement in Education (1999). *Standards for educational and psychological testing*. Washington, DC: American Educational Research Association.
  - <sup>3</sup> Embretson, S. E., & Reise, S. P. (2000). *Item response theory for psychologists*. Mahwah, NJ: Erlbaum.
- Item analysis and test scoring with binary logistic models* (Version 3.0.2) [Computer Software]. Chicago: Scientific Software International. (A detailed explanation of the steps of the IRT analysis is available on the OSFM website: [www.oregon.gov/OSP/SFM](http://www.oregon.gov/OSP/SFM))

Ed. note: The present format of the screening tool was based on work done by Laurie Birchill, Oregon LCSW. The statistically significant items identified by the Institute were incorporated into the new tool, entitled *Oregon Juvenile with Fire Screening Tool*<sup>®</sup>.

The OSFM recognized the invaluable and pioneering work of Dr. Fineman and did not alter or change the integrity of the FEMA tool. That tool has stood the test of time since 1980 and formed the basis of other research projects. (Colorado Project, 1995.)

Just as the *Colorado FireRisk Assessment* should be used as developed and not changed or altered, so OSFM asks that our screening tool format not be altered, or new questions incorporated into it, and that recognition of the work be given to the state of Oregon. Without comparable research, changes to the tool compromise the integrity of its design and the purpose for which it was created.