

“SOS FIRES Family Interview Study”
Final Report Document

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Conducted by:

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INTRODUCTION

In September of 2002, SOS FIRES submitted a grant proposal to this opportunity. The grant project proposed the following:

The purpose of the proposed project is to formalize a team of experienced prevention specialists (SOS FIRES & Fireproof Children) and knowledgeable researchers (Drs. Cole and Burgess) in order to conduct a pilot prevention research project. This research project will involve in-depth interviews with children and families who have participated in youth firesetting intervention programs in Alaska, Oregon, and Washington. It will also connect this data collection to other nationally recognized efforts to accomplish similar outcomes. With the National Association of State Fire Marshal's (NASFM) as a partner, efforts will be linked to the development of a new on-line data reporting for information collection and dissemination. SOS FIRES has a history of collaboration with NASFM that makes for a strong partnership.

The main research goal for this project will be to define the characteristics of the nuclear family of the child or adolescent who set fires. From this major topic, the research team (staff and researchers from SOS FIRES, Fireproof Children and Burgess Consulting) will meet to develop an agenda and priority list of specific research questions. The team believes that it is essential to explore this topic in order to improve intervention strategies for youth who set fires and their families. Objectives toward this research goal include:

- *Develop a dedicated on-line data repository to meet the needs of data collection aspect of this project as well as the NASFM data collection component of their OJJDP grant (using their paper form as a model for data fields used). The system will provide users with an opportunity to store, organize, and retrieve data on youth firesetting.*
- *Collect behavioral data on approximately 60 participant families (20 families x 3 states) through in-depth face-to-face, key informant interviews with the child/adolescents, families and caretakers, and fire service professionals for reported firesetting incidents.*
- *The child/family/fire department interviews will be collected from 3 states from the Western region of the U.S (Alaska, Oregon, Washington):*
- *Collaboration will be sought initially from states that have partnered with NASFM in their recent OJJDP grant to provide statewide training in coalition building for juvenile firesetting intervention programs.*
- *Report results from this pilot study to meet grant requirements, and develop appropriate materials for dissemination of information to the participants, to other consumers and to professionals. This will include on-line presentation through the SOS FIRES web site.*
- *Promote the use and value of continued training and data collection in the sites participating in the program as well as pursue future grants to more thoroughly explore the other regions of the U.S.*
- *Work toward sustainability of the prevention partnership and future research projects.*

DATA COLLECTION PROJECT

- The data collection project will be completed on a self-contained CD by September 30, 2004. A copy will be forwarded to FEMA at that time. Along with that, 200 CD's will be produced and given to NASFM for distribution with their state training program, which has been funded, by the Office of Juvenile Justice and Delinquency Prevention. Any remaining from that project will then become available through SOS FIRES for the cost of production and support.

INFORMATION SHARING

- SOS FIRES will make all findings available to FEMA and post all information on their web site (www.sosfires.com). Complete reports, in printed format, will be available on request or be accessible as a free download from the web site. The data collection CD will be advertised through the web site as well and provide interested persons the information necessary to make a purchase.

METHODS

The Research Team consisted of 8 members. These are listed below:

- Don Porth – Principle Investigator
- Donna Burgess – Research Director
- Bob Cole – Research Consultant
- Lisa Lapsansky – Washington Interviewer
- Niki Pereira – Alaska Interviewer
- Joe Troncoso – Oregon Interviewer
- Brian Whitney – Behavior Specialist Consultant
- Alice Lasher – Behavior Specialist Consultant

Dr. Burgess prepared the survey questions in a qualitative format. The initial areas of study selected included:

- Family demographic information including primary and secondary residences.
- Medical history of the child/adolescent including prenatal history, birth events, and perinatal health.
- Early childhood health and development including any behavioral challenges.
- School history including preschool, kindergarten, and grades up to and including current placement.
- History of family attempts to teach child/adolescent to deal with conflict, anger and frustration.

- Information about child/adolescent's friends.
- Information about the amount of time the child/adolescent spends with friends, family, or alone.
- Information about the typical television, movies, and video games watched or played by the child/adolescent and any restrictions placed on those activities by parents or guardians.
- Information about types of activities that would be considered "risk-taking" engaged in by the child/adolescent with or without his/her friends.
- Information about the pain tolerance experienced by the child/adolescent.
- Information about any suicidal ideation on the part of the child/adolescent or any of his/her friends.
- Information about whether the child/adolescent had ever been the victim of one or more incidents of bullying and whether the child/adolescent had ever bullied other young people.

A training program for the interviewers was set up for September 20, 2003 in Renton, Washington (in association with the NASFM State Training held there on September 18-19, 2003). All team members attended this.

The September 20 meeting agenda included discussion and development of Human Subject Protections; Interviewer Responsibilities; Consent and Assent Forms; Research Protocol; and Interviewing Processes. It was decided that a subject base of 60 would focus on children referred to intervention programs beginning January 2003 ranging in age from 6-15 and be a mix of referred and non-referred (to mental health) cases. Of the cases sought, about $\frac{3}{4}$ are to be from urban settings and $\frac{1}{4}$ from suburban/rural.

The four interviewers selected for the study were all experienced youth firesetting intervention specialists. They did, however, require training to become research interviewers for the purposes of the study. In the interim between meetings, the Research Director sent all research team members articles and other materials on topics related to applied research. All team members studied the materials in preparation for the following meeting.

The Research Director, with the assistance of the Alaska interviewer, developed the following research materials: an ***Adult Consent form*** (to be signed by the appropriate parent[s] or guardian[s]), a ***Youth Assent form*** (to be signed by the child or youth involved in the Juvenile Fire-setter Program), an ***Adult Interview Protocol***, and a ***Youth Interview Protocol*** (all research tools included in Appendix A). The Adult Consent form and Youth Assent form met all Human Subjects requirements as stated in federal law and National Institutes of Health regulations.

The interviewers were trained to follow the "Protocol for Handling Research Materials" included in Appendix A. Among the most important guidelines, interviewers, and all researchers handling data, were reminded that, "You are responsible for following all National Institutes of Health Guidelines for Human Subjects Protection! Please take the Human Subjects on-line course, or we could lose this and any future grants."

Transcription services were needed to convert the recordings to electronic files that could be qualified by computer software. This service was contracted through the Alaska Injury Prevention Center. The transfer of all voice and written files would be packaged electronically (e-mail or CD) to facilitate quick and easy transfer. The transcriptionists both signed Confidentiality Agreements, and none of the transcribed documents contained any names. Single initials replaced all names. Only the Research Director could relate the transcripts to the file documents or the digital interviews. She collected all original research materials and keeps them in a locked, fireproof file cabinet to which no one has access except herself.

On March 30 2004, FEMA agreed to a 60-day extension for the project. This request was submitted because the notification of grant receipt arrived to SOS FIRES 69 days into the grant period. The grant completion date was now placed at June 30, 2004 with 90 days after to submit the final work product.

The database development portion of the project began in late February. A three-phase plan was developed, with grant funding to provide for phase one only. Phase one would include the development of a stand-alone data system contained on a single CD that could be installed on a single computer workstation. The data set would include personal data about the client as well as particular incident and non-identity related information that could be shared without breaching confidentiality. The sharable data set would mirror the data collection set used by NASFM in the State Training Program they had developed as well as be compatible with the National Fire Information Reporting System (NFIRS). This would provide valuable sharability to encourage data sharing at the national level.

Phase two (not to be grant funded) would develop an Internet web site, hosted by SOS FIRES, to create a download destination for sharable data. This would allow users the option to enter into a larger data evaluation program with the opportunity to query either their own data or the entire master data set.

Phase three (not to be grant funded) would develop a membership program to manage the input and output of data in the master, web-based system.

FINDINGS

For the purpose of the SOS FIRES final report, the findings below are summarized from both quantitative (SPSS) & qualitative (N6) data analyses. The findings are organized by: 1) major demographic results; and 2) results related to specific research topics posed by the research team at the beginning of the study (see Method Section).

Data Available for Analysis

The data collectors for the SOS FIRES Family Interview Study met their goal of collecting in-depth interviews for 60 families; 20 families in each of 3 states – Alaska, Oregon, and Washington. Quantitative data was collected for 61 cases. After data

cleaning, 59 cases were usable and are reported in the following results. Qualitative data were also collected for 61 families; for each family, an interview was completed with the parent(s) or legal guardian(s) and a separate interview was conducted with the child or adolescent who had been involved in a youth firesetting intervention program. After transcription and data cleaning, 105 interviews (i.e., 53 cases with one parent interview missing) were included in the reported data set.

Case Reliability Findings

Number of Cases by State

The number of families enrolled in the study in each state was consistent with the number expected. There were 20 families interviewed in Alaska, 20 in Oregon, and 21 in Washington for a total of 61 cases.

Frequency of Labels used at Screening

The 60 families enrolled in the study lived in diverse communities among three states; therefore, the youth firesetting intervention programs in which the families became involved had community-specific procedures. One difference among the programs was the “labels” used for children and adolescents assessed for potential fire danger and other risk-taking behaviors. Among the terms used for the young people served by programs involved in the three-state in this study were:

- Missing values = 4
- Complex case = 1
- Definite concern = 9
- High risk = 7
- Little concern = 18
- Low risk = 14
- Medium risk = 1
- Moderate risk = 1
- Simple case = 6
- **Total = 61 cases**

Frequency of Status (i.e., labels) at Interview Compared to Portland & Anchorage Data Sets.

To assess the integrity of the SOS FIRES study data set, it was important to compare the number and percent of cases in each status category compared to the established data sets from the youth firesetting intervention programs in Anchorage, Alaska and Portland, Oregon. Table 1 shows the number and percent of “simple” cases compared to “complex” cases in each data set.

Table 1. Number and Percent of Cases by Status and Data Set

Status	Study #	Study %	AK #	AK %	Portland #	Portland %
Complex	24	39%	-	40%	409	33%
Simple	36	61%	-	60%	818	67%
Total	60 cases	100%	354	100%	1227	100%

The SOS FIRES Family Interview Study sample compares favorably to established community data sets for distribution of types of cases. The “complex” cases comprise approximately 30% to 40% of the samples in all three sets regardless of size (i.e., number of cases), while the “simple” cases made up 60% to 70% of the samples. This means that the SOS FIRES data can be considered representative of the population sampled in the three states that participated.

Frequency of Status (i.e., labels) at Interview by State

Another reliability check was to compare the number of cases in each status category collected in each state in the study. The results are reported in Table 2.

Table 2. Number and Percent of Cases by Status and State

Status	AK #	AK %	OR #	OR %	WA #	WA %	Total #
Complex	9	45%	4	20%	11	52%	24
Simple	11	55%	15	75%	10	48%	36
Missing value	0	0	1	5%	0	0	1
Total	20	100%	20	100%	21	100%	61

From Table 2 Oregon appears to have reported significantly more “simple” cases than either Alaska or Washington. This result could have been influenced by the one case with a missing value. More likely, there were too few cases per state (20-21 cases), so the sampling in each state did not match the larger numbers represented by the established data sets in Alaska and Portland.

Demographic Findings

Frequency of Gender Compared to Portland & Anchorage Data Sets

Another important measure of the accuracy of the sample collected for the current study was of the number and percent of cases by gender compared to the established data sets in Alaska and Portland. The comparison of the study cases to the two other data sets are shown in Table 3.

Table 3. Comparison of Number and Percent of Gender of Cases

Gender	Study #	Study %	AK #	AK %	Portland #	Portland %
Female	8	13%	59	19%	409	15%
Male	52	85%	251	81%	2305	85%
Missing	1	2%				
Total	61	100%	310	100%	2714	100%

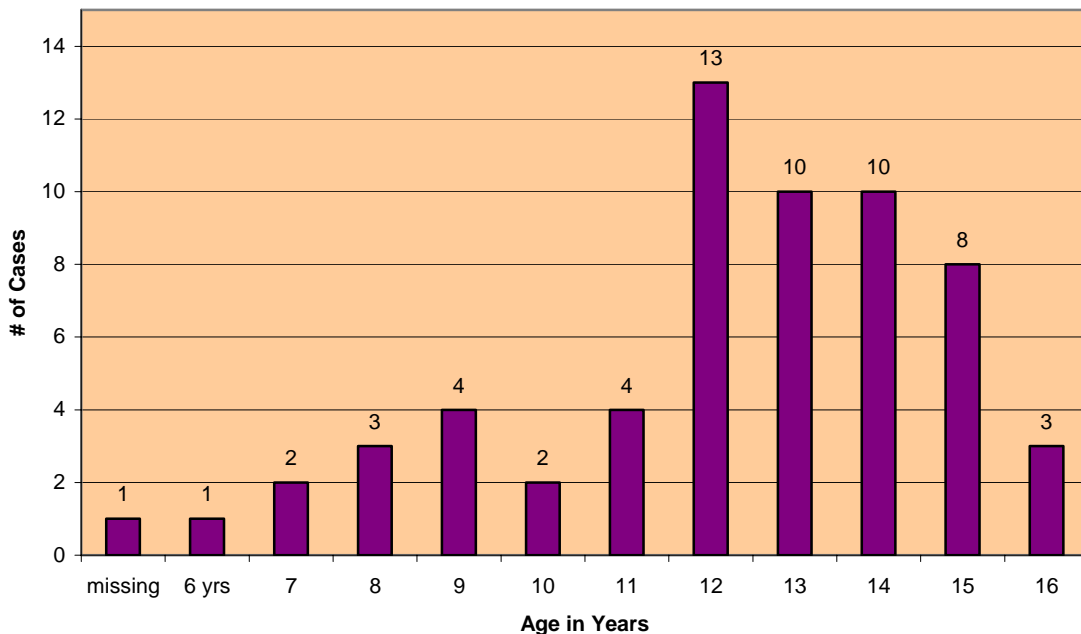
For the small number of cases collected, the SOS FIRES Family Interview Study sample compares favorably to the established community data sets for distribution of gender. The Alaska and Portland data sets range from 15% to 19% for females and from 81% to 85% for males. The SOS FIRES study cohort had 13% females, 85% males and 2% missing values.

Distribution of Child/Adolescent Age at Time of Study

The first demographic measure was the range and distribution of age in years of the children and adolescents interviewed for the study. These data are represented in Chart 1.

Chart 1. Range and Distribution of Children and Adolescent Ages

DISTRIBUTION OF AGES AT TIME OF STUDY



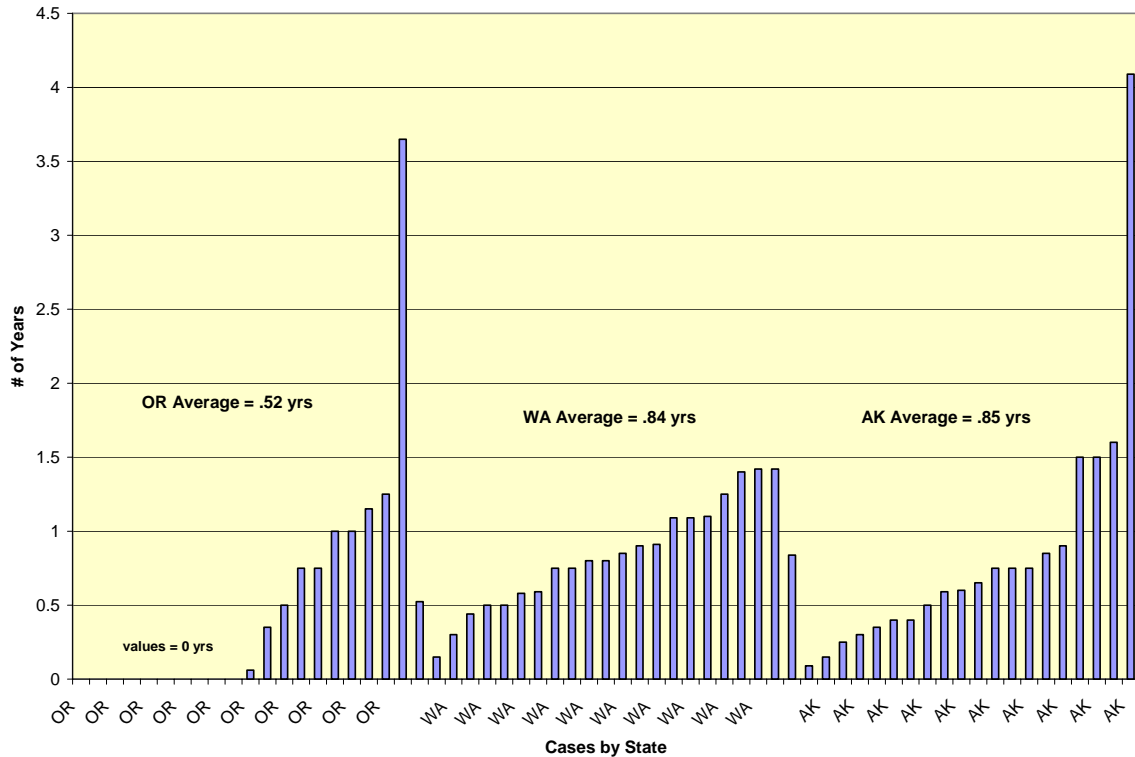
The data collectors were successful in meeting the intent of the study to enroll families with children and adolescents who had completed youth firesetting intervention programs. The range of ages of the young people interviewed was 6.10 years through 16.40 years. The SOS FIRES Family Interview Study sample complies with the age

range and distribution established for the study (i.e., ages 6–18). The distribution of cases followed a reasonably regular curve with the greatest concentration of cases at the ages of 12, 13, and 14 years.

Age Difference from Screening Interview to Study Interview-by State

Another demographic measure was the average difference in the child or adolescent’s age from the date of their youth firesetting intervention experience to the date of their study interview. Chart 2 show the average difference in ages across the three states sampled.

Chart 2. Age difference from Juvenile Fire-setter Intake to Study

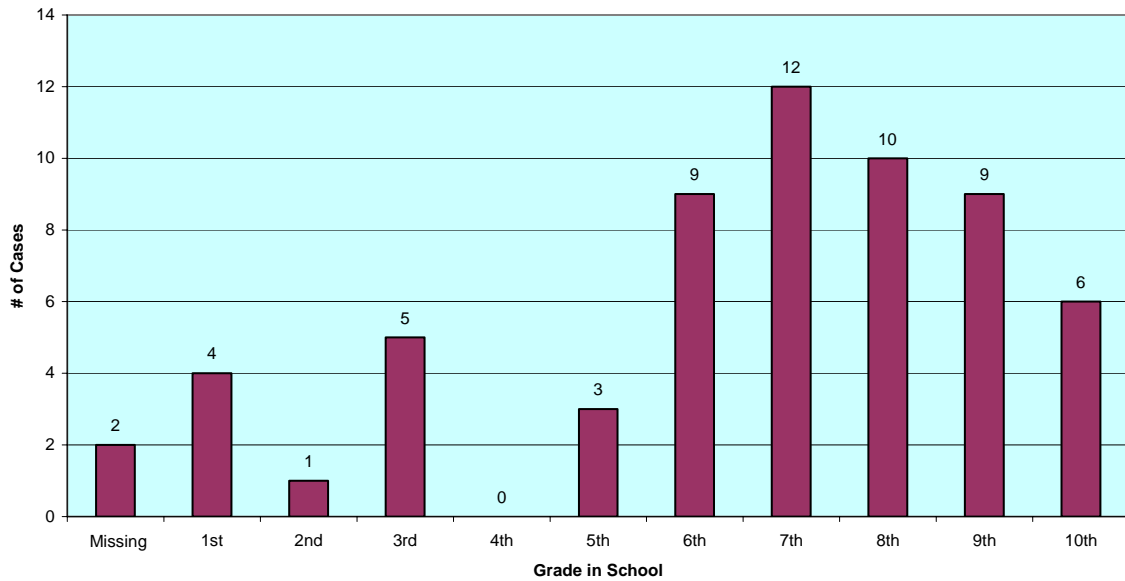


The average time between the intake into a youth firesetting intervention program and the interview for the current study in Oregon was .52 yrs. In Washington, the average time between the two events was .84 years, and in Alaska, the average difference was .85 years. Although the average time between events was very similar for Washington and Alaska, the average time for Oregon was not significantly different from the other two states. The average for Oregon was .52 years, which is still less than one year between the initial intake and the time of the study interviews with the families.

Distribution of Child/Adolescent Grade at Time of Study

The research team was interested in the distribution of grades in which the young people were enrolled who took part in the study. Chart 3 shows this information.

Chart 3. Range and Distribution of Grades of Participants



The range of grades in school represented in the study was 1st through 10th. The SOS FIRES Family Interview Study sample complies with the age and grade range and distribution established for the study by the research team, which was elementary through high school.

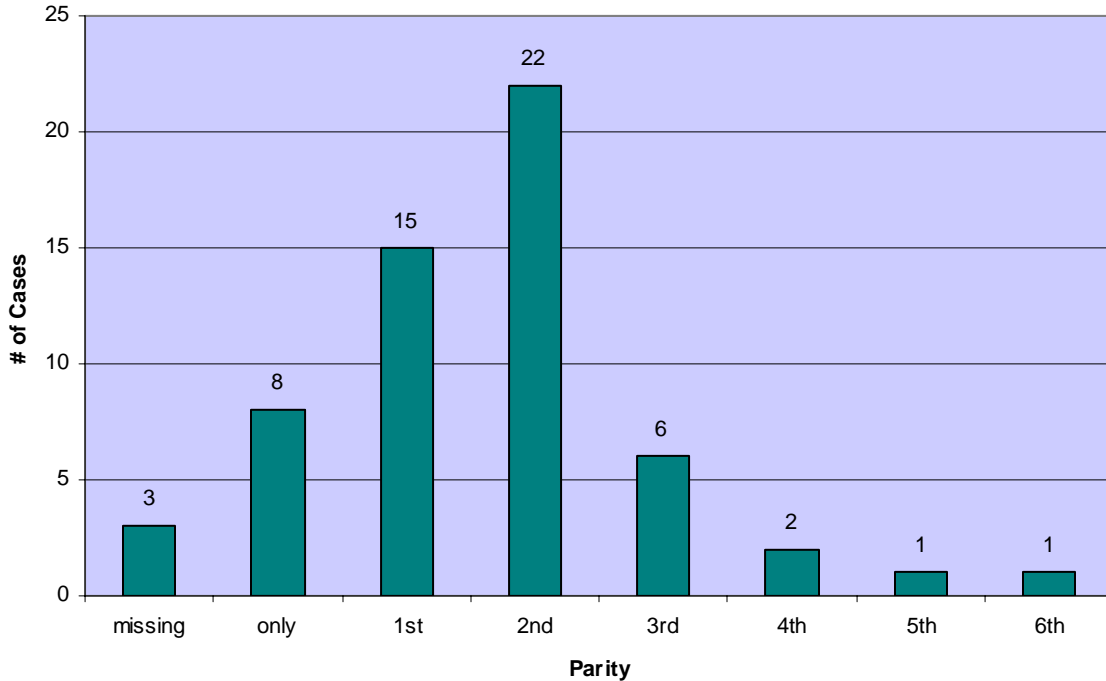
Comparison of Grade at Time of Study to Status

The variables of grade in school and status (i.e., simple or complex) at the time of the study interview were subjected to a cross-tabulation analysis to determine whether any relationship between these variables should be explored. Grade in school showed no relationship to the severity of status – i.e., age/grade could not be used as predictors of severity.

Distribution of Birth Order

Another demographic variable analyzed was the birth order, or parity, of the children/adolescents enrolled in the study. Chart 4 shows the distribution of birth order for the youngsters interviewed.

Chart 4. Birth Order of Children/Adolescents Enrolled in the Study



The analysis for parity yielded the first unexpected results. There appeared to be an unusual “spike” for second child in the birth order. It is critical to consider, however, that this sample (61 cases) is too small and informal to infer any relationship to fire-setting behavior or to generalize to families of juvenile fire-setters.

Comparison of Parity to Status

In light of the results for birth order, a cross tabulation analysis was conducted for the variables of parity and status (simple vs. complex case). As a result of this analysis, parity showed no relationship to the severity of status – i.e., birth order could not be used as a predictor of severity.

Analyses of Family Structure.

The next area of interest to the research team was basic family structure. This included all aspects of parent or guardian relationships to the children/adolescents involved in the youth firesetting intervention programs, the make-up of the primary families, and their interactions with social service systems.

Primary Guardians in the Families Studied

It was of interest to the team to determine the relationships of both the primary female and male caregivers to the children and adolescents interviewed for the study. Regarding the women who were involved with the young people their status included:

Female Guardians Enrolled in Study		
Mother	44	72%
Adoptive Mother	6	10%
Grandmothers	4	7%
No Female in Household	4	7%
Step-Grandmother	1	2%
Ex-Stepmother	1	2%

Male Guardians Enrolled in Study		
Father	25	41%
No Male in Household	14	23%
Stepfather	11	18%
Adoptive Father	4	7%
Boyfriend	1	2%
Partner	1	2%
Uncle	1	2%

The largest percent of children and youth were under the guardianship of their biological mothers (72%) with biological fathers second (41%). It was necessary to complete further analyses to determine the extent of the interactions between these relationships and the behaviors of the children/adolescents.

Comparison of Primary Guardians to Status of the Fire-setter

To determine the importance of the young person's living arrangement with one or more biological parent, the variable (biological parent) was analyzed in relationship to the status (simple vs. complex) of the firesetting behavior. The results of that analysis showed that:

- 32/36 (89%) "Simple" cases live with 1 or more biological parents.
- 16/24 (67%) "Complex" cases live with 1 or more biological parents.
- Of the 6 adoptive families in the study, 4 cases were "complex" and 2 were "simple."
- Of the 4 grandmothers as primary guardian, 2 cases were "complex" and 2 were "simple."

Analyses of marital status, female guardian employment, and guardian age yielded no significant predictors of status, i.e., severity of firesetting behavior.

Social Services prior to intake

Analyses were completed to determine the relationships between the status of firesetting behavior and the types of social services families were receiving prior to intake into the youth firesetting intervention programs. Results showed:

- 21/24 (88%) “Complex” cases were involved with a counselor, MD or psychiatrist prior to the initial screening.
- 5/36 (14%) “Simple” cases were involved with a counselor, MD or psychiatrist prior to intake.

As might be expected, “complex” cases have been involved in significantly more pre-screening experiences with counselors, family doctors, and/or psychiatrists than have the “simple” cases. As in previous sections, however, it must be noted that too few cases were involved in this study to generalize to all fire-setters of the populations of any of the states involved.

Acting alone or with friends to set fires

The research team was interested to learn about the supervision patterns of families related to youth firesetting behavior. One question relevant to that variable was whether the children reported acting alone or with friends when they set fires. According to the children’s and adolescent’s self-reports, verified by Fire Department reports:

- 8/24 (33%) “Complex” cases reported that they acted alone when they set the fire that initiated the referral to a youth firesetting intervention program.
- 4/36 (11%) “Simple” cases reported that they acted alone.

From the analysis, it appears that, in the current study, three times as many “complex” cases acted alone when setting the fire of record than did “simple” cases. Although these results are preliminary, and cannot be generalized beyond this population, further study of this research question is merited.

Pregnancy Complications Related to Severity of Status

Another feature of family status of interest to the research team were factors surrounding pregnancy and birth. Much information has come to light in recent years regarding the consequences of birth complications, so this question was asked of all parents/guardians interviewed. Results of the analyses showed:

- In 16/21 (76%) “Complex” cases, the mother or guardian reported having complications during the pregnancy.
- In 16/33 (49%) “Simple” cases, the mother or guardian reported having complications during the pregnancy.
- Of all the families included in the analysis, 12/49 (25%) reported that the babies were premature.
- Figures for “complications during delivery during delivery” were very close to those for pregnancy complications for both status groups (simple and complex) of youth. Delivery complications included:

- Anoxia/”blue baby” syndrome = 5 cases
- C-section delivery = 7 cases
- Induced labor = 2 cases
- Low birth weight = 3 cases
- Inhalation of fluid or meconium = 2 cases
- Vacuum delivery = 1 case

Interpretations of these analyses reveal that significantly more “complex” cases experienced complications during pregnancy than did “simple” cases. However, significantly more cases from both groups (58% of total) experienced complications during pregnancy than expected in the general public, which would be expected to be between 5% and 10% for the population as a whole (need reference for general, not-at risk, population).

Maternal use of prescription medications during pregnancy

Given the developing body of literature showing significant cognitive and behavioral deficits experienced by children and adolescents whose mothers drank substantial quantities of alcohol or used prescription or recreational drugs during pregnancy (Burgess, 1999; Streissguth, 1998), the research team was curious to discover the number of young people enrolled in the SOS FIRES Family Interview Study whose birth mothers had used any of the substances during pregnancy. Results revealed that:

- In 11/19 (58%) “Complex” cases, the mother reported having taken prescription (potentially teratogenic, meaning causes birth defects) medications during the pregnancy.
- In 12/31 (39%) “Simple” cases, the mother reported having taken prescription (potentially teratogenic) medications during the pregnancy.

In the general population, approximately 4% of the mothers delivering children at urban hospitals would be expected to report having used prescription medications during pregnancy. In contrast, significantly more mothers interviewed for this study (36% of total) had used prescription medications than the general public. Mothers of young people considered “complex” cases reported maternal use of prescription medications during pregnancy almost 1½ times more than did mothers of youth categorized as “simple” cases. Although the number of families is small, this is an area that definitely indicates a need for further inquiry.

Paternal use of prescription meds during pregnancy

Because of the high rate of prenatal, maternal prescription medication use, the research team was interested in comparative rates for biological fathers where that information was available.

- In 15/19 (26%) “Complex” cases, the father reported having taken prescription medications before or during the pregnancy.

- In 1/17 (6%) “Simple” cases, the father reported having taken prescription medications before or during the pregnancy

What the Research Director found was that there were significantly more missing values for biological fathers (24 cases) than for biological mothers (10 cases), so comparisons between the two groups are statistically meaningless. However, within the group of biological fathers who did report using medications, significantly more “complex” cases reported paternal use of prescription medications (26%) before or during pregnancy than did “simple” cases (6%). As with all other analyses, the total number of families was small and should not be generalized without great caution.

Maternal use of “recreational” drugs during pregnancy

Given the extensive use of prescription medications by mothers of both simple and complex firesetting behaviors, researchers were interested to know whether these trends held for recreational (i.e., illegal drugs) as well.

- In 10/22 (45%) “Complex” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- In 4/34 (12%) “Simple” cases, the mother reported having used recreational/illegal drugs during the pregnancy.
- Missing values = 4 cases.

Interestingly, values were missing for only four mothers on this variable. Either the biological parents were doing the actual interview, or the interviewer spoke with a grandparent or other relative familiar with the child’s prenatal history. Only in a few cases of adoption, particularly international adoption, the adoptive parents did not have access to the birth mother’s medical records.

Of the cases for which information was available, significantly more “complex” cases reported maternal use of recreational drugs during pregnancy (45%) than did “simple” cases (12%). However, significantly more cases from the “complex” and “simple” groups (26% of total) reported maternal use of recreational drugs during pregnancy than expected in the general public (4-5% in a Seattle study of suburban hospital deliveries, Streissguth, 1998).

Paternal use of “recreational” drugs before or during pregnancy

As with the prescription medications, the trend of paternal consumption of recreational drugs was also of interest to the research team.

- In 11/20 (55%) “Complex” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- In 8/32 (25%) “Simple” cases, the father reported having used recreational/illegal drugs before or during the pregnancy.
- Missing values = 8 cases.

Twice as many paternal cases (8 cases) had missing values for this variable as maternal cases (4 cases). However, for those families, that did report information, more than twice as many “complex” cases (55%) reported paternal use of recreational drugs before or during pregnancy than did “simple” cases (25%). This area would appear to merit further investigation.

Maternal use of alcohol during pregnancy

Since the most is known about the physical, cognitive, and behavioral sequelae of prenatal consumption of alcohol, the research team was most interested in the patterns of maternal drinking before birth.

- In 6/19 (32%) “Complex” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- In 2/30 (7%) “Simple” cases, the mother reported having had between 5 and 35 drinks/week during the pregnancy.
- Missing values = 11 cases.

Interpretation of these analyses shows 11 cases where information was missing from the mother’s prenatal history. For those cases where information was available, “complex” cases reported maternal use of alcohol during pregnancy 4½ times more often than did “simple” cases. This is definitely an area of interest for follow-up study because research shows that consumption of 5 to 35 drinks/week during pregnancy is reported in only approximately 4% of the general population after many years of study (Streissguth, 1998).

Paternal use of alcohol during pregnancy

In comparable questions for paternal consumption of alcohol before conception and birth, the surprising result was the upper limit of alcohol consumption. Unlike the commonly reported upper limit of 35 drinks per week (5 drinks per day -- 7 days per week). In this study the upper limit reported was 84 drinks per week (12 drinks per day -- 7 days per week).

- In 11/20 (55%) “Complex” cases, the father reported having had between 5 and 84 drinks/week during the pregnancy.
- In this same group, 5/20 (25%) reported drinking between 35 and 84 drinks/week before or during the pregnancy.
- In 9/29 (31%) “Simple” cases, the father reported having had between 5 and 84 drinks/week during the pregnancy.
- Missing values = 11.

The missing values for the fathers who drank during pregnancy were the same (11 cases) as the number of missing cases for the mothers who drank during pregnancy (11 cases). For the fathers who did give information about consumption during pregnancy,

significantly more “complex” cases reported paternal use of alcohol before and during pregnancy (55%) than did “simple” cases (31%).

Analyses of Child Diagnoses and Medication

The final area of analysis requested by the research team were characteristics of the children or adolescents who had set one or more fires and then participated in a youth firesetting intervention program in one of the three states in the study. The following sections describe some of the major findings related to the youth.

Frequency of major diagnoses

One characteristic of interest was to determine whether the children and adolescents interviewed for the SOS FIRES Family Interview Study had been diagnosed by a medical doctor (M.D.) or psychologist (Ph.D.) with any major medical or psychological conditions. The results showed that:

- For “Complex” cases:
 - 3/24 (12.5%) had a diagnosis of fetal alcohol syndrome (FAS).
 - 1/24 (4%) had fetal alcohol effects (FAE).
 - 17/24 (71%) had attention deficit disorder (ADD) or attention deficit disorder with hyperactivity (ADHD).
- For “Simple” cases, 6/31 (20%) had ADD or ADHD.
- Neurological and psychological diagnoses reported across cases included:
 - ADD/ADHD = 23 cases
 - FAS/FAE = 4
 - Oppositional defiant disorder (ODD) = 7
 - Post traumatic stress disorder (PTSD) = 4
 - Anoxia at birth = 6
 - Asthma = 6
 - Attachment disorders = 2
 - Learning disabilities/dyslexia = 4
 - Other diagnoses included fetal distress, depression, anxiety, physical abuse, sexual abuse, drug abuse, suicidal ideology, run-away behavior, self-mutilation, and bipolar disorder.

The prevalence of neurological diagnoses, at the time of intake into the youth firesetting intervention program appears to be one of the most robust finding thus far. At least 71% of the “complex” cases had one or more neurological diagnoses by the time of the study interview. Significantly more cases from both “simple” and “complex” groups (45% of total) had neurological diagnoses than expected for youth of comparable age.

Unsolicited reports of medication

Without asking a direct question, parents/guardians volunteered information regarding some children's medications for their current medical and/or psychological conditions. They reported youth being on at least 12 different medications including:

- Ritalin = 4 cases
- Concerta = 3
- Dexedrine = 3
- Adderall = 2
- Anticonvulsants/mood stabilizers = 3
- Asthma = 6
- 64% of "complex" cases were reportedly on medication.
- 35% of "simple" cases were reportedly on medication.

The unsolicited reports of children's and adolescent's medication schedules revealed that a disproportionately high percentage of youth were taking medication for medical and/or psychological conditions. This is significant in that the firesetting behavior was not the first, nor only, indication that many of the young people in the study suffered neurological or behavioral conditions with potentially serious consequences.

Behavior problems in school

The research team was curious to learn how early, and how recently, in the child's lives, parents or guardians had suspected their children might be experiencing behavior problems. When asked, parents and guardians revealed:

- By kindergarten, the following numbers of parents were receiving school reports of behavior problems.
 - "Complex" cases = 14/22 (64%)
 - "Simple" cases = 18/32 (56%)
- In the "past two years of school," the following numbers of parents were receiving school reports of behavior problems.
 - "Complex" cases = 23/24 (96%)
 - "Simple" cases = 30/35 (86%)

It seems clear from the two analyses above that children/youth engaged in firesetting behavior have a broader spectrum of "risk-taking" or problem behaviors than just fires. By kindergarten, over half the parents in each category (complex – 64%, simple – 56%) were told that their children were experiencing problems in school. In the past two years, across age groups nearly all of the parents/guardians of complex cases (96%) and 86% of the parents of simple cases were told their children were having behavior problems. Clearly this information must be pursued, and made available to interventionists in all fields of pediatric social services if it holds true for a larger sample of young people.

Analysis of Child/Youth Pain Tolerance

Children prenatally exposed to alcohol and other drugs often experience a high threshold for pain (Streissguth, 1998). Because the research team suspected prenatal use of alcohol and drugs by many biological parents (knowledge gained through clinical and intervention experience), the question was included to determine how many youth involved in firesetting behavior might feel a higher than average tolerance for pain. Both parents and children/adolescents were asked the question, and to be counted as positive, both had to answer that the young person showed a, “Higher tolerance for pain than most of his/her friends.” Results of this analysis showed:

- Reporting high pain tolerance by the parent and child/adolescent:
 - “Complex” cases = 17/24 (71%)
 - “Simple” cases = 29/35 (57%)

As with other data from the study, it is difficult to generalize beyond the small sample. However, it is very interesting to note that the report of high pain tolerance is greater than the reported maternal prenatal exposure to alcohol and greater than the paternal exposure to alcohol. For complex cases, the percent of youth with high pain tolerance was exactly the same as that diagnosed with ADD or ADHD (71%), but the high pain tolerance for simple cases (57%) was greater than the diagnosis of ADD or ADHD in this group (20%). This variable is open to interpretation, and seems to merit further study.

Child/Youth Reports of “Bullying”

Also related to their clinical and intervention experiences, the research team were anxious to discover whether firesetting involved youth were either the victims of bullies at some time in their lives, or acted as bullies toward others. Both parents/guardians and youth were asked these questions. By comparing the quantitative and qualitative data, it was found that the youth’s answers tended to be more credible because they could provide examples of the behaviors in question. Both sets of youth answers are reported below.

- The following number of children/youth reported “being the victim of bullying” and provided examples.
 - “Complex” cases = 21/23 (91%)
 - “Simple” cases = 22/35 (63%)
- The following number of children/youth reported “acting as a bully toward others” and provided examples.
 - “Complex” cases = 19/23 (83%)
 - “Simple” cases = 19/34 (56%)

In a related question that emerged from the qualitative analysis, some parents/guardians reported that the child or adolescent had been “Acting as a Bully Toward a Parent.” The results of that item were:

- The following numbers of children/youth were reported as “acting as a bully toward a parent or guardian.”
 - “Complex” cases = 4/24 (17%)
 - “Simple” cases = 2/35 (6%)

Related to the issue of bullying, extraordinarily high numbers of complex cases were both “victims of bullies” (91%) and had “acted as a bully toward others” (83%). Over half of the simple cases also experience both these situations. It would seem, even with the small number of cases in the current study, that more work is indicated to discover what sort of interaction “bullying” has with the high percent of behavior problems reported among firesetting involved youth and the firesetting behavior, itself.

CONCLUSIONS

The analyses completed to date for the SOS FIRES Family Interview Study lead to several important areas for further investigation as outlined above. In addition, the data collected from this study could be complemented to look at such questions as:

- How the family spends time together
- Other specific risk-taking behaviors
- Strategies children were taught for dealing with anger/conflict
- Time spent alone
- The influence of television, movies and video games

The number families involved in the present study (61) and the qualitative nature of the data collected during the in depth interviews had both advantages and disadvantages. It allowed the research team to begin to probe question never asked of the population of children with youth firesetting behaviors in the past such as information related to prenatal histories and neurological conditions. On the other hand, more cases must be added to the data set before these results can be generalized across the states involved in this study or before assumptions are made about the characteristics of the young people and their families.

FINAL RECOMMENDATIONS

The following is a list of recommendations stemming from the results of the interviews performed. These represent departures from current and recognized practice in the field and are therefore notable to industry professionals. While the sample size was limited to 61 families, most of the results listed here represent significant findings .

1. Screening outcomes must find standardization within the industry. Based on the findings of this research, two categories were deemed necessary. In order to avoid leading interventionists to conclusions about a client, it was determined the following two categories, and one disposition, would best describe the “Intervention Services” needed to serve most programs:

- Simple (Education)
 - Complex (Evaluation)
 - Unable to Provide Intervention
2. In demographic data collection, it was recommended that “Grade In School” would provide a better description (for education purposes) of the client’s level of maturity and intellect than “Age.”
 3. The “Number of Fires Set By the Child” (in the child’s estimation) seems to be a critical field with 5+ fires being a pivot point between those who move from Simple to Complex. This may need to be balanced with a time frame in which those fires fall. Further research should clarify this.
 4. The “Contact with Social Services” seems to be a critical field that is common to most Complex clients. It is recommended this be added to an Interview/Screening tool.
 5. “Complications During Delivery” was a field that seemed to carry some significance. It is recommended this be added to an Interview/Screening tool.
 6. “Current Neurological Diagnosis” seems to be a critical field that is common to most Complex clients. It is recommended this be added to an Interview/Screening tool.
 7. “Behavior Problems in the Past Two Years” seems to be a critical field that is common to most Complex clients. It is recommended this be added to an Interview/Screening tool.
 8. High levels of pain tolerance among clients may indicate a higher than average prevalence of Fetal Alcohol Syndrome.
 9. Consideration should be given to creating a special section of the Interview/Screening tool to contain “Key” questions that carry a higher than average weight when determining Complex vs. Simple categorization.
 10. Educational Intervention should teach a broader range of parenting safety skills, using fire as an entry point.
 11. Release forms should be revised to contain H.I.P.A. specific considerations.
 12. Family issues seem to contribute more to the behavior than Child-specific issues.
 13. Mental health involvement should begin sooner in the process to provide a more critical evaluation of the data fields, particularly those identified in these recommendations.

APPENDIX A

Forms and Protocols

SOS Fires Protocol for Handling Research Materials

1. Make appointment to visit the family at their home, or in a neutral place.
2. Plan to dress casually – the idea is to be a non-threatening researcher, not a fire prevention educator.
3. Access the case file from the firesetting intervention program in which the child participated.
4. Assemble materials: tape recorder (check batteries, 2-3 tapes), Adult Interview Protocol, Adult Consent Form, Youth Interview Protocol, Youth Assent Form, 2-3 pens.
5. Fill out pages 1 & 2 of the Adult Interview Protocol from the screening material.
6. Confirm the appointment, by phone, at least once the day before the meeting.
7. At the appointment, begin with the family together, if possible, to explain the consent forms – have the **adult guardian** sign the Adult Consent Form. Youth may sign the Youth Assent Form at the beginning or later when alone with you.
8. Ask to see adults or youth alone for first interview – for youth, have him/her sign the Youth Assent Form. Ask for any questions. Turn on tape & begin the interview. Use paper form for notes.
9. Ask to see adults alone for their interview. Ask for any questions. Turn on tape & begin interview. Use paper form for notes.
10. After adult interview, thank everyone for his or her help. Give stipend (gift certificate) to adult guardian. Reassure all that tapes and notes will go directly to Data Manager and will be confidential.
11. After leaving, be careful to **label tapes** with family name & date.
12. Assemble materials for Data Manager:
 - Copy of the intake/screening form
 - Both Adult Consent & Youth Assent Forms
 - Both Adult & Youth Interview Protocol
 - Both labeled tapes

Send to:

Donna Burgess
Burgess Consulting
8871 Rendon Drive
Anchorage, AK 99507
(907) 344-5467

13. Any copies you keep of research materials, you are responsible for following all National Institutes of Health Guidelines for Human Subjects Protection! Please take the Human Subjects on-line course, or we could lose this and any future grants. Thanks!

BENEFITS:

The results of this study will benefit families who work with the youth firesetting intervention program in the future. The only direct benefit to you, from participating in this study, will be a small gift certificate to thank you for your help.

RISKS:

It is possible that the discussion of feelings may make you feel sad or uncomfortable. However, there are not any other known risks to you.

CONTACT PEOPLE:

If you have any questions about this research, or about your rights as a person who completes an interview, please contact Don Porth, Director, SOS Fires, at (503) 805-8482, or Dr. Donna Burgess, Research Director, at (907) 344-5467.

SIGNATURE:

Your signature on this consent form indicates that you fully understand the above study, what is being asked of you in this study, and that you are signing this by your choice. If you have any questions about this study or need to have this consent form translated, please feel free to ask me at any time.

Signature_____ Date_____

CONSENT FOR YOUTH PARTICIPATION:

We would also like the opportunity to speak with your son/daughter who has been involved in a youth firesetting intervention program. They will have all their rights explained (during which you may be present), and they will have a chance to sign an assent form for youth under age 17. We would also like your permission to send a copy of your original intake form and notes to our Research Director. She can coordinate those results with the answers from these interviews. Your signature below indicates that you give your permission for me to ask your son/daughter if he/she is willing to participate in the youth interview and use your intake materials in a confidential way.

Signature_____ Date_____

ADULT INTERVIEW PROTOCOL

1. Interviewer: _____ Date: _____

2. Interview Start Time: _____ AM/PM Interview End Time: _____ AM/PM

3. City/Town of Interview: _____ State: _____

4. City/Town of Fire Jurisdiction: _____ State: _____

Screening Information: (Fill in this section before interview)

5. Name of Child/Adolescent Concerned: _____

6. Date of Birth: _____ Age at time of Referral: _____ yrs _____ mos
First, Middle Initial, Last

7. Date of First Referral: _____ Source of Referral: _____

8. Date of Initial Screening: _____ Name of Screener: _____

9. Name of Person(s) Interviewed at Screening & Relationship to Child/Adolescent:

Name: _____ *Relationship:* _____

Name: _____ *Relationship:* _____

10. Results of Screening:

Level of Concern Assigned: _____

Referrals Made at Screening: _____

11. Follow-up Education or Other Events after Screening:

Date: _____ *Event:* _____

Date: _____ *Event:* _____

Date: _____ *Event:* _____

12. Disposition of Case after Screening (a) Record family follow-through b) Note any additional fire activity after screening):

Current Family Information:

13. Current age of the Child/Adolescent Concerned: ___ yrs ___ mos Grade: _____

14. What was the legal status of the child/adolescent at the time of referral?
(Check all that apply)

- | | |
|---|--|
| Biological child w/ both parents/married _____ | Biological child w/ both parents/separated _____ |
| Biological child w/ both parents/divorced _____ | Biological child w/ one parent/single _____ |
| Biological child w/ one parent/remarried _____ | Child living w/ relatives in foster care _____ |
| Child living in State foster care _____ | Child living w/ relatives in adoptive home _____ |
| Child living in other adoptive home _____ | Child living in residential placement _____ |
| Child living in a group home _____ | Youth in State custody/incarceration _____ |

15. What is the legal status of the child/adolescent at the time of this interview?
(Check all that apply)

- | | |
|---|--|
| Biological child w/ both parents/married _____ | Biological child w/ both parents/separated _____ |
| Biological child w/ both parents/divorced _____ | Biological child w/ one parent/single _____ |
| Biological child w/ one parent/remarried _____ | Child living w/ relatives in foster care _____ |
| Child living in State foster care _____ | Child living w/ relatives in adoptive home _____ |
| Child living in other adoptive home _____ | Child living in residential placement _____ |
| Child living in a group home _____ | Youth in State custody/incarceration _____ |

16. Please list the ages and status (related to the parent of the child screened) of the child/adolescent's siblings at the time of this interview.

- | | | | |
|-----------------------------|-------------------------------|----------------|---------------|
| 1. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |
| 2. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |
| 3. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |
| 4. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |
| 5. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |
| 6. Initials _____ Age _____ | Biological _____ Foster _____ | Relative _____ | Adopted _____ |

Continue siblings on back of page if necessary.

17. Please list the names and ages of the parent(s) and/or legal guardians with whom the child/adolescent currently lives.

Primary Residence:

Name or Initials _____ Age _____ Relationship to Child: _____

Current Occupation _____ Highest Grade or Degree Completed _____

Name or Initials _____ Age _____ Relationship to Child: _____

Current Occupation _____ Highest Grade or Degree Completed _____

Second Residence:

Name or Initials _____ Age _____ Relationship to Child: _____

Current Occupation _____ Highest Grade or Degree Completed _____

Name or Initials _____ Age _____ Relationship to Child: _____

Current Occupation _____ Highest Grade or Degree Completed _____

Medical History:

18. What can you tell me about the pregnancy with _____ (Child's name)?
Was it normal or were there any complications?

19. What can you tell me about _____'s (Child's name's) birth? Was it full term?
Were there any problems?

20. Before _____ (Child's name) was born, did his/her biological father or mother
take any prescription medications?

Father _____ Meds if known _____

Mother _____ Meds if known _____

21. Before ____ (Child's name) was born, how much caffeine or nicotine did his/her biological father or mother typically use each day?

Father _____ Caffeine per day _____ Nicotine per day _____

Mother _____ Caffeine per day _____ Nicotine per day _____

22. Before ____ (Child's name) was born, how much alcohol did his/her biological father or mother typically use each day or week?

Father _____ Alcohol per day _____ or Alcohol per week _____

Mother _____ Alcohol per day _____ or Alcohol per week _____

23. Before ____ (Child's name) was born, what other recreational drugs did his/her biological father or mother use?

Father _____ Drug(s) _____ How often? _____

Mother _____ Drug(s) _____ How often? _____

24. After ____ (Child's name) was born, did he/she seem to develop normally? Do you remember any problems with his/her eating, sleeping, or crying?

25. Did ____ (Child's name) have any medical problems before he/she started school? What was done if there were problems?

26. When ____ was a toddler, how successful were your first experiences of disciplining him/her? Do you feel that he/she had any behavior challenges as a young child?

School History

27. Did _____ attend a preschool program? Yes ____ No ____

What kind of preschool program did ____ attend (e.g., Montessori, Headstart, family daycare)?

How old was ____ when he/she started preschool? ____ yrs.

How many years did he/she attend? ____ yrs.

28. Did _____ attend kindergarten? Yes ____ No ____

29. How did he/she do in kindergarten? Did he/she have any behavior challenges reported to you by teachers or others?

30. How about the grades since then? How is ____ doing in school academically?

31. Has ____ had any behavior challenges reported to you by teachers or others in the last two years?

32. Since _____ has been in school, how have you, or another parent, taught him/her to deal with conflict? Does that strategy seem to work for him/her?

33. How have you, or another parent, taught _____ to deal with anger or frustration? Do you think that works for him/her at home? At school?

34. How would you describe ____'s friends?

35. About how much time each week does ____ spend with his/her friends?

36. What does _____ do that you would consider taking unusual risk for his/her age? Does ____ do this more when he/she is with friends?

37. Have you ever known _____ to be the victim of one or more bullies? Could you give an example?

38. Have you ever known _____ to act like a bully? Could you give an example?

39. How much time would you estimate he/she spends doing things with you and your family? _____ What sort of things do you do with _____ when you're together?

40. Do you think _____ has a normal tolerance for pain? For example, if he/she gets burned can he/she handle more pain or less pain than his/her friends? Can you give an example?

41. How much time would you estimate _____ spends doing things alone?
_____ What sort of things does he/she do when he/she's alone?

42. Do you think _____ the amount of time spends alone is typical for a child/adolescent his/her age? Yes _____ No _____

43. How would you describe _____'s usual mood? Is he/she happy, sad, talkative, quiet, etc.?

44. Is _____ ever depressed? Yes _____ No _____ About how long do those periods seem to last? _____ Days _____ Weeks

45. Has _____ ever talked about committing suicide – him/herself or by a friend? How did you, or another parent, respond?

46. What do you think are _____'s greatest strengths (academic, athletic, talents, etc)?

47. Is there anything else you'd like to tell me about _____? Is there anything important we haven't talked about?

YOUTH INTERVIEW PROTOCOL

- 1. Interviewer: _____ Date: _____
- 2. Interview Start Time: _____ AM/PM Interview End Time: _____ AM/PM
- 3. City/Town of Interview: _____ State: _____
- 4. City/Town of Fire Jurisdiction: _____ State: _____

Screening Information: (Fill in this section before interview)

5. Name of Child/Adolescent Concerned: _____
First, Middle Initial, Last

6. Date of Birth: _____ Age at time of Referral: _____ yrs _____ mos

Early School Years:

7. Did you go to kindergarten? Yes _____ No _____

8 What do you remember about kindergarten? How did you do in school that year?

9. How about the years since then? How are your grades in school?

10. Have you had any problems with behavior in the last two years?

11. Has your parent, or another adult, taught you how to deal with conflict? Does that strategy seem to work for you?

12. Has your parent, or another adult, taught you how to deal with anger or frustration? Does that strategy seem to work for you?

13. How would you describe your friends?

14. About how much time each week do you spend with your friends?

15. What kinds of things do you do that you would consider taking a risk for your age? Do you do this more when you're with friends?

16. Have you ever been the victim of one or more bullies? Please give an example?

17. Have you ever acted like a bully? Could you give an example?

18. How much time do you spend doing things with your family? _____
What sort of things do you do with _____ when you're together?

19. Do you think you feel pain in a normal way? For example, if you get burned can you handle more pain or less pain than your friends? Can you give an example?

20. How much time would you do you spend doing things alone? _____ What sort of things do you do when you're alone?

21. What are your favorite tv shows or movies to watch? Are you allowed to watch this show(s) all the time?

22. What are your favorite video games to play? Do you play at home? Are you allowed to play any time?

23. How would you describe your usual mood? Are you happy, sad, talkative, quiet, etc.?

24. Are you ever depressed? Yes _____ No _____ About how long do those periods seem to last ? _____ Days _____ Weeks

25. Have you ever thought about committing suicide? Have you talked about it with a friend or a family member?

26. What do you think are your greatest strengths (academic, athletic, talents, etc)?

27. Is there anything else you'd like to tell me about? Is there anything important we haven't talked about?

Report End