Child Maltreatment Recurrence
Supplement to the Briefing Paper on Child Maltreatment Recurrence

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Purpose and Organization of the Document

This document is meant to provide a more detailed consideration of and supplement the issues discussed in the Briefing Paper on Child Maltreatment Recurrence. It is important to note that although historically, one key purpose for the provision of child protective services has been the prevention of repeat maltreatment, research and knowledge on the matter has only begun to develop as a body in and of itself over the past few decades. This review of the research suggests that there are a variety of ways to approach analyzing the issue of recurrence. In order to better understand the issue of recurrence and the implications of findings about the issue, this paper presents:

- **Part A**: An overview of key research methods and findings regarding child maltreatment recurrence. This section provides a more detailed research review and supplements the information found in the briefing paper. It also references a set of tables found in the appendix that details the studies and their findings in relation to the factors discussed in the review.

- **Part B**: Understanding recurrence at the State and local level. This section is intended to act as a guide to help states and localities begin to formulate questions about recurrence that serve as a basis for research and evaluation.

- **Part C**: Methods for recurrence research. In this section the types of consideration for conducting research and evaluation in this area are summarized. The discussion is non-technical, but may provide a bit more background for states and localities that are attempting to develop research and evaluation activities.

- **Part D**: Information about the background, computation and development of the standard of the Federal recurrence indicator. Like the literature review, this section provides more detail as to what the federal outcome measure is and how it was developed.

- **Part E**: Suggestions for additional resources on recurrence that might be helpful to guide further consideration and analysis of the issue are presented here. This section provides a listing of resources and organizations that can offer technical assistance, training and research services to help states and localities that are engaged in addressing recurrence.

Part A:
Overview of Recurrence Research Methods and Findings

Research Methods

A review of literature on the recurrence of maltreatment suggests that there are a number of methodological considerations for researchers looking at the issue of recurrence. These include the purpose of the study, the population studied and unit of analysis, the definition of recurrence, data sources and analytic approaches. Studies of recurrence vary greatly in the methods they use and the issues and factors they examine. The choices made about how to structure and conduct an analysis of recurrence will be driven by many factors, including which issues are of primary concern, budget, time, skills of analysts, and other factors. Such differences exist with regards to the research reviewed for this monograph. Still, the sections below should be instructive and help you think about how to approach conducting a study of recurrence for a Child Protective Service (CPS) agency in a State, region, or county.

Purpose of Study

Over the years, recurrence has been examined for different purposes. Recurrence has been used as an indicator of the effectiveness of a particular intervention under study (e.g., Littell, 1997; Lutzker and Rice, 1987) or as an indicator of the predictive validity of safety and risk assessment protocols (e.g., Baird, 1988; Johnson and L'Esperance, 1984). In recent years, more studies focusing specifically on recurrence have been conducted (e.g., DePanfilis and Zuravin 1999a; Fluke, Yuan, Edwards, 1999; Fryer and Miyoshi 1994). The purpose of the study affects the population studied, data sources, and analytic method used to study the issue.

Population Studied and Unit of Analysis

The concept of recurrence has been examined for different populations. Recurrence studies have looked at: all families reported to CPS, only children of a particular age, only children who have experienced a particular type of maltreatment, families receiving specific services or interventions, or only families with no children placed in out of home care and so forth. Some studies have distinguished between cases in which the index event (study qualifying incident) was the first referral or first substantiated maltreatment for the child or family (Way, et al., 2001) while others have not (Marshall and English, 1999; Fluke, Yuan, Edwards, 1999). Within these study populations, sample cases may be randomly or purposefully selected or the entire population of cases for a period of time may be studied.

The units of analysis used in studies differ as well. For example, studies have also looked at the recurrence of maltreatment for either particular children (Fluke, Yuan, Edwards, 1999; Inkeles and Halfon, 1997;) or families (Cohn, 1979; Johnson, 1994; Murphy et al., 1992) while others have looked at perpetrator recidivism (Hamilton and Browne, 1999; Way et al., 2001).

Data Sources

Data sources used to assess recurrence vary across studies. Most commonly, studies have used CPS intake and investigation administrative data (e.g., Fluke et al., 1999; Way et al., 2001; Palusci, 2002), but a number of studies have either used case record reviews, surveys, interviews and/or focus groups to gather data and/or supplement analysis of administrative data (e.g., DePanfilis and Zuravin, 2002; Fluke et al., 2001a; Herrenkohl et al., 1978).

The data and data collection methods selected are often driven by the goal of the study, considerations of availability of data and resources available to the researchers. Some approaches, such as case record reviews, may require further efforts to assure inter-rater reliability and validity of the findings. Further, the use of convenience samples, as opposed to randomly selected samples or entire populations, restricts the generalizability of studies using such data. Overall, however, studies using multiple sources of information are generally thought to be more robust and, because recurrence is a relatively rare event, using population data is considered optimal to using sample data (Fluke et al., 2001b).

Definition of Recurrence

Definitions of recurrence vary significantly across studies. Most commonly, recurrence has been defined as a substantiated report following a prior substantiation that involves the same child victim or family (DePanfilis and Zuravin, 1998; Fluke et al., 1999; US DHHS 2002a). However, some researchers have raised concerns about using substantiated reports as the only measure of recurrence. Because of concerns about the impact of staff workload, inadequate resources, inconsistent definitions and application of screening or substantiation criteria on substantiation decisions and in light of evidence that suggests that unsubstantiation may not necessarily mean no maltreatment occurred, some studies have also examined repeat reports, sometimes called re-referrals (e.g., English, et al., 1999; Baird, 1988). Such studies analyze re-reported cases regardless of whether the reports were substantiated or unsubstantiated. Further, some studies have used events other than CPS referrals or substantiations as measures of recurrence. Examples include repeat court involvement (Murphy et al., 1992), repeat hospitalization (Levy et al., 1995), or repeat referrals to police child protection units (Hamilton and Browne, 1999). Some studies have examined both re-referrals and recurrence (English et al., 1999; Fluke at al., 2000; Way et al., 2001). Finally, to date, studies focusing on perpetrators, as opposed to children or families, have generally used any new report or new substantiation against a perpetrator of child maltreatment as a measure of recurrence (Way et al., 2001). While perpetrator studies often look at perpetrator recidivism, the traditional definition of recidivism (repeat conviction) sets a very high standard; therefore, some studies have defined recidivism as any new report or new substantiation against a perpetrator of child maltreatment (Way et al., 2001). Like those who use re-referrals, rather than substantiations to measure recurrence, the premise to this approach is that there are intervening factors that affect conviction and the fact that someone has reported the alleged maltreatment is in and of itself an indicator that maltreatment is a real concern.

Recurrence definitions also vary on whether they focus on specific types of maltreatment (e.g., Finkelhor and Baron, 1986; Johnson and L'Esperance, 1984; Palusci, 2002); all types of maltreatment (e.g., Berkeley Planning Associates, 1983; DePanfilis and Zuravin, 1998; Fluke et

al., 1999; US DHHS 2002a), and/or more than one type of maltreatment associated with a single report (e.g., Herrenkohl et al., 1978; US DHHS 2002a). Further, some studies restrict recurrence analysis to focus only on incidents in which the same type of maltreatment has been perpetrated (e.g., Palusci, 2002), while others consider any future type of maltreatment to be recurrence (Fluke et al., 1999; Hamilton and Browne, 1999; US DHHS 2002a; Way et al., 2001).

The calculation of what is counted as recurrence may also involve efforts to account for multiple reports regarding the same incident. Some studies count repeat reports within a particular period of time as one report. For example, the National Child Abuse and Neglect Data System (NCANDS) data set "rolls up" reports that are received within 24 hours of a prior report. Therefore, only one report is counted in such instances (US DHHS, 2001a; US DHHS 2002a). In comparison, Way et al.'s (2001) study rolled up subsequent reports within a seven-day time span after the first report during the study period. These calculations recognize that one incident of maltreatment may be reported by different individuals or by the same individual repeatedly, yet these multiple reports may only represent one incident of maltreatment. In short, across studies different rules have been applied regarding report roll-ups. In part, the use of different rules may be due to knowledge of the investigator about differences in reporting and disposition decision-making policies particular to the site under study.

Definitions of recurrence also vary according to the length of time over which recurrence has been measured. The length of time studied ranges between months to over a decade. Until recently, recurrence was generally looked at over a matter of 2-5 years (DePanfilis and Zuravin, 1998). In addition, studies have used alternate definitions of what time periods are considered relative to the status or life of the case. Some focus on recurrence rates during treatment (e.g., DePanfilis and Zuravin, 2002); others examine recurrence rates post-treatment or case closure (e.g., Lutzker and Rice, 1987; Zuravin and DePanfilis, 1996), while others have measured recurrence without regard to the current treatment status of the child or family (e.g., Fluke et al., 1999; US DHHS, 2002a).

Yet another distinguishing feature of these studies is whether they look at recurrence retrospectively or prospectively. As DePanfilis and Zuravin (1998) note that, for either approach, it is important to control for the length of follow up time for individual participants in a study sample, otherwise the study's findings may be confounded by inconsistent measures of the lengths of time in the sample and, therefore, incomparable results.

Analytic Approaches

Once the data have been collected or made available, a number of analytic procedures have been used for analysis. These include bivariate analysis and multivariate techniques. Among the most common bivariate techniques are correlation and life table survival analysis. Among the multivariate techniques discriminant analysis, logistic regression and Cox Proportional Hazards modeling have been used. The common element between the analytic approaches is the use of a dichotomous dependent variable for recurrence, i.e., use of one variable that reflects the presence versus the absence of recurrence. However, studies involving survival analytic techniques have become more common and examine time to recurrence as an outcome. As will be described

further below, the choice of which dependent variable is of interest determines the approach that must be used for analysis.

Earlier studies of recurrence employed descriptive, bivariate and/or discriminant analysis, and logistic regression. Descriptive statistics are quite helpful to identify isolated characteristics of populations (e.g. percent of all cases that recur), but they do not allow one to understand the interrelationship, or correlations, between factors or characteristics and the outcome of recurrence. To identify individual factors correlated with the presence or absence of recurrence, one could conduct bivariate analyses. This approach would allow one to identify relationships between individual characteristics (such as a child's age) and the likelihood of recurrence.

Because bivariate analyses look at the relationships between only two variables, an even better approach would be to use multivariate analysis techniques, such as logistic regression, because these techniques allow one to explore relationships between multiple factors and the dependent variable, e.g. the relationship between a child's age and type of maltreatment and recurrence. Further, multivariate analyses allow one to control for the effect of variables, such as family income. In this example, controlling for income would allow one to determine which factors are more directly associated with recurrence, regardless of a family's income. In short, multivariate approaches allow researchers to more precisely isolate and identify the factors affecting recurrence as they take into account the interaction between factors that may collectively contribute to higher or lower rates of recurrence. Again, the common element is that each of the above approaches may be used to determine factors associated with the presence or absence of recurrence.

An approach that is becoming increasingly prevalent in recurrence studies is survival, or event history, analysis. Survival analysis is used for predicting events that can happen at various points in time; it is a procedure for explaining whether and when in time an event happens. Survival analysis techniques often use a modified form of logistic regression analysis (Cox Proportional Hazards) but the advantage of survival analysis over regular logistic regression analysis is that it aids in explaining events that happen at different points in time. Logistic regression does not reveal when an event happened, only that it did. For example, if you are trying to explain recurrence of child maltreatment over a five-year period, if you use logistic regression, you can only distinguish between recurrence and no recurrence over the entire time period but one cannot distinguish between recurrence after one year versus recurrence after four years. Survival analysis makes this distinction (Cross, 2001). Furthermore, survival analysis corrects for and allows the analyst to include individuals with unequal observation periods. Numerous studies have used survival analysis to determine the likelihood and timing of recurrence (e.g. Fluke et al., 1999; DePanfilis and Zuravin, 2001; Fryer and Miyoshi, 1994). Some studies (e.g. Marshall and English, 1999; Way, et al, 2001) have also used survival analysis to assess the likelihood and timing of re-reporting after an initial report of maltreatment or to assess differences in re-reporting timing and rates between cases in which the original report was substantiated or not.

The strength of using survival analysis as an approach is that it identifies patterns of recurrence over time and can isolate factors that may contribute to different patterns of recurrent maltreatment. This allows one to identify different constellations of factors that affect varied rates of recurrence. To look at the association between more than two factors and recurrence,

most of the studies in this group supplemented survival analyses (which look only at relationships between two variables) by using Cox Proportional Hazard models (e.g. US DHHS, 2001a; US DHHS 2002a; Way et al., 2001). The power of this approach is that it applies multivariate analysis to survival analysis and can therefore identify combinations of and interrelationship between factors that are associated with recurrence of maltreatment and can control for factors such as maltreatment type, family income, gender, ethnicity and so forth.

While traditional bivariate and multivariate analyses would be fruitful for identifying correlates of recurrence and explanations of variances in recurrence rates between different sub-populations, they lack the sophistication of survival analysis in that they do not allow a distinction between factors that may affect recurrence differently at different points in time during the life of a case, a child, or a perpetrator. Survival, or event history, analyses can provide insight for efforts to conduct long range planning as the results suggest the likelihood of a family re-entering the CPS system as well as the timing of their re-entry (DePanfilis and Zuravin, 1998). However, survival analysis often requires large sample sizes (Fluke, Yuan, Edwards, 1999, citing Fraser, Jenson, Kiefer and Popuang, 1994). Therefore, the best approach would be a combination of the above methods.

In addition to the methods described above neural network techniques were used by Marshall and English (1999) to compare the performance of these procedures to more traditional statistical methods. A neural network is a mathematical model based on the biological operation of neural cells, and the idea is that models using this approach operate in much the same way that a brain processes information and recognizes patterns in information. Typically data are divided into a training sample that is used by the model to set up patterns of information flow that are analogous to neural activity. The trained model is then exposed to a validation sample of data to evaluate its performance in the presences of new information. Neural network approaches were found to offer a slight improvement in predictive accuracy compared to other techniques.

Finally, multi-level logistic regression analyses have been used to demonstrate the contribution of workers and supervisors to the likelihood of recurrence in the presence of case factors such as prior reports (Fluke, et. al. 2001a). Multi-level or hierarchal models are used to describe the contribution of attributes among all cases that are common to sub-groups of cases (e.g., children on the same caseload, or who are being served by the same agencies). These models produce unbiased estimates of the contribution of these group level variables. Multi-level analyses are potentially valuable methods for getting at more complex issues related to additional factors that affect the likelihood of recurrence.

In sum, the analytic approach chosen should be guided by the goals of the research and the kind of information needed. To further inform this decision and to identify the kind of information, it might be useful to explore a summary of key findings about factors associated with recurrence such as the one presented below.

Factors Associated with Recurrence

While the methodological differences described previously somewhat limit the ability to generalize across the study findings, there do appear to be a number of findings that are common, or replicated, across the studies. Still, select findings from some studies that have yet to be replicated are presented as they may be promising. There are also a number of findings that suggest an interaction between different variables and the likelihood or timing of recurrence. This means that the combination of particular characteristics, services or other factors appear to work together to explain different rates of recurrence. Although few findings regarding interactions have been replicated, where relevant, they are noted below. It is also important to note that the findings presented below are inherently limited to those families known to child protective service agencies or other child welfare system entities, such as hospitals or law enforcement agencies.

Key Findings

What follows is a brief summary and examples of key findings and select references for studies that looked at each factor. For further reference about which studies considered the factors below, please see Tables (A-E) in the Appendix.

General Recurrence Findings

- **Rate of Recurrence**

  An analysis of multiple studies of recurrence has shown *wide variability on the rate of recurrence, from as few as 1 to 2 percent of cases identified as low risk to over 66 percent of cases followed for more than five years* (see DePanfilis and Zuravin, 1998). However, one cannot make conclusion about an overall rate of recurrence. The studies cannot be compared because they did not use the same definitions of recurrence, study the same types of cases, or follow cases for the same length of time, and may be dissimilar on other factors. As stated in their review of recurrence studies, and as might be expected, DePanfilis and Zuravin (1998) noted that certain trends such as broader definitions of recurrence yield higher rates of recurrence, as do studies that follow cases over longer periods of time, or studies that look at re-reporting as a measure of recurrence.

- **Number of Recurrences**

  Although rates vary across studies, in part due to methodological differences, research has consistently found that *the majority of cases that recur, do so only once* (e.g., DePanfilis and Zuravin, 1999a, Fluke et al., 1999; Hamilton and Browne, 1999; Herrenkohl et al., 1978). For example, DePanfilis and Zuravin's (1999a) study of 1,167 families in Baltimore found that over the course of five years, 52.1 percent of the families experienced one recurrence, 24.9 percent experienced two recurrences, 11.9 percent experienced three recurrences, and

11.2 percent experienced four or more recurrences. Moreover, *most substantiated recurrence occurs within the first year*. For example, Fryer and Miyoshi (1994), analyzing data from one state and Fluke et al., (1999), analyzing data from ten states found similar recurrence rates determined that over the course of a year, 69.2 percent and 75.0 percent respectively of cases followed survived without recurrence.

Studies have also found that *cases with multiple recurrent maltreatment incidents tend to recur more quickly than those with only one recurrent maltreatment incident* (e.g., DePanfilis and Zuravin, 1999a; Fluke et al., 1999; Marshall and English, 1999; US DHHS 2002a). For example, Fluke, et al., (1999) found that the likelihood of subsequent maltreatment increased after each subsequent maltreatment event and that cases with three recurrent events recurred at a significantly faster rate than cases with one or two recurrent maltreatment events. Further, DePanfilis and Zuravin (1999a) found that families with only one recurrence had a mean time to recurrence of 587 days, while families with more than one recurrence had a mean time to first recurrence of 422 days. Similarly, Hamilton and Browne (1999) noted that mean time to subsequent recurrent events for families with more than one recurrence decreased with each additional recurrent event.

- **Timing of Recurrence**

Many studies employing survival analysis have noted that *the risk of recurrence is greatest soon after the initiating incident, that the risk of recurrence diminishes over time as the subject is followed and that most substantiated recurrence occurs within the first year*. (e.g., Fluke, et al., 1999; Fryer and Miyoshi, 1994; Johnson, 1994; Zuravin and DePanfilis, 1996). For instance, Fryer and Miyoshi (1994) studied 24,507 substantiated cases of child maltreatment in Colorado for four years and found that over that period, 9.34% of cases recurred. Of these, almost one-fourth (23.6%) of the cases recurred did so within 30 days from the first substantiation during the study period and 69.2% of them did so within the first 360 days after the incident. Zuravin and DePanfilis (1996) found the probability of recurrence was highest in the first 30 days following a report and steadily declined over the course of a year. Their study found that 50% of the families that recurred over a five-year period had done so after 270 days. Similarly, Fluke et al., (1999) found that the relative hazard of recurrence declined as the observation period increased.

- **Child vs. Family Recurrence**

Research that involved a review of 45 recurrence studies noted that *studies that focus on recurrence of maltreatment specific to a particular child generally identify lower rates of recurrence than studies that focus on recurrence rates for families* (see DePanfilis and Zuravin, 1998). As cited by DePanfilis and Zuravin (1998), Marks and MacDonald (1989) found that 14 percent of children recurred,

while Berkeley Planning Associates (1983) found that 47 percent of families recurred. Similarly, Creighton and Noyes (1989) found that when families are considered, between 11%-60% of siblings are maltreated in the same way as the registered child.

- **Re-referrals vs. Recurrence**

  Re-referrals may be driven by many of the same factors identified as associated with recurrence (e.g., Marshall and English, 1999). Marshall and English (1999) cited multiple studies in which it was noted that there were no substantial differences between case characteristics or other explanatory variables between re-referred and recurrent cases.

- **Recurrence and Population**

  Although this finding has yet to be replicated, *recurrence also appears to be correlated with the rate of child victims per 1,000 children in the population* (US DHHS, 2002b).

Child Demographics and Recurrence

Most recurrence research examines child characteristics to determine whether particular characteristics of children are associated with different rates of recurrence. It appears there are a number of common findings across studies.

- **Prior History of Maltreatment**

  A well-established factor affecting recurrence is that *children with a history of reported child maltreatment are more likely to recur than those children with no prior CPS involvement* (e.g., Hamilton and Browne, 1999; Littell, 1997; US DHHS 2002a). Multi-state recurrence analysis conducted using NCANDS data revealed that children with a prior history of maltreatment were three times more likely to recur than children with no prior history of maltreatment (US DHHS, 2002a). Likewise, Hamilton and Browne (1999) found that over a 27-month period, 1 in 2.5 children with a prior history of reported child maltreatment experienced recurrence, compared with 1 in 5.5 children with no prior history experiencing recurrence. These differences were even more exaggerated when shorter lengths of time were considered.

- **Age of Child**

  A number of studies have consistently identified that *younger children are more likely to experience recurrent maltreatment* when compared to older children (e.g., Ferleger et al, 1988; Fluke et al., 1999; Fryer and Miyoshi, 1994; Hamilton and Browne, 1999; Marshall and English, 1999). Marshall and English (1999) found that families with younger children experience more re-referrals and that

children aged 0-5 were most likely to be re-referred. Fluke et al., (1999) found that children aged 12-17 were less likely to experience recurrence. In addition, a few studies have noted interactions between age and other factors. Hamilton and Browne (1999) found that the average age of children repeatedly maltreated by the same perpetrator was just less than eight years compared to 4.5 years for children revictimized by different family members. Fluke et al. (2000) found that larger families with younger children were also more likely to recur.

- **Gender of Child**

  Results of analyses comparing rates of recurrence between different genders have generally found *no difference between rates of recurrence for boys and girls* (Fluke et al., 1999; Hamilton and Browne, 1999; US DHHS 2002a). However, one study found an interaction between age and gender and recurrence. Fryer and Miyoshi (1994) found that younger girls, age 0-6 were more likely to experience recurrent maltreatment (Fryer and Miyoshi, 1994).

- **Race of Child**

  The *findings comparing recurrence across racial and ethnic groups are more mixed*. While some studies have found no discernable difference in recurrence rates across different racial and ethnic groups (e.g., Levy et al., 1995; Inkelas and Halfon, 1997), some studies have found that generally, children of color are less likely to experience recurrent maltreatment when compared to White, non-Hispanic children (Fluke et al., 1999; US DHHS 2002a). For example, a multi-state analysis of recurrence concluded that generally, the Asian/Pacific Islander category had the lowest rate of recurrence and the longest time to recurrence, but that the pattern of differences for White and African American children were not consistent across the nine states that provided data on race of child victims (Fluke et al., 1999). In a study of counties in eight states, Johnson (2000) found that counties with relatively more White, non-Hispanic populations had higher rates of recurrence. However, studies by Levy, et al. (1995) and Inkelas and Halfon (1997) determined that Whites and African Americans have similar rates of recurrence.

- **Child Disability**

  Fewer studies have examined the relationship between a child's disability and re-referrals or recurrent maltreatment, but some association has been found to suggest that *children with disabilities may be more likely to be re-referred or to experience recurrent maltreatment* (e.g., Marshall and English, 1999; Hamilton and Browne, 1999; Palusci, 2002). For example, Palusci (2002) found that children with learning disabilities were more likely to recur, and Marshall and English (1999) found that children with developmental delays were more likely to recur.

- **Type(s) of Maltreatment**

Recurrence rates do appear to be related to the type of maltreatment that a child experiences. The majority of studies that assessed this issue found that *cases involving neglect are more likely to recur than cases involving other maltreatment types* (e.g., Baird, 1988;DePanfilis and Zuravin, 1999a; Fluke, et al., 1999; Marshall and English, 1999; US DHHS 2002a). Analysis of recurrence data for multiple states found that children who experienced neglect were 27 percent more likely to experience recurrence than children who experienced physical abuse (US DHHS, 2002). DePanfilis and Zuravin (1999a) also found that neglect cases recur more quickly than abuse cases. Further, Marshall and English (1999) found that neglect cases were 52 percent more likely and physical abuse referrals were 32 percent more likely to be re-referred than sexual abuse cases.

Studies that have examined cases involving multiple maltreatment types (e.g., neglect and physical abuse or physical abuse and sexual abuse) have revealed that *cases involving multiple maltreatment types are more likely to recur than cases involving one type of maltreatment* (e.g., Herrenkohl et al., 1978; US DHHS, 2002a). In a seminal study of recurrence, Herrenkohl and colleagues (1978) found that the probability of recurrence was higher for families in which more than one type of abuse was determined. Similarly, an analysis of ten states' data found that when compared to children who experienced only physical abuse, children who experienced multiple types of maltreatment were 15% more likely to experience recurrent maltreatment (US DHHS 2002a).

Studies have also found that *subsequent allegations in cases that recur often involve allegations of different types of maltreatment* (English et al., 1998l Way et al., 2001) English et al., (1998) found that families that initially are referred for neglect often re-refer for other types of abuse. Way et al. (2001) found that recidivism across maltreatment types was most likely when the index event was sexual or physical abuse and that neglect cases were most likely to recur with subsequent neglect allegations.

- **Severity of Maltreatment**

In addition, studies assessing the severity of maltreatment have consistently found that *more severe maltreatment is associated with higher rates of recurrence* (e.g., Berkeley Planning Associates, 1983; Cohn, 1979; Ferleger et al., 1988; Marks and McDonald, 1989).

Family Characteristics and Recurrence

Studies of recurrence have also analyzed family characteristics associated with different rates of recurrence. Although studies have looked at a myriad of different factors, there do appear to be some patterns in their findings.

- **Family Demographics**

  Studies reveal that *families with more children are likely to recur* (e.g., Baird, 1988; Johnson and L'Esperance, 1984) as are *families in which the caregiver's age, at the time of the report, was younger* (e.g., Baird, 1988; Berkeley Planning Associates, 1983; Wagner, 1994). Johnson (2002) in a multi-state, multi-county study, found that counties with higher rates of neglect victims with younger parents had higher recurrence rates. Baird (1988) found that younger parents were more likely to perpetrate repeat neglect as opposed to abuse.

  Risk of repeat victimization may also differ according to the makeup of the family, i.e., whether the family is comprised of a single parent, a stepparent, two parents, foster parents, etc. (e.g., Hamilton and Browne, 1999; Levy et al., 1995*)*. For example, Hamilton and Browne (1999) found that more children suffered repeat victimization, either by the same perpetrator or by a different one, if they lived with a step-parent, compared to children living with both biological parents. Further, Levy et al., (1995) found that single parent families were more likely to recur compared to two parent families. Similarly, Ferleger et al.'s (1988) research noted that perpetrators who had never been married and who did not have a history of being maltreated as a child were actually more likely to repeat maltreatment than perpetrators with a history of maltreatment as a child who were never married.

  The *geographic location of families is also associated with different re-referral or recurrence rates*. Studies have identified that *families living in rural areas are more likely to re-refer or recur* (e.g., Marshall and English, 1999; Way et al., 2001). Further, Marshall and English (1999) found that *re-referral rates vary according to the region in which a family lives* and Way et al., (2001) found that *families living in economically depressed areas had higher rates of recurrence*. For example, Palusci (2002) found that children living in areas with higher rates of urban populations experienced less physical abuse than children living in areas with lower rates of urban populations.

- **Family Problems**

  Consistent with the findings about children with a history of maltreatment, *families with a prior history of child maltreatment are more likely to recur* or re-refer (e.g., Cohn, 1979; English et al., 1999; Murphy et al., 1992). For example, English et al. (1999) found that a prior history of CPS involvement was the strongest predictor of re-referral out of all variables considered in their analysis.

Murphy et al. (1992) found that families with prior court involvement pertaining to child maltreatment were five times more likely to return to court for subsequent child maltreatment adjudication.

Caregiver substance abuse or domestic violence in the household is associated with higher rates of recurrence (e.g., Baird, 1988; DePanfilis and Zuravin, 1999b; Palusci, 2002). Palusci (2002) found that recurrent physical abuse for children aged 0-3 were 2.4 times more likely when a caretaker was identified as having a drug problem. DePanfilis and Zuravin (1999b) found that families in which domestic violence or other marital conflict existed, were 1.5 times more likely to recur.

Recurrence rates are higher for families in which psychological problems are identified as a problem (e.g., Murphy et al., 1992; Palusci, 2002). For example, Murphy et al. (1992) noted that child maltreatment cases with a history of court involvement were five times more likely to return to court. Palusci (2002) found that recurrence of physical abuse for children aged 0-3 was 11.7 times more likely if a caretaker was emotionally disturbed.

Families who lack social supports and families experiencing higher levels of stress are more likely to recur (e.g., Baird, 1988; DePanfilis and Zuravin, 1999b). For example, DePanfilis and Zuravin (1999b) found that families with a deficit of social supports were 1.4 times more likely to recur and families experiencing stress were 1.5 times more likely to recur. Their research also identified that when these two factors existed in a family, 83 percent of the cases recurred, while in cases where neither factor appeared to be germane, only eight percent of those families recurred.

Regarding a family's income or economic resources, research has found *higher rates of recurrence and re-referrals in families with lower levels of income* (e.g., Baird, 1988; English and Marshall, 1998; Levy et al., 1995, Way et al., 2001). For example, Levy et al. (1995) found that families receiving Medicaid were 2.6 times more likely to recur than families with commercial health insurance. In addition, when mean neighborhood income was compared (controlling for ethnicity and gender) by Way et al., (2001), each increment of $1,000 decreased risk between 1-3%, and there was no difference across maltreatment types. Ferleger et al., (1988) found an interaction between receipt of public assistance and whether the perpetrator was abused as child. Individuals who received public assistance who had not been abused as a child were more likely to perpetrate repeat maltreatment than individuals who had not been abused as a child and had some earned income. However for individuals who had been abused as a child, different income sources were not associated with different rates of repeat maltreatment.

- **Other Family Factors**

  Another replicated finding is that a *family's inability to use agency resources has been found to be associated with higher rates of recurrence* (Johnson and L'Esperance, 1984; Marks and McDonald, 1989). Johnson and L'Esperance (1984) found that families with greater abilities to use agency resources had lower rates of recurrence.

  Studies have also been conducted to assess recurrence according to the level of risk identified for families either at intake or following an investigation. Findings from different studies cannot be generalized because of the different methodologies and assessment protocols employed to determine levels of risk. However, studies conducted do generally suggest that on a continuum of risk from low to medium to high, *the lower the level of risk, the lower the likelihood of recurrence* (e.g. Baird, 1988; Johnson, 1995a).

Perpetrator Recidivism

Most studies have focused on recurrence by looking at child victim level or family level recurrence rates, and numerous studies have been conducted regarding perpetrator recidivism of sexual abuse (Finkelhor, 1986; Hanson and Bussiere, 1998; Hanson, Steffy, and Gauthier, 1993). Some recent studies have explored other types of child maltreatment perpetrator recidivism, including physical abuse and/or neglect (Way et al., 2001; Hamilton and Browne, 1999). Such studies assist in understanding the scope of perpetration by offenders, i.e., whether they perpetrate child maltreatment against the same or different children. Further, the advantage of this approach is that while children over age 18 are rarely tracked for recurrence, the tracking of perpetrators' recidivism can extend throughout the perpetrator's life (Way, et al., 2001, citing Hanson et al., 1993).

- **Perpetrator Access to the Child**

  Studies have also demonstrated that *the more a perpetrator has access to the child victim, the higher the rate of recurrence* (e.g., Cohn and Daro, 1987; English and Marshall, 1998; Johnson and L'Esperance, 1984). Johnson and L'Esperance found that children who had experienced recurrent maltreatment had spent more time with the abusive caregiver than children who spent less time with their abusive caregiver.

Because there have been few studies of perpetrator recidivism considering all maltreatment types, the following findings have not been replicated, but may be informative.

- **Unsubstantiated vs. Substantiated Perpetrators**

  Some research suggests that *there may be no overall difference in timing of recurrence for substantiated and unsubstantiated perpetrators, but there may be differences in recurrence rates for unsubstantiated and substantiated perpetrators*

depending on the type of maltreatment allegedly perpetrated (Way et al., 2001). Way et al. (2001) compared recidivism rates over a 4.5 year period for 31,531 alleged maltreatment perpetrators whose original report either was or was not substantiated. Their study found that *alleged perpetrators who had been unsubstantiated for prior reports return to the system at high rates compared to perpetrators who had been substantiated for child maltreatment*. Further, when type of maltreatment at the index event was considered, they found that unsubstantiated and substantiated physical abuse perpetrators were about equally likely to be re-reported to CPS; substantiated perpetrators of neglect were more likely than unsubstantiated perpetrators of neglect to be re-reported to CPS; and unsubstantiated perpetrators of sexual abuse were more likely to be re-reported to CPS in relation to substantiated perpetrators of sexual abuse. Their analysis suggests that unsubstantiated sexual abuse perpetrators returned to the system at a higher rate than substantiated sexual abuse perpetrators (34% vs. 25%). Moreover, they noted that perpetrators were commonly substantiated for different types of maltreatment than the original allegation's maltreatment.

- **Identity of Perpetrators**

Although it has yet to be replicated, research suggests that *there may be different recurrence rates depending on the identity of the perpetrator* (Hamilton and Browne, 1999). Hamilton and Browne's (1999) study of recurrent maltreatment that tracked referrals to police child protection units in England over a 27 month follow-up period found that of the 54 first time referrals that had repeat victimization, 57% of the maltreatment incidents were perpetrated by the same person, 25% suffered repeat victimization by a different perpetrator and 18% suffered repeat maltreatment by both. Similarly, Way et al., (2001) found that *female perpetrators were at greater risk for recidivism than males* (35% vs. 28%)*, depending on the initial type of maltreatment*. of index event. For example, although only 23% of the sexual abuse perpetrators were female, females were one third more likely to be re-reported for any type of maltreatment. In addition, their analysis suggested that there was no difference in recidivism rates when the ethnicity of perpetrator was compared.

Provision of Services

The body of research regarding the effects of services and interventions on recurrence is diverse and difficult to compare given all the differences between programs and services provided. Further, as DePanfilis and Zuravin (1998) note, few studies have looked at how the presence, type and length of treatment may affect recurrence rates. Despite this, some trends are apparent.

- **Post-Investigative Services**

Studies that have looked at the relationship between the provision of services and recurrence have generally noted that *the provision of post-investigation services is associated with higher rates of recurrence* (e.g., DePanfilis and Zuravin, 1999a; Fluke et al, 1999). For instance, Fluke, et al., (1999) found that children whose families received services were 1.4 times more likely to recur than those children whose families did not receive services. An analysis of data regarding physical abuse of children aged 0-3 also found that provision of support services was associated with higher rates of recurrence (Palusci, 2002). However, DePanfilis and Zuravin's analysis of recurrence in Baltimore, found that that over time, the risk of recurrence declined over the service period.

However, it appears *compliance with service plans is associated with lower rates of recurrence* (e.g., Ferleger et al., 1988; DePanfilis and Zuravin, 2002). DePanfilis and Zuravin (2002) found that families noted to attend the services identified in their case plans were 32% less likely to recur while their case was open with CPS. Ferleger and colleagues (1988) found that perpetrators who inflicted severe abuse but attended more appointments were less likely to reabuse than perpetrators who kept fewer appointments.

Studies have shown that *the number of services received by a family may reduce recurrence rates,* although this effect may differ according to the type of maltreatment (e.g., Johnson, 2000; Inkeles and Halfon, 1997). Johnson (2000) found that counties providing more services had lower recurrence rates as did those that provided more services to families with substantiated neglect reports.

Finally, *the use of safety or risk assessment protocol and planning tools appears to reduce risk of recurrence* (Fluke, 1991; Fluke et al., 2001b). As an example, Fluke et al. (2001b) found that, after controlling for other influences, the use of a safety assessment protocol reduced recurrence rates by 28.6 percent when recurrence rates pre-implementation and two years after implementation were compared.

- **Family Preservation Services**

Thus far, results of *evaluations of family preservation services programs have not revealed a significant impact on recurrence rates*. Littell's (1997) research regarding the efficacy of family preservation services determined that the duration, intensity and breadth of family preservation services had little overall impact on the recurrence of child maltreatment. Chaffin et al. (2001) found similar results after comparing participants in a statewide Family Preservation Family Support (FPFS) program with program dropouts and recipients of one-time services. Their analysis concluded that provision of services addressing basic concrete needs seemed to perform equally or better than a number of more involved and typical FPFS parenting services, including in-home services.

- **Family Support Services**

  While not replicated in other studies, *research regarding a particular program of family support services found a decreased rate of recurrence in families receiving services from the program compared to families who did not* (Lutzker and Rice, 1987; Lutzker and Rice 1984). For example, Lutzker and Rice (1987) found over the course of five years, families that had participated in Project 12-Ways, an in-home family support program, experienced 12% less recurrence in year one and six percent recurrence in year five of the study.

- **Possible Effects of Services Over Time**

  It appears that *in cases in which services are provided, recurrence rates are highest at earlier points in time* (Fryer and Miyoshi, 1994; Zuravin and DePanfilis, 1996). For example, Zuravin and DePanfilis (1996) found that the risk of repeat maltreatment was greatest in the first 180 days after case opening and that this risk declined over the course of the period of time during which CPS provided services.

  When *compared to families with a history of CPS involvement*, *first-time CPS service recipients may be equally likely to recur while their cases are open but after case closure they appear to have lower rates of recurrence* (e.g., Zuravin and DePanfilis, 1996). Zuravin and DePanfilis (1996) found that when compared with families with already open cases at the time of a report, first time CPS services recipients were less likely to recur over the course of two years after closure. Eighty-three percent of first time CPS service recipients had no further reports of maltreatment, while only 63 percent of families who had had an open case at the time of the index report did not experience recurrence. However, during the time CPS was active in these cases, there was no difference in recurrence rates between the two groups.

  Studies have determined that the *provision of foster care services is associated with higher rates of recurrence but decreased rates over time* (e.g., Baird, 1988; DePanfilis and Zuravin, 1999b; English et al., 1999; US DHHS 2002a). For example, DePanfilis and Zuravin (1999b) found that families with a child placed in foster care were 1.9 times more likely to have recurred. However, Johnson, (2000) found at the county level, that counties placing more children in foster care had lower recurrence rates. At this stage, the exact timing of foster care placement and reunification in relation to recurrence has not been addressed in studies of recurrence, not has the impact of short term (less than 10 days) foster care been addressed.

- **Indicators of Service Surveillance Effect**

  Families who receive services are subjected to greater scrutiny than those families who do not. Researchers have long thought this "surveillance effect" may influence recurrence rates for these families (e.g., DePanfilis, 1995; Fluke, et al., 1999; Johnson and Clancy, 1989). Research taking this into account suggests that *higher recurrence rates may be associated with increased scrutiny of families receiving services* (e.g., Johnson, 2000; MacMillan, 2002). For example, provision of services was associated with higher volumes of reports by social service agencies and higher rates of substantiation, suggesting that providing services is associated with greater surveillance (Johnson, 2000) Further, preliminary findings from a study by MacMillan et al. (2002) suggest that providers of in home services were significantly more likely to report subsequent maltreatment as compared to other reporter types, thus indicating a surveillance effect that may explain greater reporting of families receiving services. Similarly, Littell (1997) found that higher intensity of contact (measured by number of hours caseworkers and parent aides spent with a family per day) was associated with higher rates of recurrence during the first six months after termination of services, but that these differences were not sustained after a period of one year. DePanfilis' (1995) finding that risk of recurrence after case closure stays fairly level may also support this notion that surveillance by service providers contributes to recurrence rates for open cases.

The research described above provides a foundation for considering factors that are associated with recurrence. Some findings appear to have been observed often enough to suggest that they should always be considered in identifying possible areas for intervention. These would include the prevalence of neglect and multiple maltreatment and concerns about prior victimization or prior reports. Other areas such as the association of services with recurrence appear more complex and not necessarily amenable to clear approaches to intervention. In the following sections of this supplement the developers attempt to provide some additional approaches to analyzing and thinking about recurrence in the presence of what appears to be known and what remains to be untangled.

Part B:
Understanding Recurrence at the State and Local Level

Every state has a rich source of information in the data it collects on families involved in the child welfare system. This is especially true since most states have implemented State Automated Child Welfare Information Systems (SACWIS). Analysis of such data provides the opportunity for greater insight into why states, regions, or offices are observing particular outcomes, either good or bad. If the data are problematic, analyses can suggest approaches to remedying problems with the information system in order to achieve more positive outcomes. Problems might be tied to practice, policy, staffing, or limitations of particular resources and analyses of data can help identify the source of the problems. If the data reflect strengths, a state may want to consider how it can build on these strengths. Can a pilot be expanded? Should more clients be referred to a particular service provider whose services have been shown to be effective? Before getting to that point, though, it will be useful to develop a good understanding of the basic data available concerning recurrence.

Questions and Hypotheses to Consider

In order to aid in thinking about how to look at the issue of recurrence, this section includes a series of questions that should help to organize your approach to analyzing data. The questions below are only meant to be a starting point. In research language it is appropriate to start with a set of questions about the data or even hypotheses about what you expect to find. To that end, this section is meant to help you start thinking about your data and how you could get more meaning from it.

What are the goals of your analysis?

The questions you might ask will have much to do with the goals of your analysis. Do you want to identify whether a particular subgroup in your region is more likely to recur? Do you want to identify whether participants in a particular program are less likely to recur? What about other factors that may be influencing recurrence rates, such as policies, staff years of experience, or is there a particular family or child characteristic with which your agency seems to struggle? How many children must not recur in order to make you program improvement goal? The goals of your efforts should drive the questions you will ask. The information you derive from answering your questions should be directed at assisting you in targeting your efforts. For each category below, questions are posed for each of the factor categories discussed above in order to help you dissect reasons for why your recurrence data looks the way it does. Underlying these questions is the premise that the answers to them may point to changes in programs, policies and/or practice.

Population to Study

> Do you want to look at all accepted reports, only repeat substantiations, substantiated reports that were preceded by unsubstantiated reports?

Do you want to look at specific age groups of children or families with particular characteristics (single parents, AOD, DV, physical abuse only, etc.)?

Child Factors

Prior reports and prior substantiations
Are children who come to the attention of your agency the first time handled differently compared to children who have been reported or substantiated before?

Age of child and recurrence
Are the higher rates of recurrence for younger children due to actual incidence or a higher propensity to report younger children who may have experienced maltreatment?

Multiple maltreatment types and recurrence
What percent of cases with multiple maltreatment types involve neglect and is this element a large reason for the higher rates of recurrent maltreatment in multiple vs. single types of maltreatment cases?

Race of child and recurrence
Is racial disproportionality a concern in the recurrence data? Is there a relationship between variations in the levels of recurrence by race and ethnicity and placement rates or is actual incidence different?

Family Factors

Single Parent/Mom perpetrators
Are single parents and moms who are perpetrators more likely than two parent families to be reported for neglect than for other types of maltreatment?

Substance Abuse
Are your data regarding the assessment of substance abuse adequate? How many cases are present where substance is an issue? Are these families more likely to recur?

Domestic Violence
Are your data regarding the assessment of substance abuse adequate? How many cases are present where substance is an issue? Are these families more likely to recur?

Services

Case status and recurrence
Is there a correlation between likelihood of re-victimization within first six months and cases status (i.e. open vs. closed)? Are families with open cases that experience recurrent maltreatment, demonstrating different recurrence rates because they are more closely scrutinized while receiving service, because they inherently have more problems and actually maltreat more frequently, or both?

Foster care and recurrence
Are the higher rates of recurrence associated with foster care placement due to recurrence prior to, during placement, or after placement? What proportion of foster care recurrences associated with the use of short-term placements?

Service Effectiveness
What is different about the types of families receiving services? Do families that are open for services have different recurrence rates after receiving services compared to families that leave services more quickly? What specific types of service are associated with lower rates of recurrence?

Service Targeting
Are interventions designed to address specific children or family issues effective in reducing recurrence? If effective, will the reduction be sufficient to meet your program improvement goals?

Policy Factors

Timing of reports and recurrence
Are multiple reports about the same incident or situation possibly being counted as recurrence? What percent of additional reports received within 30 days are about the same incident or situation? Are these additional reports the result of investigative findings? Are they from the same or different reporter as the first report?

In counting recurrent maltreatment, does it make a difference when the report is received in relation to the last report (i.e., within 30 days of the original report, not counted, after 30 days, counted)? What other factors might affect how you handle new reports on open cases? Do such policies reflect prioritization of the safety of children?

What about new reports on cases closed with a finding of no maltreatment (unsubstantiated)? Are new reports on those cases handled differently? Does it depend on when the report is received? Does it depend on how many prior reports have been received on the family?

Report source and recurrence
Is the fact that cases reported by law enforcement experience lower likelihood of recurrence due to a deterrent effect or incarceration or to the presence of criminal proceedings?

These are only some of the questions that may be pertinent to your agency. It may be productive to tackle only a small number of these areas; for example, those that you believe are likely to have the greatest impact on recurrence.

Part C:
Methods for Recurrence Research

The process of conducting research in this area, as in any areas of performance in child welfare, is complex. The identification of research approaches methods even for a specific area such as recurrence is highly detailed and multi-faceted. Consequently, the scope of this presentation is limited to the presentation of key methodological concepts. To some extent the presentation is also limited by the preferences and experience of the developers of this document as well.

In any case, it is strongly recommended that practitioners who are inexperienced in conducting research and unfamiliar with research methodology at minimum consult with a trained researcher, preferably with experience in this subject area.

Research Goals

As presented in the section B (above) an important first step in the process of research is to develop and clarify the research goals. In section B the value of this process was addressed from the standpoint of helping to generate research questions.

In an applied research setting, particularly a within the context of a child welfare agency where the focus is on obtaining evidence to support practice and policy, the process of setting goals also serves some other important purposes. Equally important is that goals need to guide the research process. The process may be used to help engage a wider community of staff or stakeholders as well. Another role that goal setting may play is helping to set boundaries for the research process and to delineate the limitations of what it may be possible to learn.

Planning for Limitations of Research on Recurrence

In considering recurrence research limitations there are several constraints on the research process that should be considered and identified up front. Some examples of these are the following:

> Time for Follow-up: There must be sufficient follow-up observation period for a recurrent event to occur. Usually this issue is addressed from the standpoint of deciding that the research will be either a retrospective (looking back) or a prospective (looking forward) design. Retrospective designs are usually less preferred, but are appropriate for descriptions of populations or evaluations of well-established services. If services are new, a prospective design is probably a requirement.
>
> The length of the follow-up period is also and important consideration from both a methodological and practical perspective. For example, since the federal standard is set at six-months the follow-up period to determine if recurrence has changed would need to be at least as long for all the research subjects, and for many projects longer. In many applied settings the amount of follow-up time is limited due to budgets or simply the need for quick answers to key questions.

Nature and Quality of Data: Obviously data availability and quality will be an important consideration as it is in any research effort. Since much of the recurrence research relies on administrative data these concerns may be more acute. In fact one goal of such research might be to identify and ameliorate problems with the administrative data sources. Besides the quality of data, the availability of data includes consideration of whether key data elements are available (e.g. the availability of risk or family assessment data, or the capacity of the system to capture multiple-maltreatment). A delineation of known or potential data problems is a useful step in the process of identifying limitations.

New Referrals Cohorts versus Children with Prior Referrals: This is a common concern from the standpoint of research using child welfare indicators. Generally, examining new referrals is considered the preferred approach. However, in the area of recurrence successful interventions involving chronic situations may be very productive in reducing overall recurrence rates, thus research involving these populations could be very useful. Also, the current federal standard does not isolate children who have not been referred and includes all children that are victimized during the first six months.

In some instances the limitations will not be known until the research has been initiated and the data sources and other constraints are better understood. As mentioned above this area of research is quite complex, and of particular concern are the dynamics of children and families as they interact with the child welfare system over time. For example, in a recent research study design process that compared historical populations with contemporary populations of children, it was learned that many children become members of the contemporary population. This represents a type of data contamination and may prevent certain types of comparisons or require modifications to the design. The implication here is that information regarding newly encountered limitations must be addressed and understood by all involved.

Choosing a Unit of Analysis and Populations

The unit of analysis is a key ingredient of any research process. In the area of recurrence units of analysis have typically been children, families, and perpetrators. Of course, the selection of a unit analysis should be carefully tied to the goals and questions of the research.

The other consideration is the delineation of the population or subsets of the population of interest that are tied to the unit of analysis. For example, if the unit of analysis is children, is the population only young children or children who have not been referred previously?

In the current CFSR environment and assuming that one goal of the research is to inform Program Improvement Plan it may be appropriate to clearly delineate the relationship of the unit of analysis to the federal recurrence indicator and the population addressed in the research.

Choosing Data Sources and Data Collection Methods

As described in the primary child maltreatment recurrence monograph there are generally two sources of data that are used in recurrence studies, administrative data and case record data. The choice of data sources is also determined to at least some extent by the goals and questions. The main reason that these data sources are key in recurrence research is that by definition the events of interest are related to the operation of the child welfare agency.

One alternative is to select a sample of children and follow it longitudinally and for the researcher to use a definition of abuse and neglect that is observed though a consistent set of criteria and protocols. Even in these designs the ongoing relationship to the child welfare system is an important component of the research. Examples of such research include the National Survey of Child and the Adolescent Well-Being Longitudinal Studies of Child Abuse and Neglect (LONGSCAN).

Administrative Data Sources: These are most often derived from agency information systems. Typically, these information sources contain data about child abuse investigations as the primary set of data used in recurrence studies, but it is productive to consider how to incorporate other data regarding on-going service provision and foster care if called for in the design. A major part of the data gathering process is to construct the data sets to meet the design requirements and accurately reflect the unit of analysis and populations that have been selected. A considerable effort is often required to understand the initial structure of the data and to construct the data to meet the study requirements.

The advantage to using data from administrative source is that is generally available with no additional effort to collect, there are generally large amounts of data, and data are often available over extended periods of time. Disadvantages are that data construction is often a complex and labor intensive activity, not all of the critical data of interest is collected, data of interest may be missing for significant numbers of cases, errors in the data may be systematic, and the system may not be designed to adequately reflect the design requirements of the study.

One other advantage of the administrative data sources is that in some instances data from other sources can be incorporated. These other sources would include such data as census information, other services such as TANF, Medicare data, mental health, and schools. Another highly productive type of data to combine with the basic administrative data sets is surveys of staff, policy and practice data regarding specific localities, and even case record review data. These other data sources can be linked to the primary administrative data set through ID or statistical matching procedures.

Case Record Reviews: This usually entails the process of reading case records in paper or sometimes automated files and coding the data as appropriate. Almost always this type of data collection is performed on a sample of cases. The data collection forms must be designed to reflect the study goals and questions, the persons collecting the data must be trained, and ideally some degree of reliability between those involved in collecting the

data should be sought. Finally, the data must be entered and cleaned in order to use it for analysis.

The advantage of a case record review process is that the data collection instrument can be designed to reflect all of the key goals and questions required of the research. The researcher has some degree of control regarding the reliability and accuracy of the data and the ability to include as much data as time and resources allow.

The disadvantages of this data collection method are that it is limited by the size and design of the sample that can be supported by the resources of the project, the time needed to collect and enter the data may be considerable, the data collection procedures may not in fact be entirely reliable, and training may be inadequate to identify or adequately interpret some of the material in the case records. The reliance on a sample may mean that for some events or populations the base rates may not be adequate to analyze.

As an overall approach to conducting research both techniques utilized concurrently may be productive, but the normal practical concerns and constraints may place the advantages of one technique over the other as a more obvious choice.

Choosing an Analytic Approach

The analytic approach involves the normal research and evaluation process of selecting a study design or designs, and developing an analytic plan. The choice of an analytic approach is not necessarily obvious from the general goals or the research questions. The options for the research design may depend more on practical concerns, for example, an experimental design to evaluate an intervention approach even though preferred may generate ethical concerns, or be too costly. In some instances the range of analytic procedures that are available will yield similar results, meaning that no clear choice of procedures other than the researcher's preference may be operating.

As described in the research review in Part A of this supplement, a range of analytic tools has been used in recurrence research. This discussion will focus a bit further on some of the guidelines that might operate in making choices among different analytic procedures. Table 1, provides some sense of what the commonly used procedures are and how they are used in recurrence research.

Table 1 – Procedures Used in Recurrence Research

- **Life Tables** – This is a form survival analysis that is primarily descriptive or used to test two for differences between survival distributions. Typically, information produced is the likelihood or hazard that recurrence will happen from one time period to the next. Taken together this can provide an estimate of the cumulative percentage of recurrence up to a certain point in time, for example, 60 days, 6 months, 1 year etc. The advantage of this method is that it does not require that all individuals be followed for a fixed amount of time. Individuals that cannot be followed up to the end point of the observation period are censored so that estimates from that point forward are based on the individuals who can be observed. Thus the estimates are considered unbiased. It should be noted that in recurrence research, typical measures of central tendency commonly associated with this technique such as median duration are rarely applicable.

- **Logistic Regression** – This is a multi-variate technique that associates a set of variables with the likelihood of recurrence within a set period of time. The typical association of the variables is expressed as an odds ratio that indicates that in the presence of the variable the likelihood of recurrence increases by a factor greater than one, or less than one. If the odds ratio is equal to one then the presence of the variable is neutral with respect to recurrence. This procedure is useful because it allows for all effects of all the variables used in the procedure to be considered simultaneously and to compare their relative importance. The other advantage is that the procedure takes categorical variables into account so that different categories of a variable like age or maltreatment can be compared.

- **Cox Regression/Proportional Hazards** – This procedure is very similar to logistic regression and will produce the same results under specific conditions. One advantage to the procedure is that as a member of the class of survival analysis procedures it allows for censored observation. Thus, in comparison to logistic regression it does not require that all subjects be observed for equal lengths of time. In addition, it can be used to develop more sophisticated mathematical descriptions of the time to recurrence associated with the variables that are used which in turn can be used to develop other models.

- **Multi-Level Models** – These are relatively new statistical procedures and can incorporate the range of logistic and proportional hazard procedures. The main use of these models is to incorporate the effects of groups of cases that share a common feature. For example, children who share the same worker, or who were served by the same local office. The objective of the analysis is to take into account in an unbiased way variables that hypothetically distinguish these groups. For example, the amount of training that a worker may have received or their workload.

- **Simulation** – These are also relatively rare and new procedures, but they allow for the development of complex mathematical models that can be used to assess the impact of policy. In recurrence research these models can be used in conjunction with survival analysis techniques to model assumptions about the effectiveness of intervention and to determine how much change over what period of time would be needed in order to meet program goals. They can also be used to gauge the effect of competing invention strategies, and clarify assumptions about what strategies would be needed in order to implement change.

Sorting Out Findings and Implications

It is sometimes difficult to sort out implications regarding the findings of a research project. To some extent this is a matter of design. It is also a consequence of the complexity of the Child Welfare service delivery system.

The obvious step of adequate attention to planning and design are important elements that will facilitate pulling implications from research. This is also a matter of expectations, and attempting to insure that the expectations do not exceed the limitations of the research. In the case of the CFSR review process an important concern is establishing expectations that are connected to the overall Program Improvement Plan. In other words, the goals, questions and design of the research should align with the goals of the program improvement plan.

Part D:
The Federal Child and Family Services Review Recurrence Measure

For the Child and Families Services Reviews (CFSR), recurrence of child maltreatment is defined as the percentage of children who were victims of a substantiated or indicated child abuse report during the first half of the calendar year who had a subsequent substantiated or indicated maltreatment report within six months of the first report. The indicator was developed based on information reported by 21 States to the National Child Abuse and Neglect Data System (NCANDS) Detailed Case Data Component (DCDC) for two calendar years, 1997 and 1998. Because multiple years were available for some but not all states providing data, 34 data points were available for the calculation of the national standard. The six-month parameter was chosen because recurrence across calendar years is difficult to calculate for some states and because research has indicated that the majority of recurrence within a twelve-month period takes place within the first six months following a substantiated or indicated report of child maltreatment (Fluke, Yuan, Edwards, 1999; Zuravin and DePanfilis, 1996).

Since its original calculation, the indicator has been revised once in order to account for corrected State data submitted for 1997 and 1998. The current national standard for the recurrence of child maltreatment is 6.1 percent. A State is considered to have met the national standard if its recurrence rate, calculated according to the federal definition, is equal to or less than the national standard for recurrence (US DHHS 2001b).

It is important to note that this standard reflects the 25th percentile on the normal probability distribution, i.e., 25 percent of the data on recurrence fell below this number among the states used to set the standard. It also reflects a further correction for the sampling error; this resulted in an upward adjustment in the standard. To adjust for sampling error, the data were analyzed and tested statistically to determine if they followed a normal distribution. As a result of this test, it was determined that the original data set could be treated as a sampling distribution. The 25th percentile standard was then adjusted for the sampling distribution of the mean by adding the value of the standard error of the mean as a sampling error to the value of the first quartile data point. The adjustment resulted in increasing the value of the standard in favor of including more states as having met the standard, or in other words the adjustment was in favor of the states.

In keeping with the federal definition, State performance on this indicator is calculated by determining the number of unduplicated children who were victims of maltreatment during the first six months of the calendar year for the NCANDS reporting period used in the CFSR (i.e., January 1 – June 30). A victim is defined as a child who experienced a substantiated or indicated maltreatment, or died as a result of maltreatment. Each child is followed for six months from the first report date during the January to June period to determine if another substantiated or indicated report was received. The count of children who met the recurrence criterion is then divided by the total number of children who were victims of maltreatment during the first six months of the calendar year.

In addition to the CFSR recurrence indicator derived from the statewide data, there is a specific item in the on-site review instrument regarding recurrence. This aspect of the on-site CFSR entails an examination of a sample of written case records, but is defined in the same way as the statewide indicator. Information related to case review findings helps to “flesh out” recurrence and highlight issues that may be present in the statewide data. These results are also reported in the final report along with the State’s performance on the statewide recurrence measure described previously. The CFSR process includes an evaluation of the timeliness of initiating investigations, the maltreatment of children in foster care and services offered to protect children in their own homes. Additionally, the risk of harm to children among the cases included in the on-site review is evaluated. Thus, even though this monograph focuses on recurrence, the CFSR review process is much more comprehensive in its consideration of child safety issues.

While not taking issue with the specific measure of recurrence used in establishing the CFSR outcome standard for recurrence, it would be inaccurate and counterproductive to suggest that the CFSR measure is the ideal measure. As a measure of recurrence it is has been found to be feasible, reliable and valid measure over several years and across States. In the view of the authors, the current CFSR measure has appropriately enhanced serious dialogue about the performance of CPS and has been a driver in moving the field toward long-term improvement of CPS systems. From this perspective, it is a very good starting point from which to address recurrence and to assess improvements.

Part E:
Other Resources on Recurrence

A considerable range of research, training, and technical assistance resources are available related to recurrence. In this section we offer a guide to at least some of the key resources.

Training and Technical Assistance Resources

Training and technical assistance related to recurrence and especially as it impacts the Child and Family Service Review indicators are available from the federal government in several forms. In particular, the various federal resource centers are able to provide up to ten days to each state without charge. The following are the primary resources that address recurrence.

Federally Supported Resources

National Resource Center on Child Maltreatment
P.O. Box 441470
Aurora, CO 80044-2470
Voice (303) 369-8008
(303) 369-8009
nrccm@gocwi.org
http://www.gocwi.org/nrccm/

National Resource Center on Information Technology in Child Welfare
50 F Street, N.W.
6th Floor
Washington, DC 20001-2085
Voice (877) 672-4829
Fax (202) 737-3687
nrcitcw@cwla.org
http://www.nrcitcw.org/

National Child Welfare Resource Center for Organizational Improvement
Edmund S. Muskie School of Public Service
96 Falmouth Street
P.O. Box 9300
Portland, ME 04101-9300
Voice: (800) 435-7543
Fax (207) 780-4417
muskieweb@usm.maine.edu
http://muskie.usm.maine.edu/helpkids/index.html

US Department of Health and Human Service, Administration for Children and Families, Children's Bureau
330 C Street, S.W., Room 2068C
Washington, D.C. 20201
Voice (202) 205-8618
http://directory.psc.gov/acf/1414.html

Other Training and Technical Assistance Resources

Action for Child Protection
2709 Pan American Freeway NE, Suite I
Albuquerque, NM 87107
Voice 505) 345-2500
Fax (505) 345-2626
kay@actionchildprotection.org
http://www.actionchildprotection.org/

Research Resources

The developers reviewed a large number of articles in the course of conducting the review of research regarding recurrence. Of these, a handful stand out as good examples of research conducted, methodological approaches, and/or promising analyses. Although all the resources on the bibliography for this paper were helpful, the top handful of these that greatly informed the authors' understanding of the issue was selected.

First and foremost, for a profile of national rates and factors associated with recurrence, *Child Maltreatment 1999* (US DHHS 2001a) and *Child Maltreatment 2000* (US DHHS 2002a) were most helpful. The upcoming *Child Maltreatment 2001* (In Press) will also have similar information. These publications (as well as other a searchable database that includes numerous publications regarding recurrence) can be obtained through the National Clearinghouse on Child Abuse and Neglect (http://www.calib.com/nccanch). Similarly, the research cited by Fluke et al. (1999) and Palusci (2002) are good examples of research using NCANDS data.

For good examples of using and building on information gathered about recurrence to explore many different issues, publications listed in the bibliography by DePanfilis and Zuravin those by English and colleagues as well as the article by Fryer and Miyoshi are good resources. The research published by these authors demonstrate the potential to enhance local or state data sets over time, delve deeper or look at different issues as well as to track recurrence over time. They also address important considerations regarding methodological approaches to recurrence research.

Further, the articles by Hamilton and Browne (1999) and Way et al., (2001) are good examples of research looking at child maltreatment perpetrator recidivism. In addition, the research conducted by Johnson (2000), reflects considerations about and approaches to identifying surveillance effects on recurrence rates.

In addition to these published sources several organizations have experience with and are generally able to provide research services and research related technical assistance to states and localities. These include:

Research Resource Contacts

The American Humane Association, Children's Services
63 Inverness Drive East
Englewood, CO 80112
Toll Free:(866) 242-1877
Fax: (303) 792-5333
Contact: Myles Edwards, Ph.D.
MEdwards@AmericanHumane.org
http://www.americanhumane.org/site/PageServer

Chapin Hall Center for Children
University of Chicago
1313 East 60th Street
Chicago, Illinois 60637
Voice (773) 753-5900
Fax: (773) 753-5940 (fax)
www.chapin.uchicago.edu

Children's Research Center
National Council on Crime and Delinquency
426 S. Yellowstone Drive, Suite 250
Madison, Wisconsin 53719
Voice (608) 831-1180
Fax: (608) 831-6446
kxfisher@chorus.net
http://www.nccd-crc.org/crcindex.htm

Child Welfare Research Center
Center for Social Services Research
School of Social Welfare
University of California, Berkeley
16 Haviland Hall #7400, Berkeley CA 94720-7400
Voice (510) 642-1899
Fax (510) 642-1895
Helki@uclink4.berkeley.edu
http://cssr.berkeley.edu/childwelfare/

Jordan Institute
School of Social Work
University of North Carolina at Chapel Hill
301 Pittsboro St., CB#3550
Chapel Hill, NC 27599-3550
Voice (919) 962-6535
JiforFamilies@unc.edu
http://ssw.unc.edu/jif/aboutIns.htm

Walter R. McDonald & Associates, Inc.
7311 Greenhaven Ave, Suite 273
Sacramento, CA 95831
Voice (800) 998-1411
Fax (916) 427-8664
info@wrma.com
http://wrma.com/

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Appendices

Table A: Studies Identifying Child Factors Affecting Recurrence

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Child Characteristics			
Age of child			
Younger (different ranges, but all under age six)	*Cohn, 1979; English et al., 1999; Fluke et al., 2001a; Ferleger et al, 1988; Fryer and Miyoshi, 1994; Herrenkohl, 1978; Marshall and English 1999; Saulsbury, 1983; US DHHS 2002a; US DHHS 2001a*		
older (12-17)		*Fluke et al., 1999*	
Race/Ethnicity of child			
White, Non-Hispanic	*US DHHS 2001a (vs. African American and Asian American); US DHHS 2002a (vs. African American, Asian American and Hispanic)*	*Baird, 1988 (vs. Alaskan Natives/rural concentration)*	*English and Aubin, 1991 (vs. ethnic minority); Fluke et al., 2000; Levy et al., 1995; Inkeles and Halfon, 1997*
African American		*US DHHS 2001a (vs. White); US DHHS 2002a (vs. White)*	*Fluke et al., 2000; Levy et al., 1995; Inkeles and Halfon, 1997*
Asian American		*English et al., 1999 (re-referral and vs. Native Americans and all other ethnicities); US DHHS 2001a (vs. White); US DHHS 2002a (vs. White)*	*Fluke et al., 2000;*
Hispanic		*US DHHS 2002a (vs. White)*	*Fluke et al., 2000; Levy et al., 1995*

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Alaskan Native	*Baird, 1988 (v. Whites, posited that it was associated with an urban concentration)*		
Native American	*English et al., 1999 (re-referral and vs. Asian Americans and all other ethnicities)*		
Gender of child			
Female (vs Male)			*English and Aubin, 1991; English et al., 1999; Fluke et al., 1999; Hamilton and Browne, 1999; US DHHS 2002a*
Child has disability or medical problems			
Learning	*Hamilton and Browne, 1999; Palusci, 2002*		
Prematurity	*Herrenkohl et al., 1978*		
Developmental delays	*Herrenkohl et al., 1978; Marshall and English, 1999*		
Severe medical problems	*Hamilton and Browne, 1999*		
Child behavior problems	*Camasso and Jagganathan, 1995; Hamilton and Browne, 1999*		

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Type of maltreatment			
Neglect (vs. other maltreatment types)	*Baird, 1988; Berkeley Planning Associates, 1983; Chaffin et al., 2001; DePanfilis 1995; DePanfilis and Zuravin, 1999a; Fluke, et al., 1999; Fryer and Miyoshi, 1994; Inkeles and Halfon, 1997; Levy et al., 1995; Marks and McDonald, 1989; US DHHS 2002a; US DHHS 2001a; Way et al., 2001*		*Hamilton and Browne, 1999 (referrals to police CPS units)*
Physical abuse (vs. other maltreatment types)	*Herrenkohl et al., 1978*	*US DHHS 2001a (vs. other single or multiple maltreatment types)*	*Hamilton and Browne, 1999*
Sexual abuse (vs. other maltreatment types)	*Faller 1991*		*Hamilton and Browne, 1999*
Multiple maltreatment types (vs. Single maltreatment types)	*Berkeley Planning Associates, 1983; Herrenkohl et al., 1978; McDonald 1993; US DHHS 2002a; US DHHS 2001a*		*Hamilton and Browne, 1999*
Higher severity of maltreatment	*Berkeley Planning Associates, 1983; Browne, 1986; Camasso and Jagganathan, 1995; Cohn, 1979; Ferleger et al., 1988; Marks and McDonald, 1989*		*DePanfilis and Zuravin, 1999b*

Factors	**Recurrence**		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Child has history of CA/N	*English et al., 1999; Fluke et al., 2001a; Fluke et al., 1999; Hamilton and Browne, 1999; Littell, 1997; Marhsall and English, 1999; US DHHS 2002a; US DHHS 2001a*		

Table B: Studies Identifying Family or Perpetrator Factors Affecting Recurrence

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Perpetrator or Family Characteristics			
Substance abuse	*English and Marhsall, 1998; English et al., 1999; English et al., 1998; Hamilton and Browne, 1999; Neuenfeldt and DeMares, 1994; Paarz, 1998; Palusci, 2002*		
Domestic violence	*Baird, 1988; DePanfilis and Zuravin, 1999b; DePanfilis and Zuravin, 2002; English and Marshall, 1998; English et al., 1999; Palusci, 2002; Zuravin and DePanfilis, 1996*		
Family structure			
Single parent family	*Baird, 1988 (neglect); English and Aubin, 1991 (female); Hamilton and Browne, 1999; Levy et al., 1995*	*Herrenkohl et al., 1978 (physical abuse)*	
Family with step-parent	*Hamilton and Browne, 1999 (vs two biological parents)*		
Larger size of family	*Baird, 1988; English and Aubin, 1991; Fluke et al., 2000 (with younger children); Johnson and L'Esperance, 1984; Marshall and English, 1999; Neuenfeldt and DeMares, 1994; Paarz, 1998*		

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Perp history of maltreatment as a child	*English and Marshall, 1998; English et al., 1999; Marshall and English 1999; McDonald, 1993*		
Identity of perpetrator			
Bio parent	*US DHHS 2002a (mom)*		
Stepfather (vs bio mom)	*Hamilton and Browne, 1999 (step-parent); Way et al., 2001*		
Same perpetrator	*Hamilton and Browne, 1999*		
Perpetrator access to child	*Cohn and Daro, 1987; English and Marshall, 1998; Johnson and L'Esperance, 1984; Weedon et al., 1988*		
Caregiver a younger age at time of report	*Baird, 1988 (neglect); Berkeley Planning Associates, 1983; Wagner, 1994*		
Poor parenting skills	*English and Marshall, 1998; English et al., 1998*		
Lack of social support	*Baird, 1988; Baird et al., 1993; DePanfilis 1993; DePanfilis and Zuravin, 1996; Depanfilis and Zuravin 1999b; DePanfilis and Zuravin, 2002; English et al., 1999; Johnson, 1994; Paarz, 1998; Wood, 1995*		

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Family stress	*Baird, 1988; Browne, 1986; DePanfilis and Zuravin, 1999b; DePanfilis and Zuravin, 2002; Marks and McDonald, 1989; Zunder, 1990 (neglect)*		
Psychological problems	*Hamilton and Browne, 1999; Murphy et al., 1992; Palusci, 2002*		
Low motivation and/or low cooperation of perpetrator or caregiver	*Baird, 1988; Baird, Wagner, and Neuenfeldt, 1993; English et al., 1998; Johnson, 1994; Johnson and L'Esperance, 1984; Marks and McDonald, 1989; McDonald and Johnson, 1992; Wagner, 1994*		
Caregiver viewed incident as or more seriously as investigation worker		*Baird, 1988; Wagner, 1994*	
Family has prior CPS case	*Baird, 1988; Baird, Wagner and Neuenfeldt, 1993; Cohn, 1979; DePanfilis, 1993; English and Aubin, 1991; English et al., 1999; Fluke et al., 2001a; Hamilton and Browne, 1999; Johnson, 1994; Marks and McDonald, 1989; Murphy et al., 1992; Wagner 1994; Wood, 1995*		

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Multiple prior recurrences	*Browne, 1986; DePanfilis, 1995; DePanfilis and Zuravin, 1999a; English et al., 1999; English and Marshall, 1998; English et al., 1998; Fluke et al., 1999; Hamilton and Browne, 1999; Herrenkohl, 1978; Zuravin and DePanfilis, 1996*		
Prior report outcome			
Unsubstantiated (vs substantiated)	*Way et al. (2001) (sexual abuse perpetrators only)*	*Fluke et al., 2001a*	*English and Marshall, 1998; English et al., 1999a; Way et al., 2001*
Recent report of maltreatment	*DePanfilis, 1995; DePanfilis and Zuravin, 1999a; DePanfilis and Zuravin, 2002; Fluke, Yuan, Edwards, 1999; Fryer and Mioshi, 1994; US DHHS 2001a; US DHHS 2002a; Zuravin and DePanfilis, 1996*		

Factors	Recurrence		
	Greater Likelihood	Less Likelihood	Equal Likelihood
Geographic location of family			
Rural (vs urban)	*Baird, 1988; English et al., 1999; Marshall and English, 1999*		
Economically disadvantaged areas	*Way et al., 2001*		
Family's ability to use agency resources	*Johnson and L'Esperance, 1984; Marks and McDonald, 1989*		
Lower income			
Receipt of Medicaid	*Levy et al., 1995*		
Lack of economic resources	*English and Marshall, 1998; Way et al., 2001*		
Family income	*Baird, 1988; English and Aubin, 1991; Levy et al., 1995*		

Table C: Studies Identifying Service Factors Affecting Recurrence

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
Service Interventions			
Alternate response system (vs CPS services)			*English and Aubin, 1991*
Use of safety assessment or risk assessment protocol		*cite Baird or Johnson...Fluke, et al., 2001b; Fluke, 1991*	
Post investigation services received	*DePanfilis and Zuravin, 1999b; Fluke et al, 1999; Johnson, 2000; US DHHS 2002a; US DHHS 2001a*		
Family preservation services received			*Yuan et al., 1990; Littell, 1997*
Substantiated but closed with no services (vs. services provided)		*DePanfilis and Zuravin, 1999a; Zuravin and DePanfilis, 1996*	
Longer length of Treatment/services		*Gabinet, 1983; Cohn, 1979; Berkeley Planning Associates, 1983; Johnson and L'Esperance, 1984*	*DePanfilis and Zuravin, 1999b; Johnson and Clancy, 1990; Littell, 1997*
Higher Number of service appointments kept		*Ferleger, 1988; DePanfilis and Zuravin, 2002*	
More services received		*Inkeles and Halfon, 1997; Johnson, 2000 (neglect only)*	*Littell, 1997*
Risk assessment rating			
low risk (vs. medium or high)		*Baird, 1988; Baird, Wagner, Neuenfeldt, 1993; Johnson, 1995a; Johnson, 1995b; Neuenfeldt and DeMares, 1995; Squadrito, Neuenfeldt, Fluke, 1995; Wagner, 1994; Wood, 1995*	

Factors	Recurrence		
	Greater Likelihood	**Less Likelihood**	**Equal Likelihood**
medium risk (vs. low)	*Baird, Wagner, Neuenfeldt, 1993; Johnson, 1995a; Johnson, 1995b; Neuenfeldt and DeMares, 1995; Squadrito, Neuenfeldt, Fluke, 1995; Wagner, 1994; Wood, 1995*		
high risk (vs. low or medium)	*Baird, Wagner, Neuenfeldt, 1993; Johnson, 1995a; Johnson, 1995b; Neuenfeldt and DeMares, 1995; Squadrito, Neuenfeldt, Fluke, 1995; Wagner, 1994; Wood, 1995*		
Foster care placement	*Baird, 1988 (prior placement and abuse); Browne, 1986; DePanfilis and Zuravin, 1999b; English et al., 1999; US DHHS 2002a; US DHHS 2001a*	*Cohn and Daro, 1987; Johnson, 2000 (placement reduces likelihood of subsequent maltreatment)*	

Table D: Studies Identifying Other Factors Affecting Recurrence

Factors	Recurrence		
	Greater Likelihood	Less Likelihood	Equal Likelihood
Other Factors			
Recent maltreatment	*DePanfilis, 1995; DePanfilis and Zuravin, 1999a; DePanfilis and Zuravin, 1999b; DePanfilis and Zuravin 2002; Fluke et al., 1999; Fryer and Miyoshi, 1994; Schuerman, Rzepnicki, and Littell, 1994*		
Recurrence tracked over longer periods of time	*DePanfilis, 1993; Herrenkohl, 1978; Johnson, 1994; Lutzker and Rice, 1987*		

Table E: Studies Identifying Interactions between Factors Affecting Recurrence

Factors	Recurrence		
	Greater Likelihood	Less Likelihood	Equal Likelihood
Interactions			
Presence of family stress and lack of social support	*DePanfilis and Zuravin, 1999b (while CPS active)*		
Size of family and average age of children under age 5	*Fluke et al., 2000*		
Female child age 0-6	*Fryer and Miyoshi, 1994*		
Younger child and perpetrator is a family member (vs. older child and perp is not a family member)	*Hamilton and Browne, 1999*		
Perpetrator's history of perpetration			
Same maltreatment type	*Way et al., 2001 (for neglect)*		
Different maltreatment type	*Way et al., 2001 (for physical abuse or sexual abuse); Hamilton and Browne, 1999*		
During services (vs. after Services)	*DePanfilis,1995; DePanfilis and Zuravin, 1999a; Herrenkohl et al., 1978; Zuravin and DePanfilis, 1996*		
After services (families with no CPS history)		*DePanfilis and Zuravin, 1999a; Zuravin and DePanfilis, 1996 (vs families with open case at time of first study report)*	
While CPS is active			*Zuravin and DePanfilis, 1996 (comparing first time maltreating families with already open cases); DePanfilis and Zuravin, 1999a*

Factors	Recurrence		
	Greater Likelihood	Less Likelihood	Equal Likelihood
Receipt of public assistance and perpetrator not abused as child (vs. perpetrator not abused with some earned income)	*Ferleger et al., 1988*		
Severe abuse and poor attendance at therapy appointments (vs severe abuse and good attendance at therapy appointments)	*Ferleger et al., 1988*		
Abuser never married and was not abused as a child (vs never married with history of abuse as a child)	*Ferleger et al., 1988*		
Younger caregiver and neglect (vs. abuse)	*Baird, 1988*		

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