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Illinois Child Endangerment Risk Assessment Protocol Evaluation: Impact on Short-term Recurrence Rates – Year Four

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ILLINOIS CHILD ENDANGERMENT RISK ASSESSMENT PROTOCOL EVALUATION: IMPACT ON SHORT-TERM RECURRENCE RATES – YEAR FOUR

The report analyzes the impact of CERAP implementation on the safety of children investigated by DCFS for abuse and/or neglect. Development of the CERAP was initiated in 1994 as a response to concerns about the immediate safety of children in homes under investigation. It consists of a focused system for assessing safety using empirically based factors found to correlate with risk of abuse and/or neglect and documents a safety plan for each child in the household. DCFS investigators are provided intensive training in the CERAP and must pass a certification exam demonstrating mastery of the protocol.

Safety is assessed using CANTS data and is defined in terms of the recurrence of an indicated report of maltreatment within 60 days of an initial report. The current analyses build upon the results of last year's report that found a significant reduction in short-term recurrence following implementation of the CERAP. Several alternative explanations for the reduction were assessed. One way to promote safety is to take children out of the home and place them in protective custody. However, the reduction found in previous reports was not attributable to an increase in the use of protective custody. Previous analyses also tested the possibility that the reduction could have been due to policy changes also implemented during the time period in which the CERAP began. One policy concerned substance-affected infants; the other policy involved risk of harm and/or inadequate supervision while in the care of a relative. Neither policy was related to reduced recurrence. Each of these policy-implementation explanations for the reduction seen in recurrence was tested with the most recent data and described in this report.

The first section of this report presents simple frequency counts of children who were the subjects of abuse and/or neglect reports. The second section presents an event-history analysis of changes in short-term maltreatment recurrence rates from the year before the first implementation of CERAP through the four years following implementation.

Section One: Comparison of Service Volumes

Four measures of service provision were compared for the year prior to implementation of the CERAP and for each of the four years since CERAP implementation. The four measures are:

1. Child Reports. This is the count of all children identified within an investigation. Because a child may be a member of multiple households in a given year and/or because a given household may be investigated multiple times in a given year, an individual child may be identified in more than one report in a given year. This is therefore a duplicated count of individual children. A total of 829,412 child reports were received in the five-year period.

2. Child Reports with an Allegation. A subset of the children in (1), this is the count of all children identified within an investigation who were alleged to be the victims of at least one incident of abuse and/or neglect. This too is a duplicated count of individual children as a given child could have multiple reports in a single year. Excluded are children named in a report (e.g., siblings, other relatives) who were members of the investigated household but who were not allegedly abused and/or neglected.

3. Child Reports with an Indicated Allegation. A subset of the children in (2), this is the count of all children identified within an investigation for whom at least one allegation of abuse and/or neglect was found to be substantiated or "indicated." Again, this is a duplicated count of individual children as a child may have more than one investigation in a given year.

4. Protective Custody Taken[1]. The fourth count is the number of children taken into protective custody (PC). Protective custody represents a preemptive placement of the child into temporary care before or during an investigation. Upon conclusion of the investigation, the child may be left in care or returned to the caretaker from whom the child was removed. Children can be held in PC for up to 48 hours. Because a child may have been the subject of multiple investigations in a given year, this is also a duplicated count of individual children

Table 1 presents counts for the four measures for the five-year period. Because implementation of the CERAP first occurred on December 1, 1995, the comparison years differ somewhat from either a calendar year or a fiscal year. The pre-implementation year includes all reports from December 1, 1994 through November 30, 1995; the first post-implementation year includes all reports from December 1, 1995 through November 30, 1996, the second includes all reports from December 1, 1996 through November 30, 1997, the third includes all reports from December 1, 1997 through November 30, 1998, and the fourth includes all reports from December 1, 1998 through November 30, 1999.

[1] Earlier versions of the report defined "protective custody" as placement into the child welfare system. These children were therefore thought to be at substantially lower risk of re-abuse/re-neglect because it was assumed that they had been removed from and did not reside in the investigated household during the 60-day and 120-day periods examined. While protective custody is an experience of sorts with the child welfare system, our discussions with staff of IDCFS suggests that the application and effects of protective custody are quite varied. About a quarter (27%) of children who are taken into protective custody are not subsequently placed into the child welfare system. Similarly, about a quarter (24%) of children who enter the child welfare system do so without having had protective custody. Moreover, in the previous report, no attempt was made to ascertain whether the date(s) of protective custody were associated in time with particular report date(s).

Table 1. Five-Year Trends in CANTS Child Reports

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
Total Child Reports	185,445	173,498	162,537	158,252	149,680
Child Reports with Allegations	133,861	124,207	115,541	111,163	104,876
Child Reports with Indicated Allegations	49,786	42,297	38,303	35,918	32,584
Children with Protective Custody Taken [a]	8,173	7,062	6,087	7,050	5,663

[a]Date(s) of protective custody are not necessarily associated in time with particular report date(s).

As Table 1 shows, all counts show an overall reduction in service volume as compared to the previous year:

- A 6% decrease in the number of total child reports from 1995 to 1996 and from 1996 to 1997, and a 2.6% decrease from 1997 to 1998 and from 1998 to 1999.
- A 7% decrease in the number of child reports with allegations from 1995 to 1996 and from 1996 to 1997, a 3.8% decrease from 1997 to 1998, and a 5.6% decrease from 1998 to 1999
- A 14% decrease in the number of child reports with indicated allegations from 1995 to 1996, a 9% decrease from 1996 to 1997, a 6% decrease from 1997 to 1998, and a 9% decrease from 1998 to 1999.
- A 14% reduction in the number of children taken into protective custody from 1995 to 1996 and from 1996 to 1997, a 16% *increase* from 1997 to 1998, and a 20% decrease from 1998 to 1999

However, considered as a *proportion* of total child reports and as a proportion of child reports with allegations, the changes over time in child reports with allegations and child reports with indicated allegations, respectively are smaller. The changes in these proportions are displayed in Table 2.

Table 2. Five-Year Percentage Changes

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
% Child Reports with Indicated Allegations of Total Child Reports	26.8%	24.4%	23.6%	22.7%	21.8%
% Child Reports with Indicated Allegations of Child Reports with Allegations	37.2%	34.1%	33.2%	32.3%	31.1%
% Children with Protective Custody Taken of Indicated Child Reports	16.4%	16.7%	15.9%	19.6%	17.4%

As Table 2 shows, the proportion of child reports with indicated allegations to both total child reports and child reports with allegations consistently decreased from 1995 through 1999. Some specific changes over the four years were:

- An 8% decrease in the proportion of child reports with indicated allegations to child reports with allegations in the period from 1995 to 1996, a 3% decrease from 1996 to 1997, a 3% decrease from 1997 to 1998 and a 3.7% decrease from 1998 to 1999. (Note: these percentage changes represent the percentage change in percentages, not the raw difference from one percentage to another.)

- A 2% increase in the proportion of children taken into protective custody of indicated child reports from 1995 to 1996, a 5% decrease from 1996 to 1997, a 23% increase from 1997 to 1998, and an 11% decrease from 1998 to 1999.

A one-way analysis of variance (ANOVA) was conducted to test if there was at least one significant decrease from year to year in the number of child reports with indicated allegations to child reports. The ANOVA showed a significant effect for year,

$F_{4,59} = 28.894$, $p \leq .05$. Post-hoc comparisons using the Scheffé test revealed the following significant differences ($p \leq 05$):

* There was a significant decrease in the proportion of child reports with indicated allegations to child reports with allegations from 1995 to 1996, from 1995 to 1997, from 1995 to 1998, and from 1995 to 1999.

* There was a significant decrease in the proportion of child reports with indicated allegations to child reports with allegations from 1996 to 1998 and from 1996 to 1999.

* There were no significant differences in the proportion of indicated allegations associated with a child taken into protective custody.

Tables 3 and 4 present the same basic counts and percentages presented in Tables 1 and 2 but only for the first report received on each child from December 1, 1994 through November 30, 1999. These tables therefore represent unduplicated counts for children under investigation during that time period. A report is counted not only if it represents the first recorded investigation of a household (defined as a Sequence A report in the CANTS database) but any subsequent investigation as long as it was the first investigation of that household to occur during the time period December 1, 1994 through November 30, 1999. To clarify, if a child was part of a Sequence A report dated on or after December 1, 1994, this report with this child would be counted in Table 3 and 4. If he or she had a Sequence A report before December 1, 1994 and a Sequence B report and a Sequence C report on or after December 1, 1994, the Sequence B report would be associated with this child for inclusion in Table 3 and Table 4 counts. The total number of children represented in reports during this five-year time period was 535,812.

Table 3. Five-Year Trends in CANTS Child Reports, First Reports During the Time Period Only

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
Total Children	141,347	112,932	100,237	93,543	87,753
Children with Allegations	100,476	79,589	69,967	64,753	60,486
Children with Indicated Allegations	35,623	25,542	21,622	19,309	17,984
Children with Protective Custody Taken[a]	5,277	3,845	3,160	3,477	2,823

[a]Date(s) of protective custody are not necessarily associated in time with particular report date(s).

As was true with the overall counts, counts of first reports in the time period have consistently decreased over the five years observed, showing:

- A 20% decrease from 1995 to 1996 in the number of children reported, an 11% decrease from 1996 to 1997, a 7% decrease from 1997 to 1998, and a 6% decrease from 1998 to 1999.
- A 21% decrease from 1995 to 1996 in the number of children with at least one allegation of maltreatment, a 12% decrease from 1996 to 1997, a 7% decrease from 1997 to 1998, and a 7% decrease from 1998 to 1999.
- A 28% decrease from 1995 to 1996 in the number of children with at least one indicated allegation of maltreatment, an 15% decrease from 1996 to 1997, an 11% decrease from 1997 to 1998, and a 7% decrease from 1998 to 1999.
- A 27% decrease from 1995 to 1996 in the number of children taken into protective custody, an 18% decrease from 1996 to 1997, a 10% increase from 1997 to 1998, and a 19% decrease from 1998 to 1999.

Table 4. Five-Year Percentage Changes, First Reports During the Time Period

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
% Children with Indicated Allegations of Total Child Reports	25.2%	22.6%	21.6%	20.6%	20.5%
% Children with Indicated Allegations of Child Reports with Allegations	35.4%	32.1%	30.9%	29.8%	29.7%
% Children with Protective Custody Taken of Indicated Reports	14.8%	15.1%	14.6%	18.0%	15.7%

The changes in the proportions for first reports in the time period December 1, 1994 through November 30, 1999 reveals:

* A 9% decrease in the proportion of children with indicated allegations to children with allegations in the period from 1995 to 1996, a 4% decrease from 1996 to 1997, a 4% decrease from 1997 to 1998 and a .34% decrease from 1998 to 1999.

* A 2% increase from 1995 to 1996 in the proportion of child reports with indicated allegations that were associated with children taken into protective custody, a 3% increase from 1996 to 1997, a 23% increase from 1997 to 1998, and a 13% increase from 1998 to 1999.

Finally, service volume was compared across the five years for children whose first ever report (that is, Sequence A) fell within the period December 1, 1994 through November 30, 1999. The total number of such children was 447,184. Tables 5 and 6 present service volumes and percentage changes for these children.

Table 5. Five-Year Trends in CANTS Child Reports, Sequence A Reports During the Time Period

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
Total Children	107,034	93,048	86,483	82,013	78,606
Children with Allegations	76,022	65,461	60,177	56,597	54,042
Children with Indicated Allegations	23,908	19,076	17,017	15,434	14,757
Children with Protective Custody Taken[a]	2,803	2,178	1,896	1,960	1,690

[a]Date(s) of protective custody are not necessarily associated in time with particular report date(s).

The changes in counts for children involved in Sequence A reports from December 1, 1994 through November 30, 1999 shows a steady decrease over the five years, in particular:

- A 13% decrease from 1995 to 1996 in the number of children reported, a 7% decrease from 1996 to 1997, a 5% decrease from 1997 to 1998, and a 4% decrease from 1998 to 1999.
- A 14% decrease from 1995 to 1996 in the number of children with at least one allegation of maltreatment, a 8% decrease from 1996 to 1997, a 6% decrease from 1997 to 1998, and a 5% decrease from 1998 to 1999.
- A 20% decrease from 1995 to 1996 in the number of children with at least one indicated allegation of maltreatment, an 11% decrease from 1996 to 1997, a 9% decrease from 1997 to 1998, and a 4 % decrease from 1998 to 1999.
- A 22% decrease from 1995 to 1996 in the number of children taken into protective custody, a 13% decrease from 1996 to 1997, a 3% increase from 1997 to 1998, and a 14% decrease from 1998 to 1999.

Table 6. Five-Year Percentage Changes, Sequence a Reports During the Time Period

	1995 (12/1/94–11/30/95)	**1996** (12/1/95–11/30/96)	**1997** (12/1/96–11/30/97)	**1998** (12/1/97–11/30/98)	**1999** (12/1/98–11/30/99)
% Children with Indicated Allegations of Total Child Reports	22.3%	20.5%	19.7%	18.8%	18.8%
% Children with Indicated Allegations of Child Reports with Allegations	31.5%	29.1%	28.3%	27.3%	27.3%
% Children with Protective Custody Taken of Indicated Child Report	11.7%	11.4%	11.1%	12.7%	11.5%

Changes in proportions for children with Sequence A reports show:

* An 8% decrease in the proportion of children with indicated allegations to children with allegations in the period from 1995 to 1996, a 3% decrease from 1996 to 1997, a 4% decrease from 1997 to 1998 and no decrease from 1998 to 1999.

* A 3% decrease from 1995 to 1996 in the proportion of child reports with indicated allegations that were associated with children taken into protective custody, a 3% decrease from 1996 to 1997, a 14% increase from 1997 to 1998, and a 9% increase from 1998 to 1999.

A one-way ANOVA was conducted to test the effect of year on number of indicated allegations, revealed a significant effect, ($F_{4,59} = 21.664$, $p \leq .05$). Post-hoc comparisons utilizing the Scheffé test indicated the following significant ($p \leq .05$) differences:

* There was a significant decrease in the proportion of child reports with indicated allegations to child reports with allegations from 1995 to 1996, from 1995 to 1997, from 1995 to 1998, and from 1995 to 1999.

* There was a significant decrease in the proportion of child reports with indicated allegations to child reports with allegations from 1996 to 1999.

* There were no significant differences in the proportion of indicated allegations associated with a child taken into protective custody.

Section Two: Recurrence Analysis

Short-term recurrence[2] rates decreased over the four years following implementation of the CERAP. Table 7 presents the recurrence rates for the 535,812 child cases that represent the first report in the five-year time period observed.

Table 7. 60-Day Recurrence for First Reports in Time Period

	Total	Number Recurrent[a]	Crude Rate	% Reduction From Prior Year
1995	141,347	3851	2.7%	
1996	112,932	2290	2.0%	25.9%
1997	100,237	1790	1.8%	10.0%
1998	93,543	1652[b]	1.8%[b]	0.0%
1999	87,753	1323[c]	1.5%[c]	16.7%

[a]The number recurrent is of children with an indicated report occurring within 60 days of their first report in the time period observed.
[b]Note that both the number recurrent and the crude rate in 1998 differ from those of the previous report. This is because the denominator, first reports, represents all first reports through November 30, 1998. Complete data for the numerator, number recurrent, representing recurrences on December 1, 1998 through January 29, 1999, was not available at the time of the previous report.
[c]Recurrence rates for 1999 are incomplete as data for December 1, 1999 through January 29, 2000 were not available.

[2] Strictly speaking, we are not necessarily measuring *recurrence*. Children in the initial baseline population may or may not have been the victims of maltreatment. They are simply the children in a given investigated household assessed via the CERAP. They may be or may not be part of an allegation in that household and that allegation may or may not be founded. More appropriately, this is a measure of investigated children who subsequently were abused or neglected.

The data representing first reports were further refined by selecting only the Sequence A reports and only the cases not associated with protective custody taken. Since the CERAP is targeted at the prevention of future maltreatment and children with multiple investigations have higher rates of recurrence than those in their first investigation, controlling for investigation number by selecting only Sequence A reports provides the clearest picture of the impact of CERAP implementation. Eliminating children with protective custody taken theoretically excludes from analysis those children who spent a portion of time out of the investigated (and CERAP evaluated) household[3]. These 436,657 children without protective custody and with Sequence A reports are the subject of the remainder of analyses presented. The 60-day recurrence rates during the five-year observation period for these children are presented in Table 8.

Table 8. 60-Day recurrence for Sequence A Reports in Time Period, Excluding Cases Associated with Protective Custody Taken

	Total	Number Recurrent[a]	Crude Rate	% Reduction From Prior Year
1995	104,231	2240	2.1%	
1996	90,870	1561	1.7%	19.0%
1997	84,587	1347	1.6%	5.9%
1998	80,053	1255[b]	1.6%[b]	0.0%
1999	76,916	1040[c]	1.4%[c]	12.5%

[a]The number recurrent is of children with an indicated report occurring within 60 days of their Sequence A report in the time period observed.
[b]Note that both the number recurrent and the crude rate in 1998 differ from those of the previous report. This is because the denominator, first reports, represents all first reports through November 30, 1998. Complete data for the numerator, number recurrent, representing recurrences on December 1, 1998 through January 29, 1999, was not available at the time of the previous report.
[c]Recurrence rates for 1999 are incomplete as data for December 1, 1999 through January 29, 2000 were not available.

[3] Because of questions regarding the inclusion or exclusion of protective custody cases from these recurrence analyses, separate analyses were conducted including cases associated with protective custody cases, excluding cases associated with protective custody, and including only those cases associated with protective custody having been taken. Analyses that included protective custody cases with total reports did not differ from those excluding protective custody cases. The crude recurrence rates and percentage reductions were the same whether protective custody cases were included or not.

As Table 8 shows, with the exception of 1998, for each year observed, there has been a reduction in the recurrence rates relative to the previous year. The overall reduction from pre-implementation to 1999, the fourth year post implementation, is 33.3%.

The five years are also compared using survival analysis, a time-series procedure that provides a continuous view of the likelihood of recurrence of a defined event within a defined period of observation. In this case, the defined event is an indicated report of maltreatment and the period of observation is the 60 days following that report. Figure 1 shows the survival curves (the proportion of children not experiencing an indicated re-report) and provides a visual representation of the manner in which recurrence rates have declined over the five years.

Table 9 presents Kaplan-Meier statistics for 60-day recurrences excluding protective custody cases. Results indicate, and all three test statistics concur, that between 1995 and 1996 and between 1996 and 1997, the rate of recurrence was significantly reduced at the conventionally-accepted, $p \leq .05$, level. The reductions between 1997 and 1998 and between 1998 and 1999 however, were not statistically significant.

A possible explanation for the observed reductions in short-term recurrence has to do with changes in Department policy put into place at the same time as the initial implementation of the CERAP. In order to rule out policy changes involving substance-affected infants and involving cases with only allegations of risk of harm/inadequate supervision with a relative caregiver as explanations, separate analyses were conducted, controlling for each of these possible causes. The first analysis was conducted on all Sequence A reports, excluding allegations involving substance affected infants. The second was conducted on all Sequence A reports, excluding all allegations involving risk of harm/inadequate supervision by a relative caretaker.

Figure 1. Survival Function - Sequence A Reports Excluding Cases Associated with Protective Custody Taken

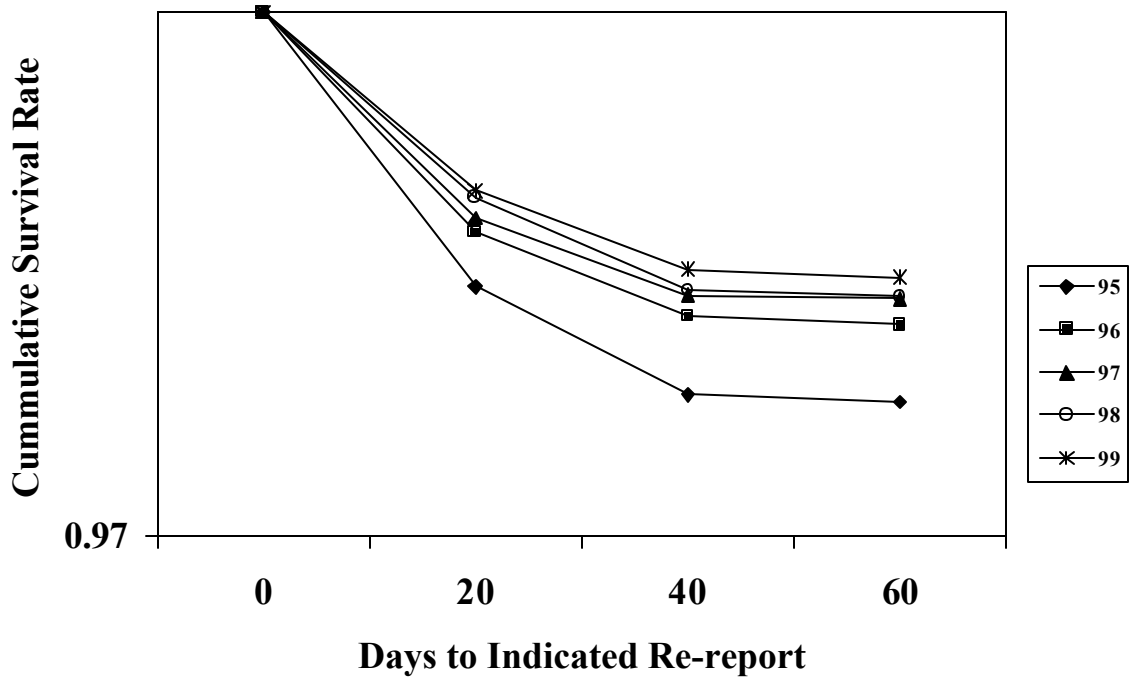


Table 9. Test Statistic (and Significance Levels) for Each Statistic Used in Kaplan-Meier Survival Analysis of 60-Day Recurrence for Sequence A Reports in Time Period Excluding Cases Associated with Protective Custody Taken

Statistic	1995–96 Change	1996–97 Change	1997–98 Change	1998–99 Change
Log Rank	48.41 (.0000)	4.20 (.0404)	.20 (.6544)	3.33 (.0681)
Breslow	48.66 (.0000)	4.03 (.0448)	.26 (.6096)	3.07 (.0797)
Tarone-Ware	49.54 (.0000)	4.11 (.0426)	.23 (.6318)	3.20 (.0736)

Tables 10 and 11 and Figure 2 present the results of the analyses on Sequence A reports in which allegations involving substance affected infants were excluded.

Table 10. 60-Day Recurrence for Sequence A Reports in Time Period, Excluding Cases Associated with Protective Custody Taken and Excluding Allegations Involving Substance Affected Infants

	Total	Number Recurrent[a]	Crude Rate	% Reduction From Prior Year
1995	102,906	2200	2.1%	
1996	84,831	1528	1.7%	19.0%
1997	83,711	1322	1.6%	5.9%
1998	79,308	1231[b]	1.6%[b]	0.0%
1999	76,286	1023[c]	1.3%[c]	18.8%

[a]The number recurrent is of children with an indicated report occurring within 60 days of their Sequence A report in the time period observed.

[b]Note that both the number recurrent and the crude rate in 1998 differ from those of the previous report. This is because the denominator, first reports, represents all first reports through November 30, 1998. Complete data for the numerator, number recurrent, representing recurrences on December 1, 1998 through January 29, 1999, was not available at the time of the previous report.

[c]Recurrence rates for 1999 are incomplete as data for December 1, 1999 through January 29, 2000 were not available.

Figure 2. Survival Function, Sequence A Reports Excluding Cases Associated with Protective Custody Taken and Excluding Allegations Involving Substance Affected Infants

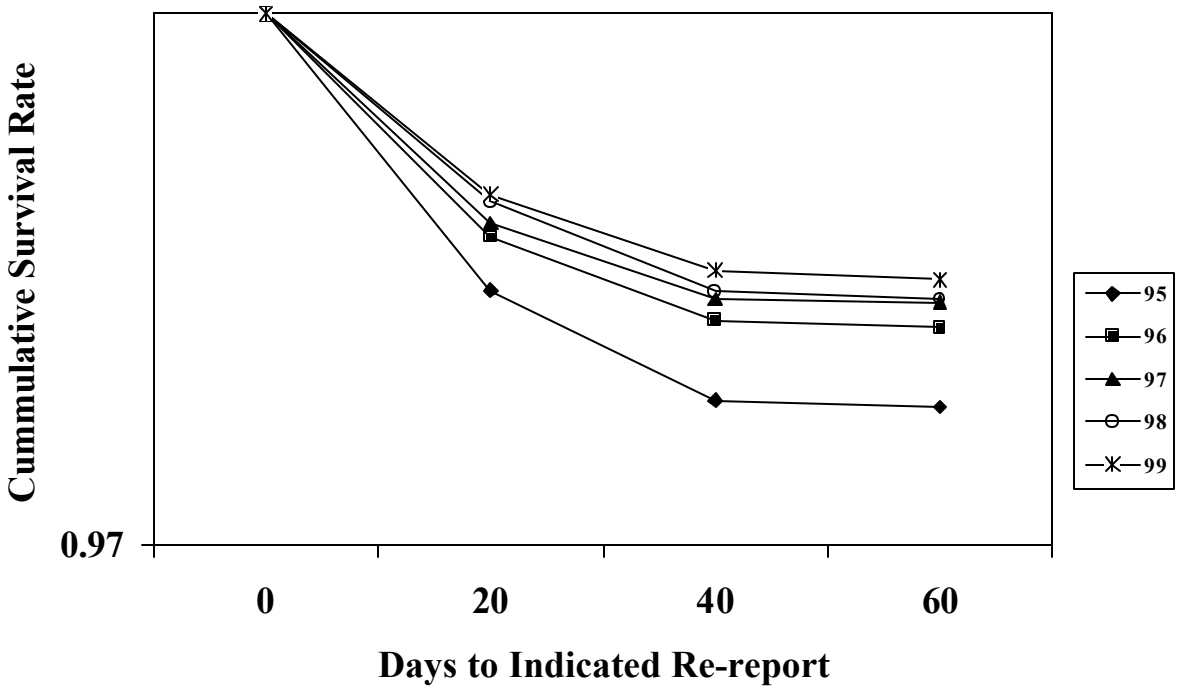


Table 11. Test Statistic (and Significance Levels) for Each Statistic Used in Kaplan-Meier Survival Analysis of 60-DayRecurrence for Sequence A Reports in Time Period, Excluding Cases Associated with Protective Custody Taken and Excluding Allegations Involving Substance Affected Infants

Statistic	1995–96 Change	1996–97 Change	1997–98 Change	1998–99 Change
Log Rank	49.93 (.0000)	3.95 (.0468)	.24 (.6274)	3.20 (.0737)
Breslow	49.59 (.0000)	3.78 (.0518)	.30 (.5841)	2.95 (.0858)
Tarone-Ware	49.50 (.0000)	3.87 (.0492)	.27 (.6055)	3.08 (.0795)

Results paralleled those in which allegations of substance affected infants were not excluded. As with Sequence A reports that did include allegations of substance affected infants, the present results indicate that between 1995 and 1996 and between 1996 and 1997, the rate of recurrence was significantly reduced ($p \leq .05$). The differences in recurrence rates between 1997 and 1998 and between 1998 and 1999 however, were not statistically significant. Thus, it does not appear that policy changes involving allegations of substance affected infants account for the observed reductions in recurrence.

Tables 12 and 13 and Figure 3 present the results of the analyses on Sequence A reports in which allegations involving risk of harm/inadequate supervision with relative caretakers were excluded.

Figure 3. Survival Function
Sequence A Reports, Excluding Allegations of Risk of Harm or Inadequate Supervision with Relative Caregiver

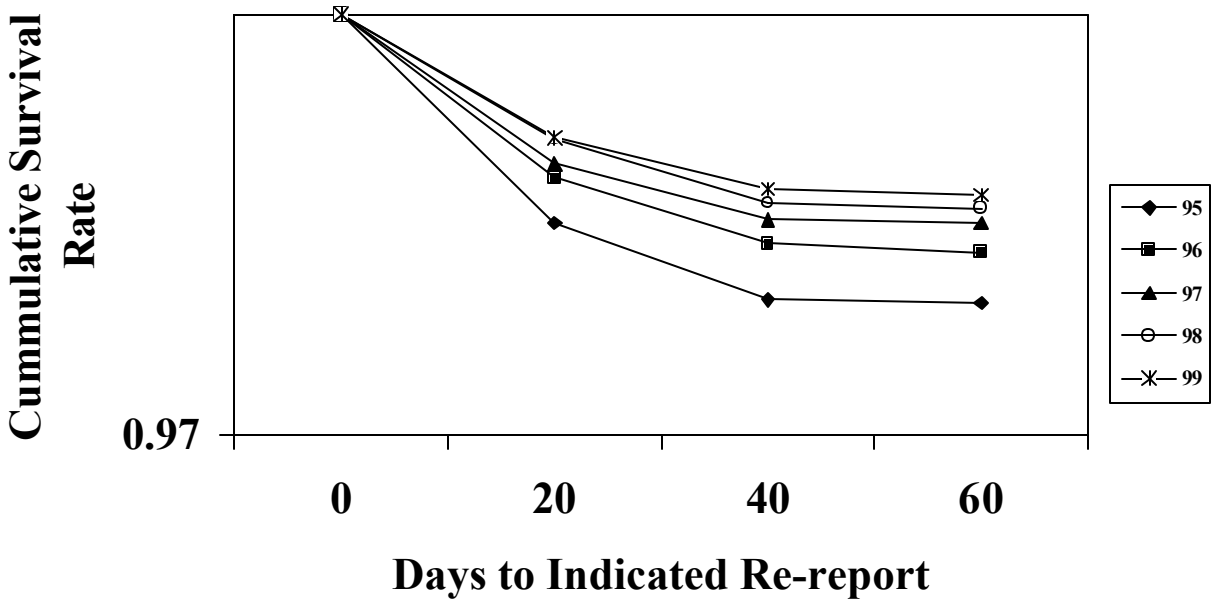


Table 12. 60-Day Recurrence for Sequence A Reports in Time Period, Excluding Cases Associated with Protective Custody Taken and Excluding Allegations Involving Risk of Harm/Inadequate Supervision by Relative Caretaker

	Total	Number Recurrent[a]	Crude Rate	% Reduction From Prior Year
1995	73,596	1467	2.0%	
1996	65,007	1055	1.6%	20.0%
1997	60,081	868	1.4%	12.5%
1998	56,943	761[b]	1.3%[b]	7.1%
1999	54,786	631[c]	1.2%[c]	7.7%

[a]The number recurrent is of children with an indicated report occurring within 60 days of their Sequence A report in the time period observed.

[b]Note that both the number recurrent and the crude rate in 1998 differ from those of the previous report. This is because the denominator, first reports, represents all first reports through November 30, 1998. Complete data for the numerator, number recurrent, representing recurrences on December 1, 1998 through January 29, 1999, was not available at the time of the previous report.

[c]Recurrence rates for 1999 are incomplete as data for December 1, 1999 through January 29, 2000 were not available.

Table 13. Test Statistic (and Significance Levels) for Each Statistic Used in Kaplan-Meier Survival Analysis of 60-Day Recurrence for Sequence A Reports in Time Periods, Excluding Cases Associated with Protective custody taken and Excluding Allegations Involving Risk of Harm/Inadequate Supervision by Relative Caretaker

Statistic	1995–96 Change	1996–97 Change	1997–98 Change	1998–99 Change
Log Rank	27.41 (.0000)	6.43 (.0112)	2.61 (.1065)	1.96 (.1619)
Breslow	27.97 (.0000)	6.09 (.0136)	.2.86 (.0909)	1.71 (.1915)
Tarone-Ware	27.70 (.0000)	6.26 (.0123)	2.73 (.0985)	1.83 (.1761)

Comparing figures in Table 12 to those in Figure 3 (Sequence A reports *including* allegations involving risk of harm/inadequate supervision by relative caretaker), recurrence rates are slightly lower each year. However, the same pattern of differences is obtained. As with Sequence A reports that did include allegations involving risk of harm/inadequate supervision by relative caretaker, the present results indicate that between 1995 and 1996 and between 1996 and 1997, the rate of recurrence was significantly reduced ($p \leq .05$). The differences in recurrence between 1997 and 1998 and between 1998 and 1999 however, were not statistically significant. Thus, it does not appear that policy changes pertaining to allegations involving risk of harm/inadequate supervision by relative caretaker account for the observed reductions in recurrence.

To assess whether yearly differences in the reductions of short-term recurrence rates remain significant at 120 days post report, a 120-day survival analysis was conducted. Results are presented in Tables 14 and 15 and Figure 4.

Table 14. 120-Day Recurrence for Sequence A Reports in Time Period Excluding Cases Associated with Protective Custody Taken

	Total	Number Recurrent[a]	Crude Rate	% Reduction From Prior Year
1995	104,231	3343	3.2%	
1996	90,870	2402	2.6%	18.8%
1997	84,587	1996	2.4%	7.7%
1998	80,053	1908[b]	2.4%[b]	0.0%
1999	76,916	1568[c]	2.0%[c]	16.7%

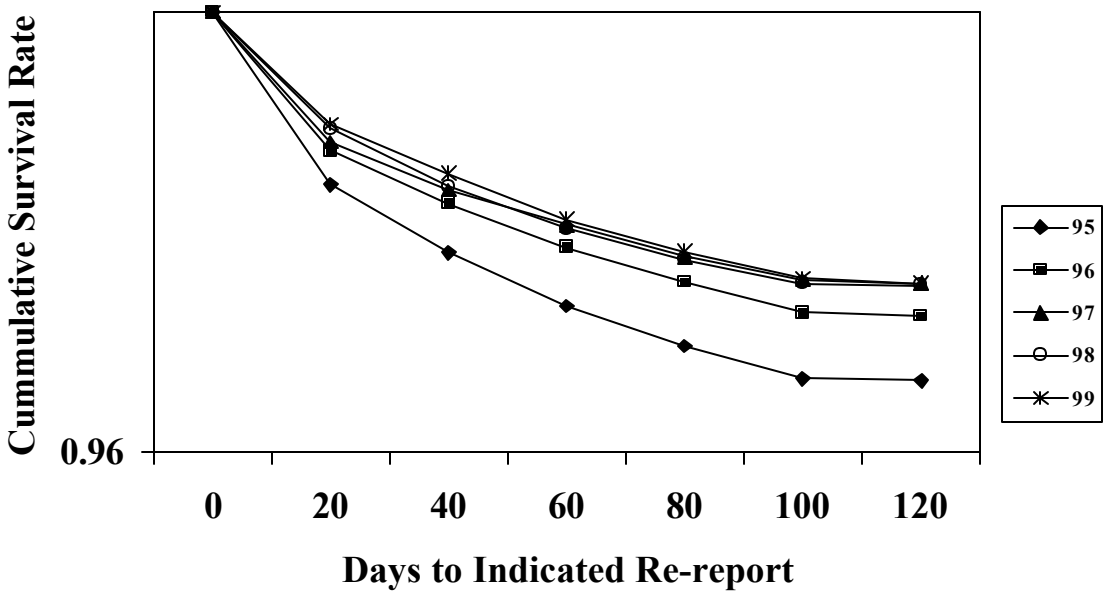
[a]The number recurrent is of children with an indicated report occurring within 120 days of their Sequence A report in the time period observed.
[b]Note that both the number recurrent and the crude rate in 1998 differ from those of the previous report. This is because the denominator, first reports, represents all first reports through November 30, 1998. Complete data for the numerator, number recurrent, representing recurrences on December 1, 1998 through March 30, 1999, was not available at the time of the previous report.
[c]Recurrence rates for 1999 are incomplete as data for December 1, 1999 through March 29, 2000 were not available.

Table 15. Test Statistic (and Significance Levels) for Each Statistic Used in Kaplan-Meier Survival Analysis of 120-Day Recurrence for Sequence A Reports in Time Period Excluding Cases Associated with Protective Custody Taken

Statistic	1995–96 Change	1996–97 Change	1997–98 Change	1998–99 Change
Log Rank	56.50 (.0000)	14.52 (.0001)	.07 (.7942)	.31 (.5748)
Breslow	57.41 (.0000)	13.89 (.0002)	.04 (.8486)	.44 (.5067)
Tarone-Ware	56.97 (.0000)	14.21 (.0002)	.05 (.8212)	.38 (.5385)

As Table 14 shows, the crude recurrence rates are noticeable greater when compared to the 60-day recurrence rate for the same population. However, the pattern of differences in recurrence rates remains the same as for 60-day recurrences. Kaplan-Meier test statistics consistently show that between 1995 and 1996 and between 1996 and 1997, the rate of recurrence was significantly reduced ($p \leq .05$ level), but the reductions between 1997 and 1998 and between 1998 and 1999 were not statistically significant.

Figure 4. Survival Function to 120 Days
Sequence A Reports



SUMMARY

Results of a four-year follow-up of the impact of the Child Endangerment Risk Assessment Protocol indicate that 60-day and 120-day recurrence of maltreatment for at-risk children was significantly lower in the year immediately following initial implementation of the CERAP (1996) as compared to the year immediately preceding first implementation (1995) and in the second year following implementation (1997), as compared to the first year after implementation. However, comparisons between 1997 and 1998 and between 1998 and 1999 revealed no statistically significant year-to-following-year reductions. For 60-day recurrence rates, the same pattern of results was found when controlling for policy changes coincident with first CERAP implementation. These policy changes were thus ruled out as possible alternative explanations in the observed reductions in recurrence rates.

Note that the results presented in this update of the CERAP Outcome Evaluation differ somewhat from the previous report. The previous report showed significant reductions from 1997 to 1998; we found no such reduction. This was due to the inclusion of recurrence data for 1998 investigations that were not available at the time of the last report.

APPENDIX

As part of the agreement in taking over the CERAP Outcomes Analysis, we were asked to critique the original analysis and to prepare a written outline of conceptual and analytic issues that should be addressed in subsequent analyses. The issues as we see them are outlined below:

DATASET. For this set of analyses and the two preceding it, the Information and Systems Division (ISD) of the Department provided special pulls of data from the Child and Abuse and Neglect Tracking System (CANTS). Because we have the same data elements in the Integrated Database at the CFRC, we are familiar with the database, and have the data readily available in formatted SAS datasets, we propose to use this source of the same data. Moreover, the Integrated Database gives us access to additional variables that may be used as breakdowns or covariates, including region data. Furthermore, the probabilistic link incorporated in the Integrated Database gives us access to children's placement histories. Finally, we would have easy access to recurrence information both 60 and 120 days after reports so that we could have complete data for the last year analyzed.

TIME FRAME. A fair test of the effects of the CERAP should look at the overall service volumes and recurrence over a longer time frame that is currently presented. At minimum, we propose to look back the same number of years pre-CERAP as we currently look at post-CERAP. The strategy would be to compare the overall curve to both the pre- and post- CERAP curves. This is the best approach given that we do not have a control group who did not/ do not receive the CERAP.

PROTECTIVE CUSTODY. We propose dropping protective custody as (1) a measure of service volume and (2) as a "control" for children in custody of the Department and in substitute care. Earlier versions of the report defined "protective

custody" as placement into the child welfare system. These children were therefore thought to be at substantially lower risk of re-abuse/re-neglect because it was assumed that they had been removed from and did not reside in the investigated household during the 60-day and 120-day periods examined. While protective custody is an experience of sorts with the child welfare system, our discussions with staff of IDCFS suggests that the application and effects of protective custody are quite varied. About a quarter (27%) of children who are taken into protective custody are not subsequently placed into the child welfare system. Similarly, about a quarter (24%) of children who enter the child welfare system do so without having had protective custody. Moreover, in the previous report, no attempt was made to ascertain whether the date(s) of protective custody were associated in time with particular report date(s).

Because of these issues regarding the meaning of protective custody vis-a- vis recurrence, we conducted separate analyses *including* protective custody cases and for protective custody cases *alone*. Analyses that included protective custody cases with total reports did not differ from those excluding protective custody cases. The crude recurrence rates and percentage reductions were the same whether protective custody cases were included or not. However, results from analyses conducted only on cases with protective custody revealed that these children had substantially higher rates of recurrence than did children without protective custody. Thus, the use of protective custody even as a proxy measure for time spent in care of the child welfare system is inappropriate.

POLICY COVARIATES. Two policy initiatives coincident with first implementation of the CERAP were controlled for in current analyses to determine if either or both could explain any effects of the CERAP in terms of recurrence. The two initiatives, having to do with substance affected infants and harm/inadequate supervision by a relative caretaker, were not described in detail in the original analyses nor was the justification for their effects on recurrence explained. We propose to do both as well as

to include any other policy changes that might explain differences in recurrence rates before and after the CERAP was first implemented.

SPECIFIC ANALYTIC ISSUE – ANOVA**.** In the context of comparing proportions of children indicated across years, the original analysts chose to use a one-way analysis of variance (ANOVA). We would first question why an ANOVA or any other inferential statistic is needed given that we have the population(s) at hand, second question why an ANOVA was conducted when the data were frequency data, and third question their approach – using the number of indicated reports per month per year as the unit of observation.

SURVIVAL ANALYSIS. Our approach to the survival analysis would be considerably different to the approach taken by the original analysts. We propose employing the Cox regression method, which allows for the assessment of different covariates on the probability of recurrence at a given point in time. Rather than simply excluding possible alternative predictors, covariates are entered into the predictive model, allowing for examination of separate effects. Covariates that we would include, but may not be limited to are: (1) policy changes such as those described above; (2) maltreatment and maltreatment history characteristics including (a) whether the child was allegedly maltreated; (b) whether the investigation was founded or unfounded; (c) the severity of the abuse/neglect; (d) the "globality" of the abuse/neglect, e.g., how many different types of maltreatment were alleged, by how many perpetrators, and the likelihood that those perpetrators will remain in the household; and (e) whether the child was part of one or more previous investigations or reports; (3) child characteristics; and (4) perpetrator characteristics; (5) investigator characteristics; and (6) placement history before and after the investigation in question.

QUANTITATIVE MEASUREMENT OF THE CERAP. Depending upon availability of coded CERAP forms and/or time and monetary resources, we propose to examine how quantitative differences in the CERAP rather than simple implementation relates to recurrence. This itself can be entered into the Cox regression as a covariate.