Evaluation of Oregon's Relief Nursery Program: 2005-2006

FINAL REPORT

Submitted to:

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Relief Nursery Program: 2005-2006

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ACKNOWLEDGEMENTS

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EXECUTIVE SUMMARY

T he Oregon Commission on Children and Families (OCCF) contracted with NPC Research to conduct the fiscal year (FY) 2005-2006 evaluation of Relief Nursery Programs. Relief Nurseries serve families in Albany, Bend, Cottage Grove, Eugene, Medford, Portland, Roseburg, and Salem. According to data provided to NPC Research by the Nurseries, over 600 families participated in the Nursery programs during fiscal year 2005-2006.

Relief Nurseries provide core services to high-risk families, and outreach services based on community needs. Core services include therapeutic early childhood services (and related services such as food and transportation), home visits, parent education classes, respite care, and alcohol and drug recovery support. Relief Nurseries demonstrate positive outcomes for families, including improving daily family functioning and the quality of parent-child interactions, and reducing overall risk.

Relief Nurseries Improve Daily Family Functioning and Parent-Child Interactions

The evaluation of Relief Nurseries included measures of two key areas of parenting quality. The first, family functioning, includes topics such as the presence of consistent daily routines, the family's ability to handle these routines, and the availability of positive social support. The second measures the quality of parent-child interactions, specifically, whether or not the parent expresses warmth and love, shows sensitivity and responsiveness to the child, uses firm, effective guidance, and creates a developmentally supportive learning environment.

Results found that after only 6 months of involvement in Relief Nursery services, participants significantly improved both their overall family functioning and the quality of their parent-child interactions. Overall, after 6 months in the program:

- The number of families demonstrating positive family functioning increased from 36% to 78%

- The number of families demonstrating positive parent-child interactions increased from 46% to 78%

Relief Nurseries Decrease Overall Family Risk

At program entry, families are screened using a detailed 65-item risk assessment tool that includes such issues as child welfare and foster care involvement, mental and physical health, poverty, and criminality. This evaluation found that Relief Nursery families are at very high risk at program entry:

- 100% of the families served by Relief Nurseries had at least 8 risk factors

- 75% of the families had 19 or more risk factors.

The average number of risk factors per family at program entry was 17. This indicates a very high level of risk. However, when assessed again at program exit, families showed a significant reduction in their number of risk factors, lowering risk by an average of two mutable risk factors per family[1]. Further, results found that the greater the level of risk reduction for families, the less likely it was that children would be involved in child welfare or placed in foster care homes subsequent to Relief Nursery participation. Specifically:

- For every two risk factors reduced over time, the risk of maltreatment was cut in half.

Both of these findings imply potential benefits for families as well as potential cost savings for taxpayers.

Summary and Recommendations

The findings from this evaluation highlight the success of the Relief Nurseries in improving the quality of parenting among these high-risk parents. Moreover, Relief Nurseries are successfully accomplishing the challenging task of reducing family risk factors. These findings are especially important in light of the documented relationship between risk reduction and reduced likelihood of subsequent child welfare involvement. These results suggest the importance of continued support for the core services provided by the Relief Nurseries.

While these results are encouraging, it should be noted that problems with the available data hindered the ability of the evaluation to document a broader array of outcomes, or to track outcomes for a longer period of time. While Relief Nurseries have worked over the past year to develop more consistency in defining shared outcomes and collecting complete and accurate data, without infrastructure support for data quality control and data management, it is difficult for multi-site, individualized programs like the Relief Nurseries to implement adequate data collection systems. Thus, a primary recommendation from this evaluation effort is to improve the quality of cross-site data collection and management. Ideally, an evaluation system would be developed that would capture the important cross-site process and outcome information, would allow Nurseries easy access to information, and which would include adequate staff time for data processing and data management. Improvements in data systems would benefit programs by allowing future evaluations to better document the important work that is being done by the Relief Nurseries.

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[1] The risk factor checklist includes 24 non-mutable risk factors and 38 mutable risk factors.

REPORT OVERVIEW

T his report presents the findings from the 2005-2006 fiscal year (FY) evaluation of Oregon's Relief Nursery Program. NPC Research was contracted to provide evaluation services to the Oregon Commission on Children and Families. This evaluation had four main objectives: (1) Coordinate Relief Nursery data delivery; (2) Describe the Relief Nursery population served during this fiscal year; (3) Examine program outcomes for this population; and (4) Make recommendations for future evaluation activities. The over-arching goal was to provide information integral to ongoing Relief Nursery program planning and accountability. In this report we provide a brief description of the program's history and implementation, and an overview of the evaluation. Following this overview a detailed description of the program outcomes is provided. This report concludes with a summary of the outcomes, highlighting implications and recommendations for future evaluation data collection and reporting infrastructure.

PROGRAM HISTORY AND IMPLEMENTATION

T he Oregon Relief Nursery program began in 1976 in Eugene, Oregon. The program was developed to address the needs of low-income families whose young children were at risk for abuse or neglect. Although other Nurseries developed over the next few decades, expansion of the Relief Nursery Model occurred primarily during 2000-2005. Growth in the model was facilitated by Oregon Senate Bill 555, which provided funds for model dissemination. Presently, the Oregon Commission on Children and Families (OCCF) provides support through local commission offices to Nurseries in Albany, Bend, Cottage Grove, Eugene, Medford, Portland, Roseburg, and Salem.

The stated goal of the Relief Nursery model is: "To stop the cycle of child abuse and neglect through intervention that strengthens parents, builds successful and resilient children, and preserves families by offering comprehensive and integrated support services." (www.occf.gov). Relief Nurseries accomplish this by providing comprehensive family services to children under the age of six and their families who experience numerous risk factors due to abuse and neglect. Relief Nursery services are voluntary and may include:

1. Parent education

2. Family preservation

3. Mental health services

4. Substance abuse assessment, counseling, and support

5. Criminal involvement prevention

6. Special education

7. Advocacy services

Families engaged with these services participate in the Therapeutic Early Childhood Program, or "Core Services." Nurseries also serve families through community outreach services. Relief Nursery programs are based on nationally recognized standards for best practices in early childhood education and family support. Relief Nurseries play a pivotal role in serving at-risk families with young children, and work closely with other programs such as Healthy Start, Early Intervention for Special Needs Children, and Head Start to address the needs of these families.

GOALS AND PURPOSE OF THE EVALUATION

T he Scope of Work for the 2005-2006 evaluation included 4 tasks: (1) Establish data sharing and Institutional Review Board (IRB) agreements; (2) Collect and aggregate data for all 9 Nursery programs; (3) Develop an analysis plan; and (4) Produce a final report. Each of these tasks is described below.

Establish Data–sharing and Institutional Review Board (IRB) Agreements

To facilitate data sharing both with the Relief Nurseries and to allow NPC to access child welfare records kept by the Department of Human services, NPC obtained Institutional Review Board (IRB) approval from the Portland State University Human Subjects Review Board. This approval verifies that all data collection, analysis and reporting protocols protect confidentiality of the Nursery participants. Moreover, NPC obtained a Health Insurance Portability and Accountability Act (HIPAA) waiver of authorization. HIPAA legislation includes provisions for a waiver of individual authorization for the release of confidential information for research projects that demonstrate both that human subject protection protocols are in place and that the research could not be completed without the waiver. Both of these conditions applied in the current research, as many of the Nursery participants were no longer receiving services, and obtaining informed consent from these parents for information sharing would not have been feasible. A copy of the HIPAA waiver and IRB approval were sent to each Nursery for their records. These protections authorized NPC Research to obtain data from each Nursery. Secure data delivery and data sharing protocols were implemented at each Nursery and included password-protected electronic file submission. Despite these protections, one Nursery declined to provide identifying information to NPC. Thus, this Nursery was not included in the child welfare data request, and therefore is missing from the Child and Family Services (CAFS) analyses.

Collect and Aggregate Data

The second task for NPC was to compile information that is collected by the Nurseries, specifically: Family Intake and Update forms, and Risk Factor Checklist data, as well as obtain child welfare data from the Oregon Department of Human Services (DHS) Child and Family Services office (CAFS). To collect Nursery data NPC Research interviewed each Relief Nursery director, and other appropriate staff, to gather information about the program's local data system. Then NPC obtained either electronic or paper copy data from each Nursery, including copies of the Semi-Annual Monitoring Report forms. Electronic data were merged into the statistical software program SPSS version 14; these data were cleaned and variables constructed for analysis. Paper copy data were also cleaned and entered into SPSS prior to analysis.

While all 9 Nurseries provided data for the evaluation, data availability was not consistent across the Nurseries. Specifically, only 4 of the 9 Nurseries provided data electronically, thus the majority of data available were in paper form. Each of the 4 electronic databases was strikingly different from the other. These differences provided a myriad of

challenges for the evaluation including, but not limited to, missing and incomplete data in the final cross-Nursery dataset. There were a number of differences in form versions that complicated data entry and merging. Finally, there appeared to be a great deal of missing data at the individual level. Risk Factor Checklists at program entry were the most consistently available form, with at least some of this data available for most participants. Recommendations for addressing these challenges are provided in the recommendations section of this report.

To obtain CAFS data, NPC Research entered into a data sharing confidentiality agreement with DHS (see above). NPC Research provided a unique ID number for each child served through the Relief Nurseries during the FY 2005-2006 study window. NPC linked these ID numbers with key identifying information such as child's first and last name, parent names, child date of birth, child race/ethnicity, and county of residence to ensure accurate matching with CAFS data systems. This dataset was then security protected, and provided to CAFS data analysts. CAFS staff matched the individuals in this dataset to information about maltreatment reports and foster care services, and returned this information to NPC.

Develop Data Analysis Plan

The third task for the evaluation was to develop and implement a data analysis plan, and ultimatly to produce a final report (the fourth task). In collaboration with the OCCF, NPC Research developed an analysis plan for the 2007 Legislative Session and for this report. The original analysis plan (Appendix A) was modified extensively because of problems with missing and incomplete data. The results below document the final series of analyses that NPC was able to conduct.

RESULTS

T his section of the report contains a description of the analysis plan for this evaluation and the results from the analyses conducted, including both: (1) Descriptive analysis of program participant characteristics, and (2) Outcomes analysis. Data available for this evaluation included Relief Nursery Family Intake and Update Form data, Risk Factor Checklist data, and Semi-Annual Monitoring Report data. These forms provided both the descriptive and outcome data for this evaluation. CAFS data were used to examine child welfare involvement subsequent to program entry.

Participant Characteristics

Families involved with services from July 1, 2005, to July 1, 2006, were included in the evaluation. Program participant (parent and child) characteristics are provided in Table 1. This table includes up to 606 families, based on the number of Risk Factor Checklist forms and Semi-Annual Monitoring Reports received. A subset of these families (339 parents and 472 children) also had information available from the Family and Child Intake Forms. According to the Semi-Annual Reports received by NPC Research, 511 families participated in Core services during the study period, and 563 families participated in Outreach services. The characteristics presented below clearly demonstrate that Nurseries are serving families who are at high demographic and family risk for poor child outcomes and potential child welfare involvement.

Table 1. Participant Characteristics

Parent and family characteristics	Percentage of participants
Primary Caregiver Race/Ethnicity (n=339):	
African American	3%
Asian American	4%
Caucasian	60%
Hispanic	28%
Other	5%
Families with a parent aged 17 or younger (n=339)	5%
Single Parent Families (n=339)	44%
Families whose children present at least one diagnosed disability (n=339)	50%
Families at or below the poverty level (n=339)	66%
Families presenting risk factors (n=339)	100%
Families presenting 19 or more risk factors at program entry indicating higher risk (n=339)	75%
Average number of risk factors at program entry (n=606)	17
Child Characteristics	
Average age of child (n=472)	4
Average number of children per family (n=339)	1.5

Sample Characteristics

Table 2 below provides an overview of the sample available to the evaluation for analysis. Noteworthy are the relatively large percentage of families who either leave the program before follow-up data are collected, or for whom follow-up data were not collected and/or submitted for evaluation. The lack of follow-up data was a significant challenge for the evaluation in terms of the ability to analyze outcomes over time. For this reason, outcome analyses are only on a subset of families.

Table 2. Sample Size Summary

Total Families Receiving Risk Intake	606
Total Families Receiving Risk Exit	314
Total Families Receiving Family Intake	339
Percent with a 6-month follow-up	183 (54% of baseline)
Percent with a 12-month follow-up	92 (27% of baseline)
Percent with an 18-month follow-up	20 (6% of baseline)
Total Children Receiving Child Intake	472
Percent with a 6-month follow-up	202 (43% of baseline)
Percent with a 12-month follow-up	124 (20% of baseline)
Percent with an 18-month follow-up	68 (14% of baseline)

Note: Twenty percent (20%) of the Family Intake and Update Forms were missing information about which follow-up period was being collected (e.g., 6-, 12-, or 18-month). These forms were not included in the change over time analysis.

Outcome Analysis Strategy

Originally, the analysis plan called for a detailed examination of individual family level improvement at multiple points in time (e.g., from program entry to 6 months post program entry; program entry to 12 months; program entry to 18 months, and program entry to 24 months, etc.). Moreover, analyses relating program engagement, length of stay, and types of services received to family and child outcomes were also planned. However, large amounts of data, especially follow-up data, were missing as shown in Table 2. Thus, outcome analyses were limited to examining change over time from program entry to 6 months and program entry to 12 months on each of the following outcomes:

Family Outcomes:
1. **Risk reduction**. Families are screened using a 62-item risk assessment tool at program entry and exit. This risk assessment includes both mutable (changeable) and non-mutable (non-changeable) risk factors. Examples of non-mutable risk factors include prior involvement with criminal justice or with child welfare. Changeable risk factors include serious domestic, health, and economic factors such as poverty, child welfare involvement, foster care involvement, criminal justice involvement, and depression. The average number of family risk factors at entry and exit were compared for each family.

2. **Increasing strengths**. A 9-item scale was created to measure strengths, as perceived by the Relief Nursery workers Item examples include: "Parent has an optimistic outlook on life", "Parent has a sense of humor", and "Parent copes effectively with stress". Each parent is rated by workers on a 5-point scale from '0' = no to '4' = almost always. For this report data on the primary parent only are provided.

3. **Improving daily family functioning**. NPC collapsed the following items to create a scale reflecting general family functioning. The scale items are rated by the Nursery worker, and include: "The family has consistent daily routines" "The family handles routines", and "The family has positive social support".

4. **Increased engagement with services**. This 4-item scale measures the worker's perceptions of the families engagement in services by asking how frequently the family: (1) Engages actively in home visit discussion and activities, (2) Seems interested in advice and suggestions, (3) Keeps appointments, and (4) Calls to reschedule appointments.

5. **Increased reading to children**. This single item outcome measure uses a 5 point scale '0' = not at this time and '4' = almost always and asks whether the family "reads to the child for at least 15 minutes every day"

6. **Improved overall family health.** The question applied to this outcome measure asks: "How would you rate the family's health, overall?" Poor, Fair, Good, or Very Good?

7. **Safe housing**. Using a 5 point scale '0'= not at this time and 4 = almost always, this 2-item scale refers to whether the family's home is safe on the inside and outside.

8. **Poverty risk reduction**. To measure poverty we used the mutable risk factor item: "Household income falls below that listed in the 100% column of the Federal Poverty Level tables" (yes/no). Workers record family income and family size, and use that information to calculate family poverty for each family.

9. **Reduced foster care use risk**. The risk factor item "one or more children in the family are in foster care" was used to measure foster care use as an outcome. Also, CAFS data were used to examine the average number of days spent in foster care by Nursery served children subsequent to their program enrollment.

10. **Reduced child welfare involvement risk**. This outcome was measured using the risk factor item that asks whether there is physical or emotional abuse occurring in the home (either reported by parents to the worker, or based on workers' knowledge of an open CPS case). CAFS data were used to examine the percent of new founded referrals post Nursery program entry.

Child Outcomes. The following outcomes were used to examine individual child outcomes:

1. **Increased immunization rates**. Immunization status is measured by asking: "Are the child's immunizations up-to-date?" (Yes or No).

2. **Developmental Status** as measured by the Ages and Stages Questionnaire (ASQ). This outcome measure examines whether the child's developmental status on the ASQ developmental screening is normal or whether there are delays indicated.

3. **ASQ social/emotional status.** This component of the Ages and Stages Questionnaire provides a detailed assessment of the child's social and emotional

developmental status. Similar to the above, this outcome measure examines whether the child's screening is normal or whether there are delays indicated.

4. **Improved parent-child interactions.** This 8-item scale includes the following items, rated on a scale from '0' = not at this time to '4' = 'almost always' by the worker:

   1. Enjoys child and expresses warmth and love

   2. Shows sensitivity to child's feelings, needs, interests

   3. Uses effective, firm, but loving guidance

   4. Responds appropriately to child's behavior and needs

   5. Adjusts environment and responses to child's temperament and needs

   6. Engages in reciprocal interactions, conversations, play involving taking turns

   7. Provides encouragement (both verbal and non-verbal support) for developmental advances

   8. Creates a developmentally appropriate learning environment for the child.

Table 3 below describes the status of families on these outcomes at program entry, and at the 6-month follow-up. It is very important to note that these results **do not look at changes over time** for individuals, but rather for two different groups of parents: (1) Families that received a baseline Family Intake Form; and (2) Families that received a 6-month follow-up. Although the two groups are not directly comparable, it is clear that families remaining in the program at the time of the 6-month follow-up do appear to have fewer risk factors than those who were assessed at program entry.

Table 3. Family Status at Program Entry and at 6-Month Follow-up

Outcome	Percent at program entry	Percent at 6 months
Percent of families with 19 or more risks	75% (n=606)	57% (n=314)
Percent of families with more than an average number of 4 strengths	50% (n=241)	65% (n=57)
Percent of families with positive daily family functioning	46% (n=288)	70% (n=178)
Percent of families with positive engagement with services	58% (n=339)	63% (N=183)
Percent of families who regularly read to their children	45% (n=276)	50% (n=141)
Percent of families with good or very good overall family health	91% (n=240)	95% (n=97)
Percent of families with safe housing	38% (n=339)	39% (n=183)
Percent of families at risk: poverty	66% (n=262)	34% (n=144)
Percent of families at risk: foster care	46% (n=163)	7% (n=123)
Percent of families at risk: child welfare involvement	48% (n=184)	12% (n=124)
Percent of children immunized	80% (n=472)	100% (n=202)
Percent of children with ASQ Developmental Status delayed	28% (n=472)	29% (n=202)
Percent of children with ASQ Social Status delayed	25% (n=472)	24% (n=202)
Percent of children with positive parent-child interactions	50% (n=356)	71% (n=188)

Changes Over Time

To examine whether individual families improve over time, paired sample t-tests and chi-square analyses were conducted to evaluate change from program entry to the 6-month follow-up for each of the outcomes described above.

FAMILY LEVEL OUTCOMES

Results found that after 6 months in the Relief Nursery, families showed significant improvement in their daily family functioning. Specifically, we found that in just 6 months the percentage of families reporting positive daily family functioning increased from 36% at program entry to 78% at 6 months post program entry. Detailed results are provided in Tables 4a-b below.

Further, results found that involvement with Relief Nursery programs was associated with a reduction of, on average, two serious mutable risk factors. This level of risk reduction move the family from a higher risk classification to an "average risk" classification for the population involved with Relief Nursery programs. Moreover, reduced risk has the potential to be associated with a number of other positive outcomes, as discussed in the following sections. Detailed results are provided in Tables 4a-b below.

No other family-level outcomes showed statistically significant changes over time.

CHILD LEVEL FINDINGS

Paired sample t-tests and chi-square analyses were conducted to test whether change occurred for specific children between program entry and at 6 and 12 months post program entry in the following domains: Immunization, ASQ developmental status, ASQ social/emotional status and parent child interaction scale.

The results indicate that a statistically significant improvement occurred from program entry to 6 months in the parent-child interaction scale only. Specifically, at the child level, only 46% of program participants were rated by their worker as having positive parent-child interactions at program entry. After only 6months of program involvement, 78% percent were rated as having mostly positive interactions. Detailed results are provided in Tables 4a-b below.

Table 4a provides the average, or mean score at program entry and at 6 months for each continuous and categorical outcome listed below. Table 4b reports the percentage at program entry and at 6 months post program entry for each outcome. Unlike the percentages reported in Table 2, these numbers compare individual-level families and children over time. An asterisk marks those outcomes that reached statistical significance.

Table 4a. Individual Family and Child Level Outcomes: Mean Score at Program Entry and at 6 Months

Outcome	Mean at program entry	Mean at 6 months
Average number of risks* (n=186)	19	17
Average number of strengths (n=11)	30	30
Daily family functioning (mean score)* (n=145)	3.4	3.9
Engagement with services (mean score) (n=102)	3.1	3.3
Read to their children (mean score) (n=73)	3.3	3.4
Overall family health (mean score)(n=84)	2.0	2.1
Safe housing (% yes) (n=85)	3.3	3.4
Parent-child interactions (mean score)* (n=188)	3.1	3.4

Table 4b. Individual Family and Child Level Outcomes: Percentage of Families With Positive Scores at Program Entry and at 6 Months

Outcome	Percent at program entry	Percent at 6 months
Percent of families with 19 or more risks* (n=186)	75%	57%
Percent of families with more than an average number of 4 strengths (n=11)	67%	82%
Percent of families with positive daily family functioning* (n=145)	38%	78%
Percent of families with positive engagement with services (n=102)	75%	85%
Percent of families who regularly read to their children (n=73)	33%	40%
Percent of families with good or very good overall family health (n=84)	75%	77%
Percent of families with safe housing (n=85)	43%	60%
Percent of families at risk: poverty (n=130)	66%	45%
Percent of families at risk: foster care (n=122)	44%	12%
Percent of families at risk: child welfare involvement (n=122)	40%	15%
Percent of children immunized (n=174)	81%	99%

Percent of children with ASQ Developmental Status delayed (n=29)	24%	40%
Percent of children with ASQ Social Status delayed (n=118)	34%	24%
Percent of children with positive parent-child interactions (n=188)	46%	78%

SUMMARY OF CHANGE OVER TIME ANALYSES

The results indicated that participants in the Relief Nurseries demonstrated significant improvement over time during their first 6 months in the program for three key outcomes: (1) Level of family functioning; (2) Number of risk factors; and (3) Quality of parent child interactions. However, it is important to note that the sample size for these analyses were extremely small, and thus the ability of the analyses used to detect significant change that may be occurring for other outcomes was greatly hindered. Missing data for both the family intake, 6-month follow-up, and 12-month follow-up resulted in sample sizes that were generally not adequate to detect change. Further, many of these outcomes may require more than 6 months to show substantive change. Thus, these results are actually quite promising, as they show that despite the small sample size and the relatively short follow-up period, Nursery participants showed important, and significant, improvements across several domains of functioning. To explore how these changes might correlate to other outcome domains, we conducted a series of correlational analyses, described below.

Child and Family Services Data

In addition to examining Relief Nursery data, NPC Research entered into a confidential data sharing agreement with the Oregon DHS Child and Family Services, as described previously. CAFS data included number of founded and unfounded reports, allegations, and time spent in substitute foster care. Whereas Relief Nursery data provides the perspective of the Relief Nursery staff on the level of foster care and child welfare involvement of families, CAFS data provides detailed information for those families that actually become involved with child welfare subsequent to program enrollment. Results of the analyses of CAFS data found:

1. Thirty-two (32) unduplicated Relief Nursery families (5%, and including 65 children) had a founded referral subsequent to Relief Nursery enrollment. Semi-Annual report data state that the Nurseries referred 50 families to child welfare.

2. None of these founded cases involved physical or sexual abuse.

3. The number of risk factors at program entry for families with a founded referral ranged from 8 to 29, and the average number of risk factors for these 32 families

was 23. The average for the overall Nursery population was 19. This difference is statistically significant, suggesting that families with a founded report to child welfare entered the Nursery with a significantly higher number of risk factors than those without DHS involvement.

4.   Thirty-five children entered foster care, representing 29 families.

5.   The average length of stay in foster care for these children was 325 days; the range was 165 to 613, with most cases not closed at time of data collection.

6.   A highly significant[2] correlation was found between the likelihood of a founded child welfare report and the number of family risks at program entry. In other words, as families reduce their number of risks they also reduce the likelihood of child welfare involvement. Moreover, logistic regression analyses conducted found that when 2 risk factors are reduced, families are 2 times less likely to be involved with child welfare. Although this may sound small, given the average number of risk factors presented, each risk factor reduction has the potential of reducing the odds of child welfare involvement greatly.

Findings suggest that a small percentage of the Relief Nursery population (5%) becomes involved with child welfare subsequent to Relief Nursery enrollment. It is important to note that while a 5% rate of founded child welfare reports may seem high, Relief Nursery staff are mandated reporters. As a result, the high-risk parents served by Relief Nurseries interact with several persons that are required, by law, to report suspected abuse. Thus, for Relief Nursery families the likelihood of a report that might have otherwise gone un-detected increases.

According to both the Relief Nursery and CAFS data, those involved with child welfare present more risk factors than those not involved with child welfare. Thus, the CAFS data support the previous finding that fewer risks relate to less likelihood of child welfare in-volvement. This further underscores the significance of the finding that after just 6 months in the Relief Nursery program, families were able to significantly reduce their number of risk factors. This clearly is an important finding, and one that is central to the mission of the Relief Nurseries.

Correlational Analyses

To understand how these positive outcomes relate to other key focal areas addressed by Relief Nursery programs, follow-up analyses were conducted to ask the question: Are families who show improvement in daily family functioning, parent-child interactions, and number of risks likely to have associated changes in other key outcomes? That is, if these outcomes are improved, might other outcomes be expected to improve as well?

Correlations were used to examine whether improved daily family functioning, improved parent-child interactions and reduced risk related to other outcomes. Results found that:

- Families who improved in their daily family functioning also tended to:

    1.   Increase reading to child

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[2] (r[606]=.28; p.=.00)

2. Increase strengths

3. Show more engagement with providers

4. Improve safe housing

5. Reduce risk of poverty

- Families who improved the quality of their parent-child interactions also tended to:

   1. Increase strengths

   2. Improve engagement with providers

   3. Improve safe housing

- Families who reduced their number of risk factors also tended to:

   1. Be less likely to have a child placed in foster care (as reported by Relief Nursery staff)

   2. Be less likely to be involved with child welfare (as reported by Relief Nursery Staff)

   3. Be less likely to meet Federal Poverty guidelines

   4. Improve the quality of their parent-child interactions

   5. Improve safe housing

   6. Improve strengths

   7. Improve family health

   8. Increase the frequency of reading to their child

These results suggest that improvements in the three domains that showed significant changes over time are also associated with improvements in other outcome areas. However, it is very important to note that these analyses are correlational in nature, and do not suggest that these improvements over time actually **caused** changes in other areas. Further research and evaluation will be needed to document the causal direction of these associations.

Summary

R esults from this evaluation found that after only 6months of involvement in Relief Nursery services, participants significantly improved both their overall family functioning and the quality of parent-child interactions. Overall, after 6 months in the program:

- Positive daily family functioning increased from 36% to 78%

- Positive parent-child interactions increased from 46% to 78%

- Number of family risk factors reduced from 19 risk factors to 17 risk factors

Further, results from both Relief Nursery and Oregon DHS CAFS data found that the greater the level of risk reduction for families, the less likely it was that children would be involved in child welfare or placed in foster care homes subsequent to Relief Nursery participation.

Although significant changes were not found for other outcomes, it is important to remember that this evaluation was limited by the data available, and in particular the available longitudinal data. The small sample sizes and relatively short follow-up period may have prevented the evaluation from documenting important changes that may be occurring for Relief Nursery participants. The results that were found, however, suggest that the Relief Nurseries are doing important work to improve the quality of family life and parenting for extremely high risk families in Oregon. Better data that allow for more families to be tracked for longer periods of time will be better able to demonstrate additional positive outcomes.

RECOMMENDATIONS

These recommendations are provided to the Oregon Commission on Children and Families to improve evaluation and related data collection. The recommendations focus on steps Nurseries can take to improve data collection and reporting infrastructure. These steps will result in better program reporting capabilities and improved ability to detect Relief Nursery outcomes.

The data collection, data cleaning, and data analysis process for this evaluation revealed several problems with the Relief Nursery data and evaluation infrastructure, specifically: Missing data, Form version control, Lack of consistent data collection protocols, and Lack of a cross-Nursery database. The consequences of each issue and recommendations for improvement are provided below. Each Nursery is committed to and invested in obtaining complete and accurate data. Instituting the recommendations below will be critical to resolving the data problems that currently exist, and will result in more accurate and reliable reporting and outcome analysis.

Missing Data

The primary missing data issues are: (1) Missing data elements (e.g., items skipped or left blank on forms), such as important demographic and outcome variables not being completed on specific forms for particular families; (2) Missing family intake and follow-up data; and (3) Forms missing the variable indicating at what point the data were collected. As a result of these issues only 54% of families had a 6-month follow-up, 27% had a 12-month follow-up, and 6% had an 18-month follow-up. Thus, it was impossible to conduct the most important and rigorous longitudinal analyses of key program outcomes and performance measures for the majority of families that participate in Nursery programming. Moreover, it is does not appear that there are clear protocols in place to ensure that the data that are collected are collected consistently and accurately by workers; quality control, review of data collection tools, and reliability checking of data collected are all important steps, which require staff time and resources.

Form Version Control

Certain long-term Nurseries have experienced several changes in data collection forms over the years. The study window for this evaluation included cases from Nurseries with multiple form versions. This lack of consistently used forms makes comparability for these cases at best challenging, and at worst impossible. Thus, certain cases were excluded from longitudinal analyses because the data available could not be reconciled with the available information about how variables were defined and operationalized on different forms.

Lack of Consistent Data Collection Protocols

Across the Nurseries, there appeared to be considerable disparity in how data were collected. First, there were differences in the use of informed consent or other release processes and a lack of agreement in interpretation of HIPAA guidelines for sharing of information for research purposes. Second, there appeared to be considerable inconsistency

across Nurseries in the definition of particular items on forms, and in particular in how items on the Semi-Annual Monitoring Report were completed. Finally, lack of reporting on families served through outreach services, an issue raised by the previous evaluator, continues.

Lack of a Cross-Nursery Database

Each Nursery uses a unique system for data entry and data management. As a result, a universal method for retrieving data for the Semi-Annual Monitoring Report, and for other analyses and reporting does not exist. Thus, key outcomes and performance measures may be defined and reported inconsistently across Nurseries. For this evaluation four different electronic databases were received, each with different form item names, structure, and method for maintaining data on families over time. Thus, it appears that each Nursery has had to "recreate the wheel" in terms of developing a data management system. This further contributes to the lack of consistency in data quality across the sites.

The other five sites spent precious staff time to hand photocopy data for the evaluation because these data were not maintained in any type of database. One site that enters data electronically had to re-enter data because the database currently in use does not require the entry of key outcome indicators, and could not extract data at the individual level. These consequences resulted in excess resources spent on data entry, data cleaning and processing by both Nursery and evaluation staff, and in lack of consistent reporting across the Nurseries. Given that all Nurseries have similar data collection tools and reporting requirements, a common data management system would appear to be a wise investment of resources.

Recommendations for Improvement

Several recommendations are available to Nursery programs for their implementation. First, in regards to missing data NPC recommends the following:

1. Staff training on minimizing missing data, and ongoing supervision of data quality;

2. Adequate Nursery staff FTE to support quality data collection; and

3. Implementation of a data tracking system that ensures forms are completed on time and explains why rounds are missed (e.g., parent left program before 6-month follow-up could be completed).

Second, to address the issues that result from form changes we suggest that programs:

1. Minimize future form changes;

2. Carefully attend to form consistency so that items changed are as similar as possible in language and concept to previous versions,

3. Ensure all Nurseries use the same revisions of forms; and

4. Maintain centralized documentation of form changes over time so that longitudinal analyses can accommodate changes in forms.

Next, to minimize the consequences of inconsistent data collection protocols programs might:

1. Adopt a common, cross-Nursery release form to facilitate data sharing for research purposes;

2. Provide staff training, support and ongoing data collection monitoring on how to consistently extract data for the Semi-Annual Monitoring Report; and

3. Improve data collection systems by developing a method for accurate reporting of participants served by outreach-only services.

Finally, to resolve the issue of lack of a cross-Nursery database, we offer the following solutions:

1. Implement one, universal, user-friendly, Web-based database;

2. Support ongoing data entry by Nursery staff;

3. Monitor the data entry and data system for quality; and

4. Build reporting functions into the web-based database that provides consistently defined, cross-Nursery reporting for the Semi-Annual Monitoring Report, and other reporting requirements.

Together, these improvements to data collection have the ability to significantly improve the quality of data collected by, and reported for, the Relief Nurseries. Although results of this evaluation were promising, and showed significant positive outcomes in some domains, with better, more consistent data collection, future evaluation will be better able to offer a more comprehensive assessment of Relief Nursery outcomes.

APPENDIX A: ORIGINAL ANALYSIS PLAN

Descriptive Characteristics Program Characteristics

1. Descriptives on:
    Total number served
    Mean number of days in service (length of service/stay)
    Mean annual cost per child
    Funding sources
    Types of services offered
    Family characteristics:
        Ethnicity
        Marital status
        Employment
        Percent at or below poverty level
        Percent of parent aged 17 or lower
        Percent with a second caregiver
        Mean number of risk factors for the population
    Child characteristics:
        Mean and range for age of child
        Diagnosed disability

2. Within subjects, repeated measures ANOVA applied to the following outcomes, at the appropriate level, to determine measured change from baseline to 6 months; baseline to 12 months; baseline to 18 months, and baseline to 24 months. Within subjects, repeated measure ANCOVA will be applied to determine whether outcomes are statistically significant after controlling for level of engagement, ethnicity, poverty, presence of teen parent, number of risk factors, and age of child. Where noted, the more appropriate statistical test, chi-square, will be applied instead of ANOVA.

Outcomes

    Child Outcome: Immunizations (chi-square)
    Child Outcome: Children Screened with a Developmental Assessment (chi-square)
    Family Functioning Outcomes: Risk Factors
    Family Functioning Outcome: Strengths
    Family Functioning Outcome: Health (chi-square)
    Family Functioning Outcome: Poverty (chi-square)
    Family Functioning Outcome: Family Progress
    Family Functioning Outcome: Parent-Child Interactions
    Family Functioning Outcome: Abuse Reports (chi-square)
    Family Functioning Outcome: Foster Care Placements

3. Multivariate and Logistic Regression analyses relating program engagement, length of stay, and types of services received (if available) to family and child outcomes after controlling for demographics and risk.

4. Multivariate and Logistic Regression analyses to explore whether demographic and risk factor information predict services received and outcomes obtained for families.

Operational definitions

> Total number served: Frequency distribution of unique family and child id numbers for those families served within the analysis time frame

Family characteristics:

> Ethnicity: At intake (Intake item 1a.)

> Marital status: At intake (Intake item 5.)

> Employment: At intake (Intake item 6)

> Percent at or below poverty level: As a descriptive characteristics and covariate this will be defined as whether poverty is indicated on the Risk Factor Checklist at intake (R-F item 51). As an outcome this will be explored over time.

> Percent of parent aged 17 or lower: At intake (Intake item 1b)

> Percent with a second caregiver: At intake (Intake item 10)

> Mean number of risk factors for the population: As a descriptive characteristics and covariate this will be defined as the total number of risks indicated on the Risk Factor Checklist at intake (R-F items 67(non-mutable) and 68 (mutable)). As an outcome the change in the total number of mutable risk factors will be explored over time.

> Level of engagement: Scale score on 6-month Family Update items 21-24.

Child characteristics:

> Mean and range for age of child: At intake (Intake item age on Child Form)

> Diagnosed disability: At anytime (Intake and Update item 1 recoded as dichotomous and reported as a percentage)

Outcomes:

> Child Outcome: Immunizations (Child Form item 2, recoded as dichotomous yes/no)

> Child Outcome: Children Screened with a Developmental Assessment (Child Form item 7, 10, 11 (% of screened that were referred at any time point))

> Family Functioning Outcomes: Risk Factors (Mean number as recorded on R-F items 67-68)

> Family Functioning Outcome: Strengths (Intake and Update items 14a through 14i)

> Family Functioning Outcome: Poverty (RF item 51)

> Family Functioning Outcome: Family Progress (Intake and Update items 21-24; 25-27; 28; and 32-33)

> Family Functioning Outcome: Parent-Child Interactions (Intake and Update items 12-19)

> Family Functioning Outcome: Abuse Reports (R-F item 37)

> Family Functioning Outcome: Foster Care Placements (R-F item 33)