



**ROCHESTER EARLY ENHANCEMENT PROJECT
RETROSPECTIVE STUDY REPORT with ADDENDUM**

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February 2008

children's
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STRENGTHENING SOCIAL AND
EMOTIONAL HEALTH

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This report, built on many years of REEP data, owes much to the REEP partners who have diligently registered REEP children and families, and to the data analysts and data entry staff who have kept these data in order.

The original study design owes much to Dirk Hightower, Rusti Berent and Emma Forbes Jones, all of whom contributed to the early discussion on this project, and to Lori VanAuken, Director of Community Partnerships, whose patient editing has helped to craft this finished product.

The Daisy Marquis Jones Foundation has been generous in its support of REEP since 1999, and was the funder of this longitudinal study.

REEP has received major financial support over its 15 year history from United Way of Greater Rochester.

BACKGROUND

Children’s Institute, with funding from the Daisy Marquis Jones Foundation, conducted a retrospective cohort study of health indicators and school outcomes among children who have participated in programs of the Rochester Early Enhancement Project (REEP). REEP has been offering preventive services to pregnant women and young children since 1993. These services include pregnancy and parenting education, fostering healthy early childhood development and school readiness, and early childhood education. REEP services are delivered through home visiting and center-based activities.

Because services are placed in neighborhoods of concentrated poverty, and because of REEP’s outreach efforts, many of the children in REEP programs come with high risks for a number of poor outcomes, including school adaptive problems. This longitudinal study followed REEP children into kindergarten and elementary school, and looked at their performance in comparison with their peers who were not in REEP programs.

STUDY QUESTIONS

1. **Child history at kindergarten registration.** Do children who have participated in REEP programs or whose parents have participated in REEP programs (REEP children) differ from their peers at kindergarten registration?
2. **School outcomes.** Do REEP children differ from their peers in selected school outcomes as measured by Child Observation Record (COR), Stanford Achievement Tests at Grades 1 and 2 (SAT-1 and SAT-2) and school attendance and suspension data?
3. **REEP ‘dosage’ as a factor.** Are school outcomes related to the frequency of attendance and/or number of years students and their parents were enrolled in REEP programs?

DATA SOURCES

- REEP Registration records, collected by and housed at Children’s Institute, include identification data and some socio-economic data (e.g. medical home, dentist, health insurance).
- Parent Appraisal of Children’s Experiences (PACE), a questionnaire completed by the parent/guardian at the time that the child is registered for kindergarten. PACE collects child and parent health information, child’s life experiences, and parental assessment of child behaviors.

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- Rochester Early Childhood Assessment Partnership (RECAP) data. RECAP is a community wide project to evaluate and improve the quality of early education programs and child outcomes in Monroe County. RECAP data include children's scores on the COR administered in fall and spring in kindergarten.
 - Rochester City School District (RCSD) records of SAT-1 and SAT-2 scores, attendance, and suspensions.

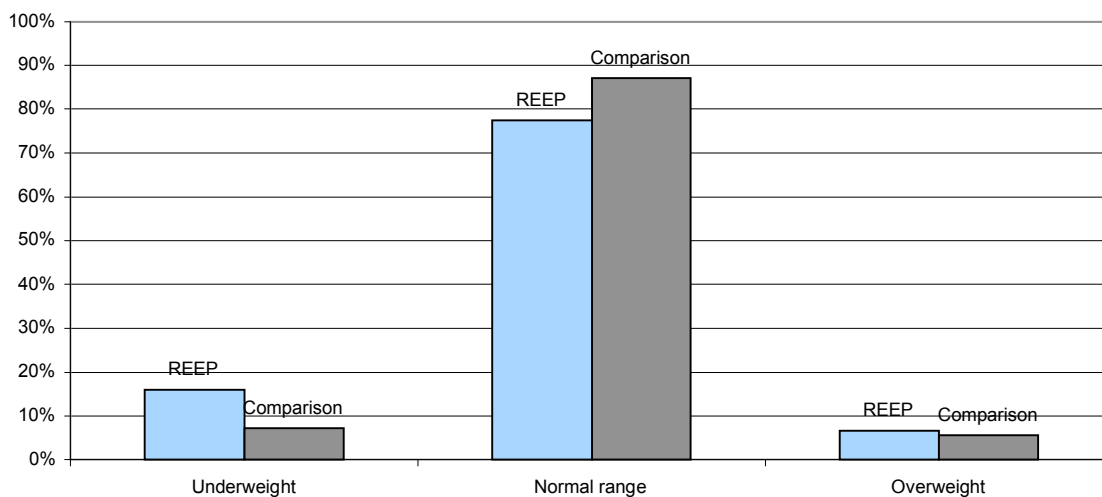
METHODS

- Using existing REEP and RCSD data housed at Children's Institute, a dataset was created for any REEP child for whom an RCSD student identification number could be found on RCSD alphabetical listing of children registered in RCSD schools.
- In each analysis described below, for each identified REEP child, a matched comparison child (control) was randomly selected from children of the same sex as the REEP child who attended the same school and were in the same grade.
- Using RCSD identification numbers of REEP and control children, the following data were collected for each child and a comparison was made between two groups, REEP children and their matched peers who constituted the control group:
 - Selected traits from PACE were analyzed using X^2 tests. Traits in this analysis included birth weight of the child, mother's health behavior during pregnancy and child health history. There were about 400 subject children in the analysis.
 - Scores from the Child Observation Record (COR), an observational tool completed by kindergarten teachers in the day-to-day school setting, were obtained from the RECAP dataset. The COR is completed in fall and again in spring and measures child development. Using Analysis of Variance (ANOVA) testing, three data points were examined: fall COR score, spring COR score, and change from fall to spring. There were about 1000 subjects in these analyses.
 - Scores on the Stanford Achievement Tests (Grades 1 and 2) were obtained from RCSD datasets. Two subscales were used, Reading Comprehension and Mathematics Total, each at grades 1 and 3. ANOVA and Multivariate analysis of Variance (MANOVA) procedures were used. Both procedures test for differences among groups. The scores of approximately 2500 children were used in these analyses.
 - RCSD School Attendance records were subjected to MANOVA and ANOVA procedures. There were too few suspensions to give any statistically significant or reliable results.

FINDINGS AND DISCUSSION

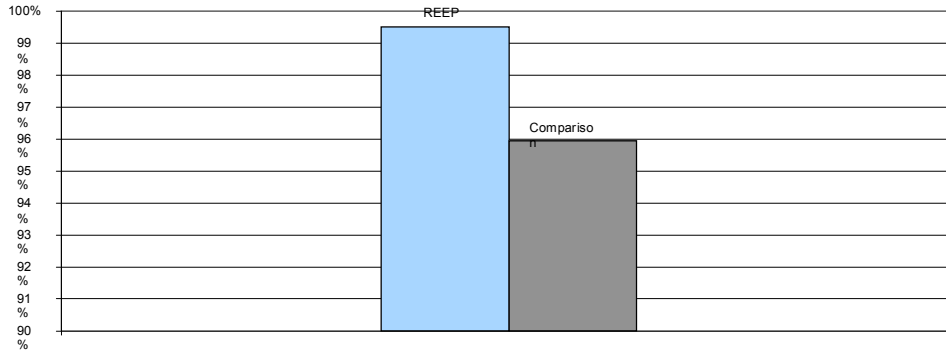
- Child history at kindergarten registration.** These data are taken from the PACE completed by the adult registering the child for kindergarten. No significant differences were found in a number of health indicators for parents and children. Only those PACE data that showed a significant difference between REEP children and their peers are being reported here.
 - REEP children are twice as likely to have been born at low or very low birth weight.** (See Table 1) ‘Low birth weight’ is defined as less than 2500 grams (5.5 pounds); ‘very low birth weight as less than 1500 grams (3.3 pounds). Birth weight greater than 2500 grams is a measured outcome of REEP perinatal programs. Among babies whose mothers participated in REEP perinatal services, the rate of low birth weight (13% average 2002-2006) is lower than prevailing rates for African-American women (15%), who make up the majority of REEP participants. However, the study being reported in this paper included all children who could be identified as having been registered in a REEP program; many of the children in this study came into REEP in early childhood and their mothers had not participated in REEP perinatal services and so their birth outcomes were not impacted by REEP services. An effort was made to identify children who mothers had participated in REEP perinatal services. This was hampered by name changes and transience in the city. Research indicates that children who are born at low or very low birth weight are at greater risk for poor outcomes across their childhood. The presence of such a large percent of these high risk children entering REEP services is indicative of REEP’s strong outreach efforts over the years. It is the intention of REEP, by locating services in neighborhoods of concentrated poverty and identifying families with other risk factors, and by concerted outreach to the community, to serve those who are most in need of preventive services.

Table 1. Parent Report of Birth Weights for REEP and Matched Comparison Children



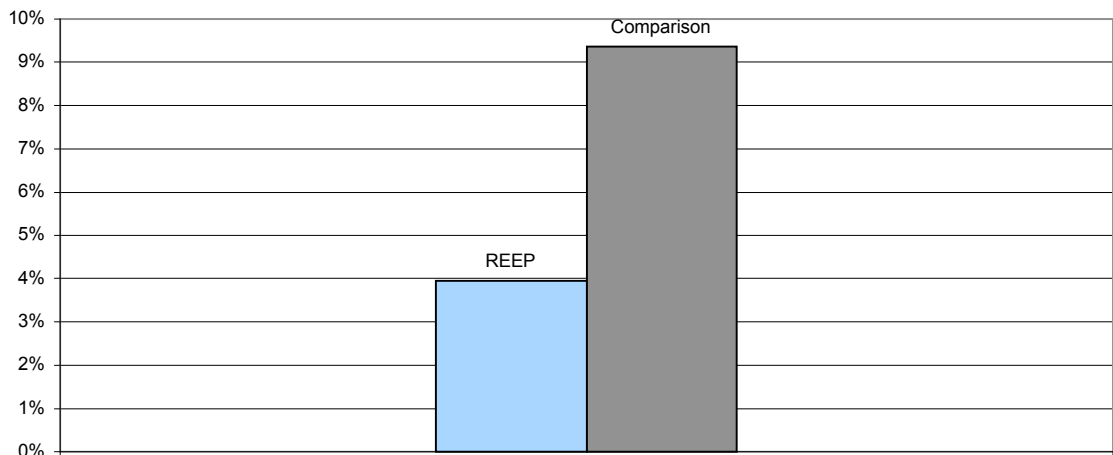
- REEP children were reported with a higher rate of having a medical home (99.5%) as compared to their peers (95.9%).** This is a key child health indicator. The greater rate of having a doctor among REEP children may be influenced by consistent parent education supporting family wellness, and by the strong REEP commitment to children’s health and to facilitating access to medical insurance and registration with a medical practice. These efforts are undertaken and monitored across REEP agencies through monthly reports from Children’s Institute to the agencies and quarterly reports to the Coordinating Council, the REEP governing body.

Table 2. Parent report of medical home for REEP and matched comparison children.



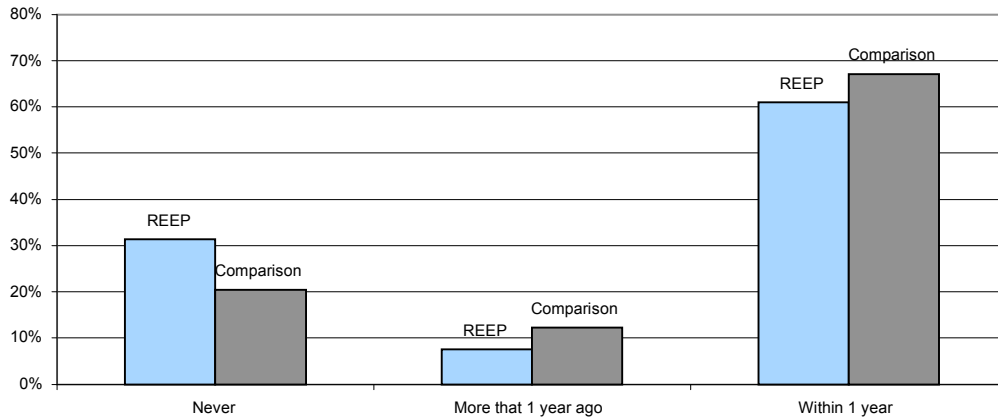
- Fewer REEP children (3.9%) received Early Intervention Services for developmental delays than their peers (9.4%).** This may indicate that REEP children are receiving early preventive services that bring their development to a level that does not require intervention.

Table 3. Parent Report of Early Intervention Services for REEP and Matched Comparison Children



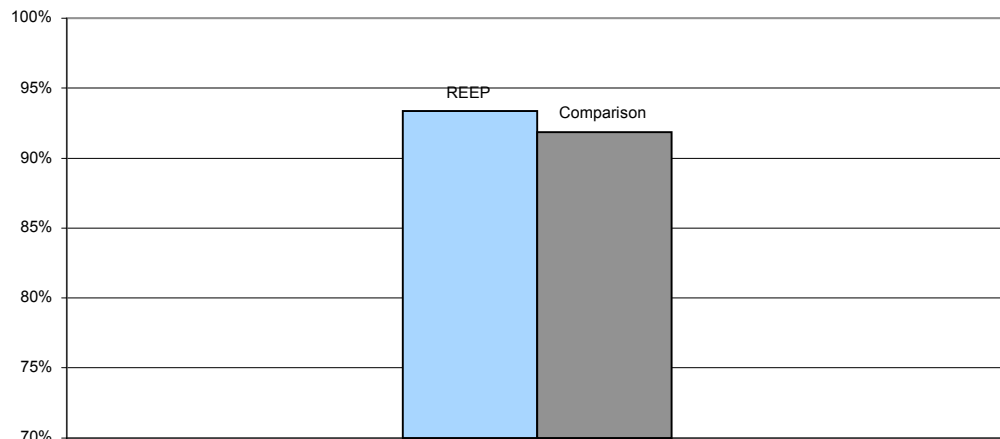
- **REEP children are less likely than their peers to have had a routine dental visit in the year prior to kindergarten registration.** This finding has been shared with REEP agency staff and a plan to address the education of parents on the importance of early dental care will be developed. Children’s Institute is part of community efforts to address oral health and REEP is well positioned to include oral health in its continued outreach work.

Table 4. Parent Report of Most Recent Dental Visits for REEP and Matched Comparison Children



2. **School outcomes.** Despite the prevalence of early risk factors, REEP children’s school outcomes on most measures are on a par with, or better than, those of their peers.
 - **REEP children were found to have better attendance records than their matched peers.** School attendance is acknowledged as a strong indicator of the likelihood of school success. The significantly higher rate of school attendance among REEP children is an important finding.

Table 5. 2004-2005 School Attendance Rates for REEP and Matched Comparison Children



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- **There is no significant difference between REEP and control children in school adaptive traits on the kindergarten COR.** These data include the fall and spring observations and the change from fall to spring.
 - **There is no significant difference between REEP and control children in Stanford Achievement Test scores in three out of the four years that were studied.** Two subscales were used, Reading Comprehension and Mathematics Total, each at grades 1 and 2. Other subscales were not used because they are not consistent across the grade levels. In one study year, REEP children scored lower on reading comprehension than their matched peers. Despite early risk factors, including a higher prevalence of low birth weight and environmental factors, REEP children's outcomes are mostly on a par with their peers.
 - **The number of suspensions was examined, but there are very few suspensions among primary grade children, so no reliable statistical comparison could be drawn.**
3. **REEP 'dosage' as a factor.** There was not a significant 'dosage effect,' that is, no difference in any of the selected indicators was associated with the number of REEP programs sessions in which a child and/or parent had participated. This finding may have little or no relevance since REEP programs differ so widely in their frequency. Home visiting may happen once a month, while a prekindergarten class is in session every day.

CONCLUSIONS

- **REEP children have higher attendance rates than their peers.** Rate of attendance is related to school adjustment and long term academic success.
- **REEP children are performing on a par with their peers.** We found this to be true despite REEP children's entering school with numerous risk factors, including a higher rate of low birth weight.
- **REEP staff should continue to make strong outreach efforts.** These analyses provide evidence that REEP is reaching children and families with multiple risk factors and that REEP may be a factor in bringing these children to parity with their peers.
- **REEP staff should continue to facilitate access to a medical home for REEP children.** This effort has been successful, as indicated by findings from PACE.
- **REEP staff should increase efforts to educate parents on the importance of early dental health visits.** This finding has been shared with the REEP collaborative and discussion and actions plans to address this concern are in development.

STUDY LIMITATIONS

This study has a number of limitations which should be taken into account when considering the results. Several of these are discussed in this section of the report.

The retrospective design of the study precluded the matching of REEP and comparison group children prior to the former group's receiving REEP program services. Thus, we cannot assume that the groups were equally at risk at the time of REEP enrollment. Since we have no baseline information, we cannot assess how much change can be attributed to REEP interventions. The outcome variables that were used in this study were collected for other purposes and were chosen largely because they were conveniently available.

For the purpose of this study, the REEP sample comprised children whose parents had been registered in a REEP program and children who had themselves been registered in a REEP program and for whom a Rochester City School District identification number could be ascertained. It is certain that we did not capture all the children who have been part of REEP.

School district registration data were not available prior to 1999. We compared names and dates of birth from REEP registration records with those from district files compiled several years later. Names may have changed since REEP registration forms were submitted. Some families had moved out of the Rochester City School District, and others had their children enrolled in private schools. In these cases, the children were not identified and included in this study.

For related reasons, we were unable to determine the preschool experiences of the children who had only attended REEP toddler programs or whose mothers had participated in perinatal programs. Although it seems reasonable to expect that those children who had more intensive direct services closer to the follow-up assessment would more likely have more significant results, we were unable to address this in the study.

Rochester has a wealth of quality early childhood settings, many of which are part of Rochester Early Childhood Assessment Partnership (RECAP). REEP classrooms for 3- and 4-year-olds function as a subset of RECAP. This means that other very similar classrooms for 3- and 4-year-olds from the same programs (e.g., Rochester Preschool-Parent Program and Family Resource Center programs) were being compared against the REEP program children. This limitation reduces the chances of finding significant results that may be attributed to REEP program participation.

The selection strategy for the REEP group involved registration only, and not necessarily participation at any specific level. The extent of possible participation varies dramatically among REEP programs, which have diverse structures. Early childhood classes can be held on two, three, four or five days a week depending on the child's age and the design of the particular program. Pregnancy and parenting education groups meet weekly and some are time limited. Perinatal home visits may take place as infrequently as once a month. The structure of each

program is based on best practice for the population served. The variety of participation patterns limited the value of the dosage analysis.

Since its inception over a decade ago, the outcomes that REEP has been committed to measuring are prenatal care, birth weight, healthy child development, school readiness, and positive parenting. Systematic REEP data collection has not included follow-up into grade school and beyond. This presented a challenge in conducting the retrospective study.