

COALITION FOR EVIDENCE-BASED POLICY

A Nonprofit, Nonpartisan Organization

Early Childhood Home Visitation:

Effectiveness of A National Initiative Depends Critically on Adherence to Rigorous Evidence About "What Works"

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Background: As policymakers consider launching a national initiative to fund early childhood home visitation, we recently circulated an evidence summary showing that there is wide variation in the strength of the evidence for, and likely effectiveness of, various home visitation program models -- a conclusion also reached by an authoritative evidence review recently published in *The Lancet* (a top medical journal). This suggests that the success of a new national initiative will depend on whether it can successfully focus funds on the subset of models that are truly effective.

We have prepared this short follow-up email to (i) identify other models supported by highly-promising evidence in preventing child maltreatment -- even if not yet widely-implemented, or not focused primarily on home visiting (attachment 1, three pages); (ii) update our earlier evidence summary for the widely-implemented models, with a few refinements based on the input we received (attachment 2); and (iii) offer brief additional thoughts on how to ensure the initiative's effectiveness based on rigorous evidence about "what works" (see immediately below).

Our central suggestion: That the national initiative focus on developing and/or scaling up program models that meet the high standards outlined in the National Academy of Sciences' 2009 report on prevention programs [1]:

- *Evidence for efficacy or effectiveness of prevention and promotion programs should be based on designs that provide significant confidence in the results. The highest level of confidence is provided by multiple, well-conducted randomized experimental trials, and their combined inferences should be used in most cases. Single trials that randomize individuals, places (e.g. schools), or time (e.g., wait-list or some times-series designs), can all contribute to this type of strong evidence for examining intervention impact.*
- *When evaluations with such experimental designs are not available, evidence for efficacy or effectiveness cannot be considered definitive, even if based on the next strongest designs, including those with at least one matched comparison. Designs that have no control group (e.g., pre-post comparisons) are even weaker.*
- *Programs that have widespread community support as meeting community needs should be subject to experimental evaluations before being considered evidence-based.*
- *Priority should be given to programs with evidence of effectiveness in real-world environments, reasonable cost, and manuals or other materials available to guide implementation with a high level of fidelity.*

Why it matters: The history of social policy and medicine is replete with interventions that appeared highly-promising in less rigorous evaluations, but were subsequently found ineffective in well-conducted randomized controlled trials. Illustrative examples include:

- **A leading teacher training program in early reading, incorporating reading strategies that were scaled up nationally in the \$1 billion Reading First program.** Despite preliminary studies and expert opinion suggesting the effectiveness of these strategies, this model program was found in a large, multi-site randomized controlled trial sponsored by the Institute of Education Sciences to have no significant effect on schools' average reading achievement in grade 2, compared to the control group).[2]

- **HHS's Comprehensive Child Development Program -- a 1990s program, funded at \$240 million over 5 years, in which trained paraprofessionals conducted home visits for families with young children.** The home visits were designed to teach parenting skills and connect families with community services. HHS sponsored a large randomized controlled trial of the program, with a sample of 4410 families at 21 projects sites. At the 5-year follow-up, the study found the program was well-implemented, yet produced no effects on the main child and family outcomes, including (i) children's cognitive and social development, (ii) child health, and (iii) parents' economic self-sufficiency. See [published abstract and full study here](#).

Conclusion: We believe it is important to avoid the billion-dollar mistakes of the past, by focusing the new national initiative on research-proven models shown to improve important life outcomes for disadvantaged children.

This might include (i) funding to scale up program models that already meet the National Academy of Sciences standard (such as the Nurse-Family Partnership, described in attachment 2), with careful assessment to ensure adherence to the proven model; and (ii) funding to replicate highly-promising models (such as the three described in attachment 1), coupled with randomized evaluations to hopefully move these into the research-proven category.

In contrast to these proven and highly-promising models, our evidence summary -- as well as the authoritative review in *The Lancet* "[3] -- find that many existing home visitation models produce weak or no effects on key child outcomes. Thus, launching this initiative the old-fashioned way -- based on a diluted evidence standard that ratifies such existing practices -- is unlikely to do much good, and may miss an opportunity to fundamentally improve life outcomes for millions of children born into disadvantaged backgrounds.

The Coalition for Evidence-Based Policy is a foundation-supported nonprofit, nonpartisan organization. We have no affiliation with any program models in home visitation or any other policy area.

[1] *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities* (National Academies Press, 2009, p. 371).

[2] *The Impact of Two Professional Development Interventions on Early Reading Instruction and Achievement*, Institute of Education Sciences, U.S. Department of Education, September 2008, <http://ies.ed.gov/pubsearch/pubsinfo.asp?pubid=NCEE20084034>.

[3] Harriet L. MacMillan et. al., "Interventions To Prevent Child Maltreatment and Associated Impairment," *Lancet*, vol. 373, January 17, 2009, pp. 250-266. Full text of this paper is available on-line, free of charge, at [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61708-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61708-0/fulltext).

COALITION FOR EVIDENCE-BASED POLICY

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Illustrative Examples of Highly-Promising Program Models in Early-Childhood Home Visitation and Related Areas

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Rigorous evaluations have identified several program models in home visitation and related areas that we believe fall into the highly-promising – but not yet proven – category. What follows are short summaries of three such promising models and the evidence of their effectiveness. These are intended as illustrative examples rather than a complete listing.

1. Early Start (A New Zealand-Based Home Visitation Program):

A. Summary of the program: Early Start is a New Zealand-based program that provides home visits by specially-trained nurses or social workers to families at risk of child maltreatment. The visits generally start soon after a child's birth – though mothers younger than 24 can also receive prenatal visits – and can last up to five years. The program focuses on promoting positive parenting, ensuring quality health care for mothers and their children, improving the relationship between parents, and helping families become financially independent.

B. Evidence of effectiveness: The program has been evaluated in one randomized controlled trial (Fergusson 2005, Fergusson 2006) with a sample of 443 families, which measured outcomes three years after families had entered the program.¹ The study had low sample attrition (12% at the three-year follow-up), although there was a difference in attrition between the treatment and control groups (16% versus 7% respectively).

At the three-year follow-up, the study found that the program produced statistically-significant effects on a wide range of important child outcomes, including:

- (i) 33% reduction in children's hospital visits for injuries or accidental poisoning (17.5% of the treatment group children experienced such hospital visits vs. 26.3% of controls);
- (ii) Reduction in parent-reported rates of severe physical assaults on their children by almost two-thirds (4.4% of treatment group parents reported such abuse vs. 11.7% of controls); and
- (iii) Improvements in parent-reported child behavior, parenting attitudes, and child participation in early childhood education.

The study found no significant effect on official reports of child abuse; the authors hypothesize that this may be because treatment group families were under greater surveillance and thus more likely to be reported than control group families.

In contrast to this pattern of significant positive effects on child outcomes, the study found no significant effects on any parental or family outcomes (e.g., parental substance use, welfare dependence, earnings, or employment).

¹ David M. Fergusson, et al. "Randomized Trial of the Early Start Program of Home Visitation." *Pediatrics*, vol. 116, 2005, pp. e803-e809. David M. Fergusson, et al. "Randomized Trial of the Early Start Program of Home Visitation: Parent and Family Outcomes." *Pediatrics*, vol. 117, 2006, pp. 781-786.

- C. **Need for corroboration:** Although these study results are promising, we suggest the need for corroboration in a second trial in order to: (i) confirm that the positive effects are generalizable to other implementation settings and conditions; and (ii) rule out the possibility that limitations in this study (such as the difference in sample attrition between the treatment and control groups noted above) produced a spurious finding of effectiveness.

2. Recovery Coaches for Substance-Abusing Parents:

- A. **Summary of the program:** This program provides parents who have temporarily lost custody of their children to the state, and are suspected substance abusers, with the case management services of a Recovery Coach. The Recovery Coach works with the parent, child welfare caseworker, and substance-abuse treatment agencies to remove barriers to treatment, engage the parent in treatment, provide outreach to re-engage the parent if necessary, and provide ongoing support to the parent and family through the duration of the child welfare case. Home visits, often conducted jointly with child welfare caseworkers, are a key element of the program.
- B. **Summary of the evaluation:** The program has been evaluated in a large randomized controlled trial of 1309 parents in Chicago and suburban Cook County who had temporarily lost custody of their children to the state and had been referred by the court to a substance-use assessment between April 2000 and June 2004.² Because the key outcomes were measured through official records, there was no sample attrition for these outcomes.

As of mid to late 2005, when the average parent had been in the study 2.5 to 3 years, the study found statistically-significant effects on the main outcomes measured, including:

- (i) 17% decrease in the likelihood of parents having a new child maltreatment allegation (25% of the treatment-group parents had such an allegation versus 30% of control-group parents).
- (ii) For female parents, a 29% decrease in the likelihood of delivering a substance-exposed infant (15% of treatment-group women delivered a substance-exposed infant versus 21% of control-group women).
- (iii) 34% increase in the likelihood of children returning home to live with the parent (15.5% of treatment-group children returned home versus 11.6% of control-group children).

The study also found that the program, by reducing the cost of foster care and adoption, produced net cost savings to the state (however, the cost analysis is not fully reported).

- C. **Need for corroboration:** Although these study results are promising, we suggest the need for corroboration in a second trial in order to: (i) confirm that the positive effects are generalizable to other implementation settings and conditions; and (ii) rule out the possibility that study limitations (e.g., the fact that official records are an imperfect measure of substance-exposed births) might have produced an erroneous finding of effectiveness.

² Joseph Ryan et.al., "Recovery Coaches and Substance Exposed Births: An Experiment in Child Welfare," *Child Abuse & Neglect*, vol. 32, 2008, pp. 1072-1079. Joseph Ryan, *Illinois Alcohol and Other Drug Abuse [AODA] Waiver Demonstration: Final Evaluation Report*, University of Illinois at Urbana-Champaign, School of Social Work, January 2006.

3. Triple P (Positive Parenting Program):

- A. Summary of the program:** Triple P is a parent training program, lasting anywhere from three weeks to an entire school year, with the intensity and duration of service depending on a family's level of risk for child maltreatment and need for child management support. The program seeks to prevent social, emotional, behavioral, and developmental problems in children from birth to age 12 by enhancing their parents' parenting skills and knowledge of child development. Triple P incorporates various combinations of parenting seminars, skills-training sessions, phone consultations, and, in some cases, home visits (however, this is not primarily a home visitation program).
- B. Evidence of effectiveness:** This program has been evaluated in at least 11 publicly-available randomized controlled trials with short-term follow-ups (between two and nine months after random assignment). These studies have found generally positive effects on children's behavior, as reported by parents, teachers, and independent observers.

More recently, the program was evaluated in a large randomized controlled trial that randomly assigned 18 counties in South Carolina to county-wide implementation of the Triple P program, or a control group, where families continued to receive the usual community services.³ Within the treatment counties, the targeted program recipients were families with at least one child under eight years olds. There was no sample attrition, as all 18 counties remained in the study for its two-year duration. Outcomes for county residents were measured through official administrative data (e.g., child maltreatment cases recorded by Child Protective Services).

Two years after random assignment, the study found sizeable, county-wide effects on the key outcomes measured, including reductions of 15% or more in (i) substantiated child maltreatment cases, and (ii) hospitalizations for child maltreatment injuries, in the treatment counties compared to the control counties. However, the study's analysis is not completely reported, so we have requested additional information from the researchers to confirm the size of the effects and whether they are statistically significant.

- C. Corroboration and/or longer-term follow-up would be desirable:** This was a large, population-level trial which we believe may, by itself, provide strong evidence of effectiveness (assuming the size and statistical significance of the effects are confirmed, as discussed above). The evidence could be further strengthened with a longer-term follow-up (to determine whether the effects are sustained over time), and/or corroboration in a second trial (to ensure that the effects are generalizable to other implementation settings and conditions).

³ Ronald Prinz et. al., "Population-Based Prevention of Child Maltreatment: The U.S. Triple P System Population Trial," *Prevention Science*, online publication January 22, 2009

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Early Childhood Home Visitation Program Models: An Objective Summary of the Evidence About Which Are Effective

Based on Congressional and Administration interest in expanding early childhood home visitation services, we have prepared this short summary of findings from rigorous evaluations of the following widely-implemented U.S. home visitation program models: Hawaii Healthy Start, Healthy Families Alaska, Healthy Families New York, Healthy Families San Diego, Home Instruction Program for Preschool Youngsters (HIPPY), Nurse-Family Partnership, Parents As Teachers, and Parent-Child Home Program. This cover page highlights items we believe may be of particular interest in the current policy discussions.

Factors supporting the validity of this summary:

(1) The Coalition is a neutral, objective party in assessing the evidence. We are a foundation-supported nonprofit organization with broad experience reviewing evidence for Congress and the federal agencies. We have no affiliation with any program models in home visitation or any other policy area.

(2) Our findings are based on randomized trials – the study design identified in a recent National Academy of Sciences report as necessary to establish strong evidence.

Per the Academy's January 2009 report on prevention programs for young people: "The highest level of confidence [in program efficacy or effectiveness] is provided by multiple, well-conducted randomized experimental trials Single trials that randomize individuals, places (e.g. schools), or time (e.g., wait-list or some times-series designs), can all contribute to this type of strong evidence for examining intervention impact. When evaluations with such experimental designs are not available, evidence for efficacy or effectiveness cannot be considered definitive, even if based on the next strongest designs.... Programs that have widespread community support ... should be subject to experimental evaluations before being considered evidence-based."¹

Main conclusion: Rigorous studies support the effectiveness of the Nurse-Family Partnership, and find few validated effects for the six other models. The evidence for each model, based on all publicly-available randomized controlled trials, is summarized in the attachment.

Our findings are consistent with results of an authoritative evidence review recently published in *The Lancet* – one of the top medical journals. Key conclusions of that review include the following:

"The programme with the best evidence for preventing child abuse and neglect is the Nurse-Family Partnership, which has shown reductions in objective measures of child maltreatment or associated outcomes when administered to high-risk families prenatally and in the first 2 years of a child's life; however, most home visiting programmes have failed to show such benefits."

"Most of the RCTs [randomized controlled trials] that assessed the effectiveness of home-visitation programmes for preventing physical abuse and neglect have focused on models with service delivery by paraprofessionals, specifically the Hawaii Healthy Start Program and Healthy Families America. Overall, results have been disappointing ..."²

Evidence summaries circulated by several home visitation organizations contain flawed claims of effectiveness. These include, for example: (i) selectively reporting one or two positive findings in an RCT from an overall pattern of disappointing results; (ii) reporting effects that are not statistically significant, and so could be due to chance; and (iii) reporting short-term effects that faded to insignificance in subsequent follow-ups. In many cases, these claims of effectiveness are at odds with the stated conclusions of the authors of these studies (summarized in the attachment).

* * * * *

¹ *Preventing Mental, Emotional, and Behavioral Disorders Among Young People: Progress and Possibilities* (National Academies Press, 2009, p. 371).

² Harriet L. MacMillan et. al., “Interventions To Prevent Child Maltreatment and Associated Impairment,” *Lancet*, vol. 373, January 17, 2009, pp. 250-266. Full text of this paper is available on-line, free of charge, at [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(08\)61708-0/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(08)61708-0/fulltext).

Evidence on the Effectiveness of Eight Widely-Implemented Early Childhood Home Visitation Models

This attachment summarizes findings from all publicly-available randomized controlled trials of the following widely-implemented home visitation program models: Nurse Family Partnership, Parents As Teachers, Parent-Child Home Program, Healthy Families New York, Hawaii Healthy Start, Healthy Families Alaska, Healthy Families San Diego, and HIPPPY.

1. Nurse-Family Partnership (NFP): Strong Evidence of Effects on Important Life Outcomes of Children and Mothers

NFP provides nurse home visits to pregnant women with no previous live births, most of whom are (i) low-income, (ii) unmarried, and (iii) teenagers. The nurses visit the women approximately once per month during their pregnancy and the first two years of their children's lives. The nurses teach (i) positive health related behaviors, (ii) competent care of children, and (iii) maternal personal development (family planning, educational achievement, and participation in the workforce).

NFP has been evaluated in three well-implemented randomized controlled trials – each carried out in a different population and setting. All three trials found the program to produce sizeable, sustained effects on important mother and child outcomes. This provides confidence that this program would be effective if faithfully replicated in other, similar populations and settings. What follows is an overview of key findings from the three trials¹:

Study 1 (Elmira, New York, 15-year follow-up)²

This was a randomized controlled trial of 300 women in Elmira, New York, a semi-rural community. Approximately 90% of the women were white, 60% were low income, and 60% were unmarried. Their average age was 19. The study had fairly low sample attrition – about 20% at the 15-year follow-up.

Effects on the children of the nurse-visited women at age 15 (vs. the control group):

- 48% fewer officially-verified incidents of child abuse and neglect.

¹ A full summary of the results from all three trials is posted at <http://evidencebasedpolicy.org/docs/NurseFamilyPartnershipTTDec08.pdf>. The full summary reports the results for all of the main outcomes measured in the trials (including any outcomes for which no effect was found), whereas the overview above lists the key positive effects that were found. All effects shown are in comparison to the control group, and are statistically significant at the 0.05 level unless noted otherwise in the text.

² Luckey, Dennis W., David L. Olds, Weiming Zhang, Charles Henderson, Michael Knudtson John Eckenrode, Harriet Kitzman, Robert Cole, and Lisa Pettitt, "Revised Analysis of 15-Year Outcomes in the Elmira Trial of the Nurse-Family Partnership," *Prevention Research Center for Family and Child Health, University of Colorado Department of Pediatrics*, 2008. Olds, David L., Charles R. Henderson Jr, Robert Cole, John Eckenrode, Harriet Kitzman, Dennis Luckey, Lisa Pettitt, Kimberly Sidora, Pamela Morris, and Jane Powers, "Long-term Effects of Nurse Home Visitation on Children's Criminal and Antisocial Behavior: 15-Year Follow-up of a Randomized Controlled Trial," *Journal of the American Medical Association*, vol. 280, no. 14, October 14, 1998, pp. 1238-1244. Olds, David L., John Eckenrode, Charles R. Henderson Jr, Harriet Kitzman, Jane Powers, Robert Cole, Kimberly Sidora, Pamela Morris, Lisa M. Pettitt, and Dennis Luckey, "Long-term Effects of Home Visitation on Maternal Life Course and Child Abuse and Neglect: 15-Year Follow-up of a Randomized Trial," *Journal of the American Medical Association*, August 27, 1997, vol. 278, no. 8, pp. 637-643.

- 59% fewer self-reported arrests.
- 57% fewer self-reported convictions and probation violations. *This effect was statistically significant at the .10 level, but not the .05 level.*

Effects on the nurse-visited women when their children reached age 15 (vs. the control group):

- 20% less time spent on welfare. *This effect was statistically significant at the .10 level, but not the .05 level.*
- 19% fewer subsequent births.
- 61% fewer self-reported arrests.
- 72% fewer self-reported convictions³.

Study 2 (Memphis, Tennessee, 9-year follow-up)⁴

This was a randomized controlled trial of 743 women in Memphis, Tennessee. Approximately 90% of the women were African-American, 85% were low-income, and almost all were unmarried. Their average age was 18. The study had fairly low sample attrition – between 10% and 23% (depending on the outcome measure) at the 9-year follow-up.

Effects on the children of nurse-visited women at age 2 (versus the control group):

- 23% fewer health care encounters for children's injuries or ingestions.
- 78% fewer days hospitalized for injuries or ingestions

Effects on the children of nurse-visited women at age 9 (vs. the control group):

- Lower mortality rate (0.4% of the children in the nurse-visited group died before age 9 vs. 1.9% of children in the control group). *This effect was statistically significant at the .10 level, but not the .05 level.*
- The subsample of children whose mothers had low intelligence and/or poor mental health prior to program participation made sizeable gains in academic performance. These children:
 - Scored 9 percentile points higher on Tennessee state reading and math achievement tests in grades 1-3.
 - Had 10% higher reading and math grade point averages (GPA) in grades 1-3.

Effects on the nurse-visited women when their children reached age 9 (vs. the control group):

- 12% less time on welfare during the nine years.
- 13% fewer subsequent live births.

³ Official records of criminal activity and/or delinquency, although not complete, tended to corroborate the mothers' self-reports. Such crime/delinquency records were too incomplete to provide similar corroboration for the children's self-reports.

⁴Olds, David L., Harriet Kitzman, Carole Hanks, Robert Cole, Elizabeth Anson, Kimberly Sidora-Arcoleo, Dennis W. Luckey, Charles R. Henderson Jr, John Holmberg, Robin A. Tutt, Amanda J. Stevenson and Jessica Bondy. "Effects of Nurse Home Visiting on Maternal and Child Functioning: Age-9 Follow-up of a Randomized Trial," *Pediatrics*, vol. 120, October 2007, pp. e832-e845.

- 33% fewer subsequent low birth weight newborns. *This effect was significant at the .10 level, but not the .05 level.*
- 41% fewer substances used in the past three years – i.e. marijuana, cocaine, or moderate-heavy alcohol use. *This effect was significant at the .10 level, but not the .05 level.*

Study 3 (Denver, Colorado, 4-year follow-up)⁵

This was a randomized controlled trial of 490 women in Denver, Colorado. The women were almost all low-income, 46% were Mexican American, 36% were white, 15% were African American, and 84% were unmarried. Their average age was 20. The study had fairly low sample attrition – between 14% and 18% (depending on the outcome measure) at the 4-year follow-up.

Effects on the children of nurse-visited women at age 4 (vs. the control group):

- The subsample of children whose mothers had low intelligence and/or poor mental health prior to program participation made sizeable gains in –
 - Language development (standardized effect size of 0.31⁶);
 - Behavioral adaptation – e.g., attention, impulse control, sociability (standardized effect size of 0.38); and
 - Executive functioning – e.g., capacity for sustained attention, fine and gross motor skills (standardized effect size of 0.47).

Effects on the nurse-visited women when their children reached age 4 (vs. the control group):

- There were no significant effects on most of the women’s outcomes (e.g., welfare receipt, substance use, low birth weight newborns).
- There were a few significant effects, including a 20% longer interval between the women’s 1st and 2nd births.

2. The Parents as Teachers (PAT) program: Few effects on child and parent outcomes found in randomized evaluations.

PAT provides home visitation services by trained parent educators (with a bachelor’s or master’s degree) to mostly low-income women starting in pregnancy or their child’s infancy until kindergarten entry. The visits occur monthly, or sometimes more frequently for at-risk families, and are designed to (i) increase parent knowledge of early childhood development, (ii) improve parenting practices, (iii) detect developmental delays and health issues early, (iv) prevent child abuse and neglect, and (v) increase children’s school readiness and success. In addition to home visits, the program provides health and developmental screenings, group meetings, and referrals to resource networks. This program has been evaluated in three publicly-available randomized controlled trials that found small or no effects on child and parent outcomes, as follows.

⁵ Olds, David L., JoAnn Robinson, Lisa Pettitt, Dennis W. Luckey, John Holmberg, Rossanna K. Ng, Kathy Isacks, Karen Sheff and Charles R. Henderson Jr., “Effects of Home Visits by Paraprofessionals and by Nurses: Age 4 Follow-Up Results of a Randomized Trial,” *Pediatrics*, vol. 114, no. 6, December 2004, pp 1560-1568.

⁶ To provide a general, intuitive sense of what these “standardized effect sizes” mean, an effect size on child IQ of 0.31 translates to 4.6 IQ points; an effect size of 0.38 translates to 5.7 IQ points, and an effect size of 0.47 translates to 7.1 IQ points.

Wagner and Clayton (1999) report the findings of two randomized controlled trials of PAT, with samples of 497 families and 704 families respectively.⁷ The first trial had moderate sample attrition – 27% at the age-2 follow-up; the second trial had high sample attrition – 48% at the age-2 follow-up. Both studies found an overall pattern of weak or no statistically-significant effects on a broad range of parent knowledge/attitudes, child development, and child health outcomes (and the few effects found could have been due to chance, given the large number of outcomes measured). The authors’ stated conclusion is that “the overall effects of PAT in both demonstrations were not large. Neither demonstration achieved consistent positive effects on parenting knowledge, attitudes, or behaviors. Some benefits to children in the area of child development were identified in both demonstrations, although they were small and not consistent across developmental domains.”

The third randomized controlled trial of PAT (Wagner, Spiker, and Linn 2002) was a multi-site trial that randomized 665 families to PAT or a control group, and measured child and parent outcomes at age 2.⁸ This study had high sample attrition – 60% at the age-2 follow-up. The study found no statistically-significant effects on any child developmental outcomes, and few statistically-significant effects on parent knowledge, attitude, or behaviors. The study authors conclude that “the findings from this study revealed that the effects of the PAT program generally were small, with few being statistically significant, and they did not accrue uniformly for all outcomes examined.”

3. Parent-Child Home Program: Few effects on child and parent outcomes found in randomized evaluations.

The Parent-Child Home Program provides paraprofessional home visitation services focused on improving parent-child interactions so as to strengthen children’s cognitive development and early literacy. The home visits are provided twice-weekly over a two-year period, to low-income families with children between ages 2 and 4. This program has been evaluated in two randomized controlled trials, as follows.

The first trial (Madden et. al., 1984) randomized 127 families in 1973 and 1976 (the two cohorts for which three year follow-up data were obtained).⁹ The study had high sample attrition – 47% in the first-grade follow-up, three years after the end of the program. The study found no significant effects on any child outcomes at the three-year follow-up. The study authors conclude: “The goal of the [Parent-Child Home Program] is to prevent educational disadvantage. The first-grade results provide no evidence that this goal has been attained. There were no differences between [program] and control groups in teachers’ ratings of school problems or of socioemotional adjustment in the school setting. Rates of retention in kindergarten and of attendance in special class did not depend on program experience (although first grade may be too early to find program effects on school performance). Nor were any differences found in project-administered achievement or IQ tests We must conclude that, for the setting and families described, the [program] did not achieve its purpose.”

⁷ Mary M. Wagner and Serena L. Clayton, “The Parents As Teachers Program: Results From Two Demonstrations,” *The Future of Children*, vol. 9, no. 1, Spring/Summer 1999, pp 91-115.

⁸ Mary Wagner, Donna Spiker, and Margaret Inman Linn, “The Effectiveness of the Parents As Teachers Program with Low-Income Parents and Children,” *Topics in Early Childhood Special Education*, 22:2, 2002, pp. 67-81.

⁹ John Madden, John O’Hara, and Phyllis Levenstein, “Home Again: Effects of the Mother-Child Home Program on Mother and Child,” *Child Development*, vol. 55, 1984, pp. 636-647.

The second study (Levenstein et. all, 1998) has been cited by program proponents as finding a sizeable effect on participants' high school graduation rates at the 16-year follow-up, compared to the control group.¹⁰ However, we believe the study does not provide strong evidence for such an effect, for the following reasons.

Part of this study was a randomized controlled trial, comparing children who participated in the program in 1979-80 to a randomized control group. This was a very small trial, with 40-45 children randomized (the exact number is not clearly reported), and 39 children in the final sample 16 years after program entry. The other part was a comparison-group study, in which the same control group was compared not only to the randomized treatment group, but also to the children who participated in the program in earlier years (1976-1978).

Both components of this study found that the treatment group had a higher graduation rate than the control (or comparison) group. However, in neither case did the effect approach statistical significance, after the authors adjusted for the fact that the treatment group had higher pre-program IQ scores (as toddlers) than the control group. So the effect, while tantalizing, could well have been due to chance rather than to the program. (The p-value in the randomized controlled trial was 0.39, and the p-value in the comparison-group study was 0.28, neither of which is close to significance.)

4. Healthy Families New York – HFNY: Randomized evaluation finds promising initial effects on child outcomes, but many appear to diminish after the first program year.

HFNY is a home visitation program for new or expectant parents deemed to be at risk of abusing or neglecting their children. The program is based on the Healthy Families America model, and provides home visits by paraprofessionals starting in pregnancy and continuing until the child reaches age 5. The program seeks to (i) promote positive parenting skills and parent-child interaction; (ii) prevent child abuse and neglect; (iii) support optimal prenatal care, and child health and development; and (iv) improve parents' self-sufficiency.

HFNY was evaluated in a large, multi-site trial that randomized 1,254 women and had a follow-up two years after random assignment, with low sample attrition (21% at the two-year follow-up).¹¹ For the *whole sample* of women, there were positive, statistically-significant effects on about one-third of the child abuse/neglect outcomes measured at the end of year 1, but these effects had mostly diminished to insignificance by the end of year 2 (at which point only 1 measure out of 16 was statistically significant at the 0.05 level, 2 at the 0.10 level). At neither year 1 nor year 2 was there an effect on substantiated official reports of child abuse and neglect. A recent follow-up at year 3 with a representative subsample of 643 women found positive effects on mothers' use of positive parenting

¹⁰ Phyllis Levenstein et. al., "Long-term Impact of a Verbal Interaction program for At-Risk Toddlers: An Exploratory Study of High School Outcomes in a Replication of the Mother-Child Home Program," *Journal of Applied Developmental Psychology*, vol. 19, no. 2, 1998, pp. 267-285.

¹¹ Dumont, Kimberly A, Susan Mitchell-Herzfeld, Rose Greene, Eunju Lee, Ann Lowenfels and Monica Rodriguez, "Healthy Families New York (HFNY) Randomized Trial: Impacts on Parenting after the First Two Years," Office of Children and Family Services Working Paper #1, June 2006. Dumont, Kimberly, Susan Mitchell-Herzfeld, Rosa Greene, Eunju Lee, Ann Lowenfels, Monica Rodriguez, and Vajeera Dorabawila, "Healthy Families New York (HFNY) randomized trial: Effects on early child abuse and neglect," *Child Abuse and Neglect*, 2008, vol. 32, no. 3, pp. 295-315. Lee, Eunju, PhD., et al, "Reducing low birth weight through home visitation," *American Journal of Preventive Medicine*, vol. 36, no. 1, 2009. Dumont, Kimberly A, et. al, "Effects of Healthy Families New York on Maternal Behaviors: Observational Assessments of Positive and Negative Parenting," New York State Office of Children & Family Services Working Paper, July 2008.

strategies (e.g., listening, praising), as rated by trained observers, but no reduction in negative parenting behaviors (e.g., use of threats, blaming, fighting).

For the *subgroup of mothers enrolled by 30 weeks gestation*, the study found a statistically significant and potentially important reduction in the incidence of low birth weight newborns (from 10% to 5%), but no significant effect on preterm births or the percent of children born small for gestational age.

For the *subgroup of first time mothers under age 19 enrolled by 30 weeks gestation*, the study found a trend toward positive effects on child abuse/neglect outcomes, but for most outcomes – 14 out of the 16 measured in year 2, and 7 of 9 measured in year 3 – the effects did not reach statistical significance at the 0.05 level (possibly because of the small sample size) and so are not certain.

Our overall thought is that the evidence of effectiveness, although suggestive, is not strong enough at this point to justify broad program expansion because (i) many of the effects appear to diminish after year 1; and (ii) the few statistically-significant effects found in years 2 and 3 might have appeared by chance, given the large number of outcomes measured, and so warrant corroboration in additional studies.

5. Hawaii Healthy Start: Few effects on child and parent outcomes found in a randomized evaluation.

Hawaii Healthy Start is a large, statewide program in Hawaii that provides home visits by trained paraprofessionals to mothers who (i) have just given birth and (ii) whose families are identified as at-risk of child abuse and neglect based on risk factors like parental substance abuse, poor mental health, or history of domestic abuse. Paraprofessionals visit these women for the first three to five years of their child's life and (i) help parents with crises; (ii) model problem-solving skills, (iii) help parents access needed social services, and (iv) provide parenting education. The program has served as a model for many other U.S. paraprofessional home visitation programs, coordinated by the Healthy Families America organization.

There has been one published randomized controlled trial evaluating this program (Duggan et. al, 2004) – a multi-site trial of 685 families, which followed program participants and a control group for three years after program entry, and had fairly low sample attrition (19% at the three-year follow-up).¹²

The study found weak or no effects on all major outcomes. The study authors conclude: “At the outset of this study, we hypothesized that the HSP [Hawaii Healthy Start Program] model would prevent child abuse and neglect However, we found little program impact in preventing child abuse. The HSP and control groups did not differ in indicators of severe abuse HSP and control group mothers were similar on measures of less severe abuse HSP mothers were less likely to report neglectful behaviors There were very few instances where program impact achieved even our cutoff of a trend within population subgroups or for families with a high dose of service. Instances included program effects in both favorable and unfavorable directions and showed no pattern, suggesting they resulted from chance.”

¹² Anne Duggan et. al., “Randomized trial of a statewide home visiting program: impact in preventing child abuse and neglect,” *Child Abuse & Neglect*, vol. 28, 2004, pp. 597-622.

6. Healthy Families Alaska: Few effects on child and parent outcomes found in a randomized evaluation.

Healthy Families Alaska is a statewide program, based on the Healthy Families America model, that provides home visits by trained paraprofessionals to women who (i) are pregnant or have just given birth and (ii) whose families are identified as at-risk of child abuse and neglect. Paraprofessionals visit these women for the first three to five years of their child's life, with the goal of promoting positive parenting (e.g., by role modeling), child health (e.g., by facilitating access to health care), and child development (e.g., by screening and making referrals for developmental delay).

There has been one randomized controlled trial evaluating this program (Duggan et. al., 2007 and Caldera et. al., 2007)¹³ – a multi-site trial of 364 women, which measured outcomes at the child's second birthday and had low to moderate sample attrition (18-32% at the age-2 follow-up, depending on the outcome measure).

At age 2, the study found weak or no effects on (i) child maltreatment (e.g., official reports of abuse or neglect, hospitalizations); (ii) parental risks for child maltreatment (e.g., substance use, partner violence); or (iii) parental attitudes and disciplinary strategies. The study authors conclude that “the program did not prevent child maltreatment, nor reduce the parental risks that made families eligible for the service.”

However, at age 2 the study did find statistically-significant positive effects on some measures of child development and behavior (e.g., 58% of treatment group children scored in the normal range of child mental development, versus 48% of the controls). Although suggestive, such positive findings need to be corroborated in future studies because they could have appeared by chance given the large number of outcomes measured in this study (of over 100 effects the study measured at age 2, 13 were statistically significant).

7. Healthy Families San Diego – HFSD: Few effects on child and parent outcomes found in a randomized evaluation.

HFSD was a demonstration project that implemented and evaluated an enhanced version of the Healthy Families America model. Specifically, HFSD provided home visits by trained paraprofessionals to women who recently gave birth and were identified, with their child, as being at-risk of child abuse and neglect. Paraprofessionals visited these women from their child's birth through the child's third birthday. The home visits were supplemented by center-based support groups and parenting classes, and case management services. The goals were to strengthen parent-child attachment, and improve child development and health.

HFSD was evaluated in a randomized controlled trial that randomized 515 women to HFSD or a control group and had a three-year follow-up (around the child's third birthday).¹⁴ The trial had low sample attrition (20% at the three-year follow-up).

¹³ Anne Duggan et. al., “Impact of a Statewide Home Visiting Program To Prevent Child Abuse,” *Child Abuse & Neglect*, 2007, pp. 801-827. Debra Caldera et. al., “Impact of a Statewide Home Visiting Program on Parenting and Child Health and Development,” *Child Abuse & Neglect*, 2007, pp. 829-852.

¹⁴ Landsverk J, Carrilio T, Connelly CD, et. al., *Healthy Families San Diego Clinical Trial: Technical Report*, Child and Adolescent Services Research Center, San Diego Children's Hospital and Health Center, 2002.

At the year 3 follow-up, the study found weak or no effects on most measured outcomes, including: (i) maternal life course (e.g., high school degree); (ii) home environment (e.g., substance use); (iii) maternal mental health; (iv) partner violence; (v) parenting behaviors (e.g., home learning environment, mother-child interaction); (vi) child immunization rates, medical checkups, and health insurance coverage; (vii) family welfare receipt; and (viii) child behavior, as reported by their mother.

At year 3, there was a trend toward reduced child maltreatment, as reported by the mothers (e.g., reduced psychological aggression, corporal punishment) -- 2 out of 7 measures were statistically significant at the 0.05 level. At years 1 and 2, there was a statistically significant improvement in child cognitive development scores, but this effect had disappeared at the year 3 follow-up.

The study authors' interpretation of the findings is that "Overall, few differences were observed between the intervention and control conditions over the three follow up data points that were in the expected direction and attributable to the intervention."

8. The Home Instruction Program for Preschool Youngsters (HIPPY): Evidence is not strong enough to draw valid conclusions about effectiveness.

HIPPY is an early education program designed to assist parents in preparing their kids (ages 4 and 5) for elementary school. The two-year, home-based program includes bi-monthly home visits by paraprofessionals, and parent-centered group meetings.

HIPPY has been evaluated in one randomized controlled trial in the U.S., in which 247 families in New York were assigned to HIPPY or to a control group (Baker et. al., 1999).¹⁵ The study had moderate-to-high attrition – approximately 40% at the end of first grade and beginning of second grade (roughly one year after program completion). At these follow-ups, the study found mixed effects on educational outcomes -- a positive effect on standardized reading achievement and classroom adaptation for children who entered the program in 1990, but no effect on these measures for children who entered the program in 1991.

However, the study contained an important design limitation that reduces the validity of its results – a violation of "intention to treat." Specifically, families in the intervention group that dropped out of the program within the first month (many because they were "not... prepared for the time commitment the program required") were not tracked and their data were not included in the analysis of outcomes. So, within the first month of the program's start, 31% of the intervention group members were lost to follow-up, compared to 22% of control group members. This likely distilled the intervention group down to the more motivated families, undermining the equivalence of the two groups in motivational level. It's very possible that the difference in motivation between the intervention and control groups, rather than the program itself, caused any superior outcomes observed for the intervention group.

¹⁵ Amy Baker et al., "The Home Instruction Program for Preschool Youngsters," *The Future of Children*, Vol. 9, No. 1, Spring/Summer 1999, pp. 116-133.