Bringing Research to Scale: The Nurse-Family Partnership Program

Prepared for The Colorado Trust

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THE COLORADO TRUST

Mission

The mission of The Colorado Trust is to promote and enhance the health and well-being of the people of Colorado. To fulfill its mission, the foundation supports innovative projects, conducts studies, develops services and provides education to produce long-lasting benefits for all Coloradans. Within the framework of human development, The Colorado Trust advances accessible and affordable health care programs and the strengthening of families.

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BRINGING RESEARCH TO SCALE: THE NURSE-FAMILY PARTNERSHIP PROGRAM

INTRODUCTION

Bringing Research to Scale

The search for effective programs – those capable of producing clear client outcomes – has never been more pressing. Inventories of programs that are proven to work in the fields of maternal and child health have been compiled by the U.S. Surgeon General, [1] the American Academy of Pediatrics, [2] the RAND Corporation,[3] university research centers [4] and individual academic researchers. [5] Each of these inventories laud the Nurse-Family Partnership (NFP) program (also known as Dr. David Olds' Nurse Home Visitation program) as an effective, research-based program that should be replicated in varied community settings. The national replication of this model is being conducted by the National Center for Children, Families and Communities.

This paper looks at how The Colorado Trust (The Trust), a private grantmaking foundation, helped to bring the NFP program to scale in Colorado. In 1993, building on the strong results of two randomized controlled trials conducted by Dr. Olds – one in Elmira, New York, and the other in Memphis, Tennessee – The Trust provided funding to Dr. Olds and the Kempe Prevention Research Center for Family and Child Health at the University of Colorado Health Sciences Center (now known as the National Center for Children, Families and Communities) for a third nurse home visitation randomized controlled trial to be conducted in Denver, Colorado. In 1999, Invest in Kids, now a 501(c)3 nonprofit organization, was funded by The Trust to help bring the NFP program to Colorado communities. Invest in Kids was created in 1996 by a group of Denver attorneys who sought to discover and promote scientifically-based programs designed to improve the lives of Colorado's children.

At the outset, The Trust was particularly interested in determining how this research-based program with effective results could be sustained on a broad scale once foundation support ended. Many creative ventures require the design of mock-up models or idealized versions of products, technologies or systems that then are tested in controlled settings before they are introduced to a broader market. In the social sciences field, large-scale experiments are rarely conducted due to the expense and length of time required to mount these programs successfully. Even less common are examples of successful research programs for which community-scale versions have been developed.

For funders, government agencies and social service agencies, the task of selecting effective programs entails identifying well-evaluated programs that have demonstrated convincing client outcomes and determining the extent to which these programs can be successfully implemented in local communities. The NFP program meets both of these criteria. The program is now being implemented throughout Colorado and in 23 other states. According to experts in home visitation programs who were interviewed for this paper (see Appendix A for a listing of the experts), the experience in bringing the NFP

model to scale in Colorado has been successful due to several factors:

- The strength of the NFP model and its ability to produce results
- The effective organizing work of a local advocacy group, Invest in Kids
- The willingness of a respected legislator (State Senator Norma Anderson) to advocate for the program in the Colorado legislature
- The availability of funds to support the program's dissemination as afforded through Colorado's portion of the settlement proceeds from the U.S. civil case against major tobacco companies [1] (tobacco settlement).

As a foundation, The Colorado Trust enabled many of these key players to work together effectively. To solidify the research base for nurse home visitation, The Trust funded the third replication of the NFP program in Denver. This program sought to demonstrate that the model was appropriate to a Colorado milieu with an added component – determining the effectiveness of nurses conducting the visits as compared to paraprofessionals. Support from The Trust also helped to underwrite the development of the core curriculum and home visit guideline materials, as well as financing the advocacy work of Invest in Kids in promoting the development of the NFP programs throughout Colorado.

1. In 1999, 16 states agreed to a civil settlement with the four biggest tobacco companies under which they would collectively receive $206 billion over a 25-year period. The funds resolve remaining state claims related to the health costs of treating sick cigarette smokers. In exchange for payments starting in the year 2000, the participating states have agreed to drop any future lawsuits related to smoking-related costs incurred by the states. In the first year of funding (1999), $33 million from Colorado's tobacco settlement award was placed in a trust fund.

THE PROGRAM MODEL

Program Components that Maximize Client Outcomes

The Nurse-Family Partnership program has been relatively easy to "sell" to communities, service-providing agencies and government officials in Colorado because of its positive results. The three separate randomized controlled trials – conducted in Elmira, New York; Memphis, Tennessee; and Denver, Colorado – have shown that clients who receive nurse home visitation services experience the following positive outcomes:

- Improvements in women's prenatal health, such as reductions in hypertensive disorders and in the use of cigarettes
- Reductions in children's health-care visits for injuries
- Fewer unintended subsequent pregnancies, and increases in the interval between first and second births
- Increases in women's employment coupled with reductions in the use of welfare and food stamps. [6]

Even more dramatic are the results from the 15 year follow-up with the original participants in the Elmira, New York, randomized clinical controlled trial. The follow-up showed that program participants had experienced:

- Seventy-nine percent reduction in child abuse and neglect
- Forty-four percent reduction in maternal behavioral problems caused by the mothers' use of alcohol and drugs
- Sixty-nine percent fewer arrests among the mothers
- Fifty-four percent fewer arrests and 69% fewer convictions among the 15-year-olds
- Fifty-eight percent fewer sexual partners among the 15-year-olds
- Twenty-eight percent fewer cigarettes smoked and 51% fewer days consuming alcohol among the 15-year-olds
- Four dollars saved in improved client outcomes for every program dollar invested. [6]

Since the Memphis, Tennessee, and Denver, Colorado, studies were conducted more recently, long-term follow-up data are not yet available. To date, results obtained confirm that the NFP program has produced statistically significant effects in the areas of women's prenatal health, infant health and development, and maternal life-course (see sidebar).

The ability of the Nurse-Family Partnership program to produce these results can be attributed to several key components in the program's design: the frequency with which visits are carried out, the use of nurses as home visitors and the content of the home visits themselves, as outlined below. A more detailed description of the program, its theoretical foundation, program design and assessment procedures is provided in Appendix B, at the end of this report.

MATERNAL LIFE-COURSE refers to the paths a mother may take in her life and the impact of these choices on her and her children. This includes such things as the mother's age when her first child is born, the number of children born to her, the amount of time between children born to her, the mother's educational attainment, her work experiences and any dependence on welfare, whether she is married or receives support from the children's father, and any criminal involvement by the mother or her friends and family.

Linking Theoretical Concepts into a Program Design [7]

Frequency of visitation	■ Changes with stage of pregnancy and early child development ■ Can be adapted to the mother's needs ■ Scheduled every one to two weeks until the child is two years old ■ Visits last an average of 75 minutes
Nurses as home visitors	■ Nurses have formal training in women's and children's health ■ Nurses are competent to handle complex clinical situations ■ Nurses are credible in the eyes of the family, increasing the nurses' influence and therefore the clinical influence of the program
Outline of program content	■ Detailed program guidelines link nurse visits to long-term project goals, in particular improving pregnancy outcomes, child health and family economic self-sufficiency ■ Program content is organized developmentally to reflect challenges at different stages of pregnancy and the child's life ■ Assessments are made of maternal, child and family functioning; interventions selected depending on the assessment results ■ Significant others (husband, boyfriend, mother) are encouraged to participate in the home visits ■ Visits may be held at night or on weekends to encourage involvement of others

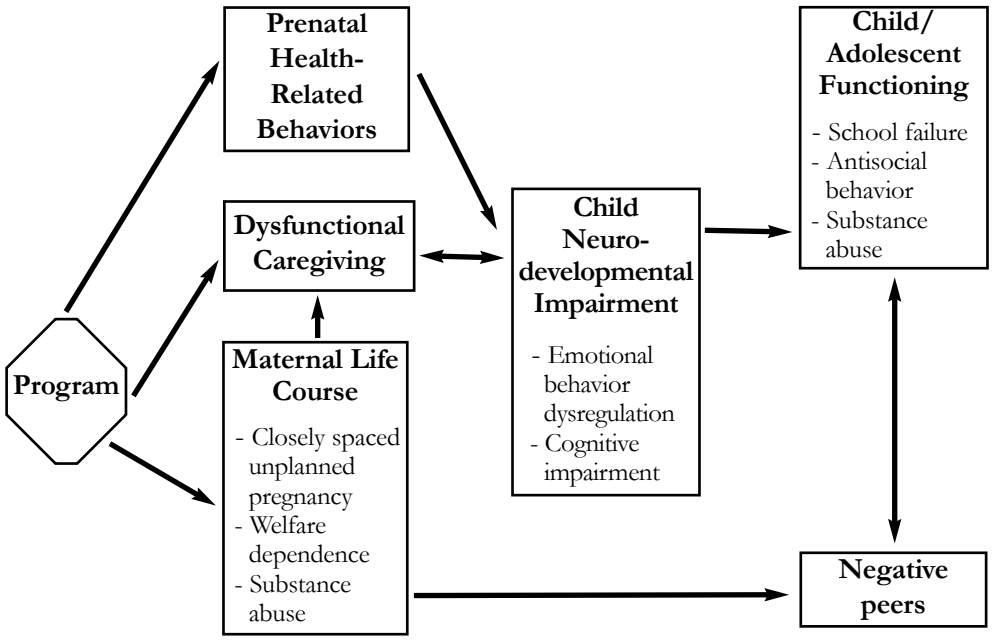
As a model, the NFP program offers a well-designed and conceptually grounded approach to promoting positive changes in clients. The importance of the components listed above have been supported by a rigorous research program that has measured client progress toward program goals, and has shown positive outcomes in different communities and with varied client groups.

Seven steps are recognized by program staff as the process by which generalized support

Steps in Developing a Successful Research-based Model [8]

1.	Ground in theoretical literature to identify clinically effective methods to reduce the specific risks for poor outcomes
2.	Target the program to those most at-risk
3.	Provide comprehensive, intensive services structured to produce behavior change
4.	Deliver these services through competent, well-supervised home visitors with a limited caseload
5.	Design sound research and evaluation
6.	Test programs across multiple domains and within different cultural groups
7.	Allow sufficient time to identify long-term program outcomes

for a research model is created, as listed on the following page.
The logic model below summarizes the client risk factors addressed by the NFP model and the complex interrelationships of these factors. This well-articulated theory of change, combined with 25 years of implementation experience, helps explain the program's success with implementing positive changes in participating mothers and children.



Research and Implementation Costs Associated with the NFP Program

As detailed above, the strengths of the Nurse-Family Partnership program include targeting specific behaviors and conditions associated with poor outcomes, employing a clearly defined model of change grounded in theory and linked to specific types of anticipated client change. As an intervention effort, nurse home visitation also has 25 years of deliberate research protocols that have been sufficiently funded to support three large-scale clinical controlled trials. The specific features of the three randomized controlled trials

Research Documenting the Effects of the Nurse-Family Partnership Program

Location of the clinical trial	Number of women enrolled	Focus of the research	Length of the trial
Elmira, NY	400	Caucasian families; mostly low-income and single parent	1977-present; ongoing
Memphis, TN	1,139	African-American families; primarily low-income and single parent	1987-present; ongoing
Denver, CO	735	Large sample of Mexican-American families; differences resulting from the use of community lay visitors versus nurses	1994-present; ongoing

are listed below.

Data collection related to client outcomes is ongoing, with assessments recently completed of the now 15 year old children born during the 1977 Elmira, New York, trial. In addition to the clients enrolled during these trials who continue to be tracked, the National Center for Children, Families and Communities maintains a data bank with assessment results from approximately 17,000 clients who have received or continue to receive home visits across the country. (All communities that agreed to implement the Nurse-Family Partnership program participate in ongoing program evaluation by providing data on key aspects of program implementation and benchmark outcomes for clients to whom home visits are provided.)

Since the inception of this program in the late 1970s, a wide range of governmental and private funding sources have supported the research through which the program's outcomes have been documented (see chart on page 7). The Colorado Trust's support began in 1993 with an initial investment of $7 million to support the randomized controlled trial conducted in Denver, and an additional $1.7 million grant to finance the community organizing and advocacy efforts of Invest in Kids.

After the Denver research trial, six communities implemented the NFP programs using surplus funds from the federal Temporary Assistance for Needy Families (TANF) program, city and county funding and other local sources of revenue. With the infusion of the tobacco settlement funds, the NFP program will be serving an additional 14 sites covering 38 counties (as of July 2001), with more communities creating NFP programs in the coming years.

Funding Sources for the Nurse Home Visitation Randomized Clinical Controlled Trials, 1977-2000

Bureau of Maternal and Child Health Research
Carnegie Corporation of New York
The Colorado Trust
Hearst Foundation
National Center for Nursing Research
National Institute for Child Health and Development
National Institute of Mental Health
Pew Charitable Trusts
The Robert Wood Johnson Foundation
The Smith Richardson Foundation
U.S. Administration for Children and Families
U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation
William T. Grant Foundation

Despite the clear-cut results that properly implemented NFP programs can produce for some people, the costs of these efforts sometimes overshadow their benefits. The National Center for Families, Children and Communities estimates that providing nurse home visitation services, including program start-up, staff training, operations and program evaluation, to 100 families on average costs approximately $300,000 each year. How has Colorado been so successful in helping people focus on the strong results of the program and establishing so many local programs? Much of the credit must go to the advo-

cacy and community organizing efforts of Invest in Kids.

PROGRAM ADVOCACY

Translating Program Models into Community Settings

In Colorado, successfully bringing the Nurse-Family Partnership research to scale required the assistance of an organization that could bridge the gap between a community's starting point and the requirements of implementing this model program. Invest in Kids, a 501(c)3 nonprofit organization, was established to identify, promote and help implement high quality research-based programs for low-income kids from the prenatal period through age four. Invest in Kids leaders believe that implementing a research-based program requires choosing one with proven results and then building community commitment to establish and maintain that program. In those communities where NFP programs have been developed, the Invest in Kids staff has recruited stakeholder groups from key community sector and a wide variety of backgrounds. As shown in the chart below, some groups were more involved than others at the various stages of the program's development.

Stakeholders Represented in Capacity-Building Groups in 13 Colorado Communities

Stakeholder category	Phase of involvement		
	Initial phase: First three to six months	Ongoing phase: six months through funding	Support phase: advisory board
Health department directors	92%	85%	85%
Human services department directors	77%	77%	77%
Public health nurses	100%	100%	100%
Elected officials	77%	85%	15%
Existing nurse home visitation programs	54%	85%	77%
Other youth agencies (schools, childcare providers, Head Start, child advocacy groups)	15%	54%	85%
Other health providers (hospitals, community health centers and nurse midwives)	15%	77%	54%
City officials, law enforcement, judicial	15%	69%	62%
Business leaders	15%	31%	31%

The Invest in Kids staff found that combining these stakeholders into a committed coalition fully supportive of an NFP program typically requires numerous phone calls, face-to-face meetings and community forums. The chart below shows the community contacts the Invest in Kids staff initiated in the 13 Colorado communities now implementing NFP programs.

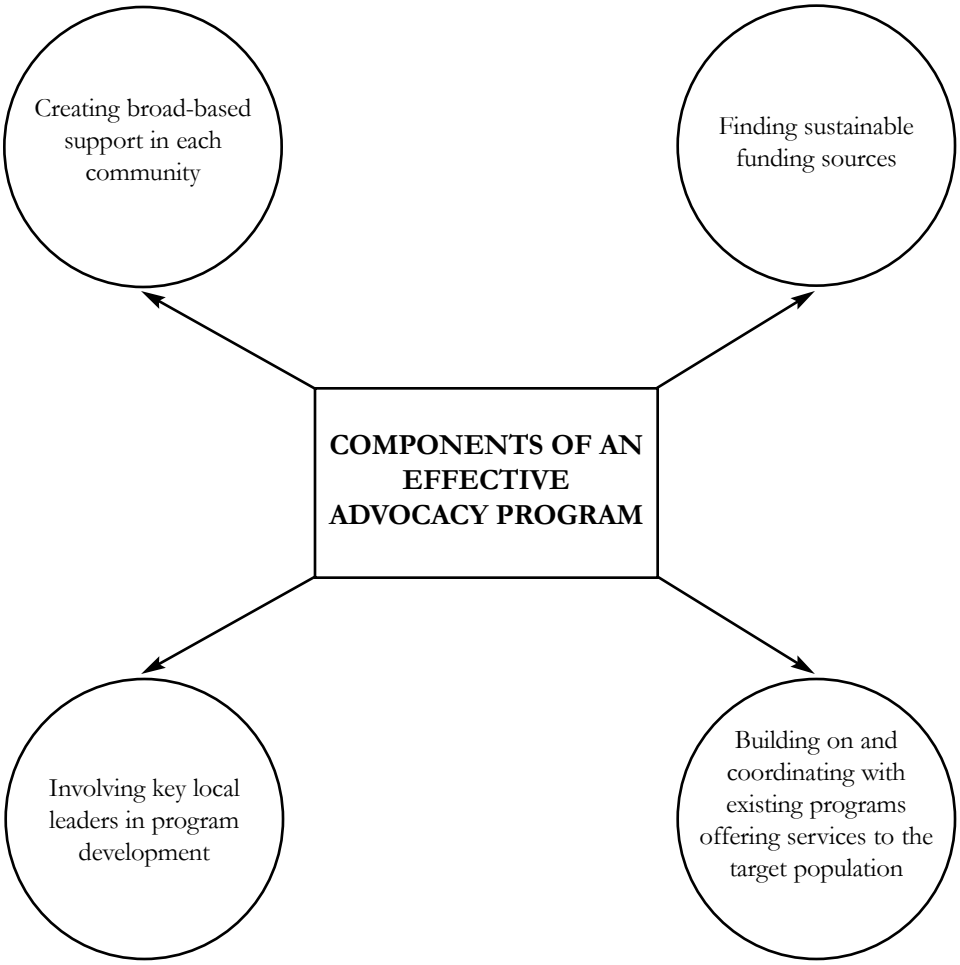
Community Contacts/meetings Committed to Establishing Nurse-Family Partnership Program in 13 Communities over a Two-Year Period During 1999-2001

Type of meeting	Mean number of meetings
INITIAL CONTACTS: Introducing the program	2 per community
COORDINATION: Determining how the program would meet community needs and coordinate with existing programs	1.8 per community
FUNDING: Identifying and securing program funding	1.8 per community
ONGOING SUPPORT: Technical assistance, quality improvement	3.6 per community
TOTAL ALL MEETINGS	9 per community

In a two-year period between 1999 and 2001, the Invest in Kids staff completed:

- 120 community meetings, or an average of nine per community in the 13 communities in which a Nurse-Family Partnership program was established
- 364 to 481 phone calls for meeting set-up and follow through
- 80 one-on-one meetings with state legislators in their districts.

Invest in Kids leaders believe that the following program elements need to be in place to support NFP programs over the long term.



While community interest in the Nurse-Family Partnership program tends to be high, finding an adequate and ongoing source of funding has presented a challenge to many candidate communities. The Invest in Kids staff determined early in its advocacy efforts that more stable, long-term funding support for these programs had to be found. The prospect of securing funds from Colorado's portion of the tobacco settlement became a possibility in 1998 when the availability of these funds was first announced. A task force, headed by the Colorado state attorney general, developed some initial recommendations for Senator Anderson, who introduced a bill in the Colorado Senate that included proposed funding for nurse home visitation programs during the 1999 legislative session. Because of the many interest groups vying for a share of the tobacco settlement's $2.9 billion dollars, the legislature was unable to reach agreement during the 1999 session.

After no compromise was reached in 1999 regarding the distribution of the tobacco settlement dollars, the Invest in Kids staff met throughout the legislature's off-season with 80 legislators to educate them regarding the merits of the NFP program. Because the strongest opposition to the program came from those who viewed the program as

contributing to government intrusion, the Invest in Kids staff pointed to the success of the NFP program in increasing the rates of marriage, decreasing the rates of abortion and, most importantly, reducing the cost of social service programs while working with the established values of families. These one-on-one educational efforts put the NFP program in a strong position to be considered for a portion of Colorado's tobacco settlement funds during the 2000 session. Additionally, the skilled leadership of Senator Anderson, combined with the hard work of several other key legislators, proved to be critical in determining the amount of funding allocated over time to the NFP program relative to other funding options, such as roads and education. Another important factor that encouraged the legislature to underwrite the development of a statewide NFP program was the willingness of the Colorado Department of Public Health and Environment to act as the grantmaking and management agency for this program.

LEGISLATIVE ADVOCACY

The Role of State Legislators in Sustaining Effective Program Models

Despite ever-increasing evidence regarding the effectiveness of prevention programs, few have been successfully sold to the Colorado Legislature as worthy of ongoing funding support. Historically, Colorado has been particularly leery about using state dollars to support social service programs. In 1996, the Tabor Amendment – a taxpayers' bill of rights – passed limiting the overall growth in state funding for any government program to 6% per year. Given these spending limitation preferences, Colorado's legislative environment was not likely to be immediately receptive to a relatively expensive service delivery program, regardless of how effective it may be.

Senator Norma Anderson, a state legislator from Jefferson County, Colorado, was willing to champion the NFP program. A highly respected, 15-year veteran in the Colorado Legislature, Senator Anderson has been an advocate for many women's and children's issues. For Senator Anderson, the NFP program was appealing because of its strong evidence base of positive results. She said,

> "I think legislators strongly believe in prevention care (for nurse home visitation), the outcomes, the results and the long-term savings – that is what swayed them. When you talk about a 60% reduction in juvenile delinquency, that's pretty astounding. . . Nurse home visitation has the research to prove that (Dr. Olds') program works."

Recognizing the high level of competition for the tobacco settlement funds, Senator Anderson worked tirelessly to ensure that a portion of the settlement funds would be allocated to the NFP program.

During the 2000 legislative session, the advocacy efforts of Invest in Kids and Senator Anderson paid off, and the NFP program became one of the major beneficiaries of the plan by which the tobacco settlement dollars will be allocated. The final allocation of funds to this program was a compromise, but one that nonetheless funded the NFP program for the next 25 years. In addition to the immediate funds made available to the program, Senator Anderson was able to allot a large portion of the annual payment into a trust fund, the interest from which will allow community-level NFP programs to be funded well beyond the next 25 years.[9] As shown in the table on the next page, the increases in funding are incremental, allowing the program to expand at a manageable rate of growth. To further support the NFP programs, negotiations are currently underway to secure Medicaid matching funds for NFP programs.

Allocation of Tobacco Settlement Funds to Nurse-Family Partnership Programs in Colorado

Year	Percent of settlement funds allocated to NFP programs	Estimated dollars available through the settlement funds
2000-2001	3%	$2.3 million
2001-2002	5%	$4.1 million
2002-2003	7%	$6.8 million
2003-2004	9%	$8.8 million
2004-2005	11%	$9 million
2005-2006	13%	$10.6 million
2006-2007	15%	$12.3 million
2007-2008	17%	$14 million
2008-2026	19% per year	$16 to $17.8 million (estimated)

Given this level of support, Invest in Kids expects that Colorado will be able to fund an average of two to four additional NFP program sites per year, each serving roughly 100 clients. Invest in Kids estimates that these programs will each be staffed by four full-time nurses, a half-time nurse supervisor and additional support staff.

CONCLUSION

Bringing Research to Scale

As a foundation, The Colorado Trust has had an ongoing commitment to funding effective program models that can demonstrate results and continue once foundation support is no longer available. In the early 1990s, The Trust decided that the early promise of the nurse home visitation program in Elmira, New York, coupled with the emerging successful replication in Memphis, Tennessee, warranted the recruitment of Dr. David Olds, Associate Professor of Pediatrics at the University of Rochester and developer of the NFP program, to initiate such a program in Colorado. This third randomized controlled trial in Colorado sought to examine the relative value of using nurses versus paraprofessionals for the home visitations.

With positive results emerging in the late 1990s from the Denver, Colorado, trial, The Trust decided to provide support for Invest in Kids. This Colorado-based advocacy and community development organization was developed to serve as an adjunct to Dr. Olds' National Center for Children, Families and Communities, which was focusing on the national dissemination of the NFP model. To the credit of the National Center, much of the material needed for program dissemination in Colorado already was available when Invest in Kids began its work:

- Program outcomes had been convincingly replicated across three community locations with different target client populations since 1977 (see chart on page 6).
- The content of the program had been fully developed in terms of visit-by-visit guidelines and training requirements, and associated materials had been tested in various settings.
- The implementation requirements, in terms of staff recruitment, program administration and ongoing program support, had been fully documented.

The ultimate success of Invest in Kids in facilitating the implementation of NFP programs across Colorado also can be attributed to the fortuitous availability of funding through Colorado's portion of the tobacco settlement and the leadership of Senator Anderson in ensuring that a portion of these funds was allocated toward the NFP program.

The partnering necessary to bring the NFP model to scale in Colorado took place over seven years, from the original funding of the Denver trial by The Colorado Trust in 1993 to the decision to allocate tobacco settlement dollars to the NFP program in 2000. As chronicled in this paper, each partner in the process had a critical and interdependent role, one in which the various players complemented and reinforced their capacities in disseminating this model across a wide variety of Colorado communities.

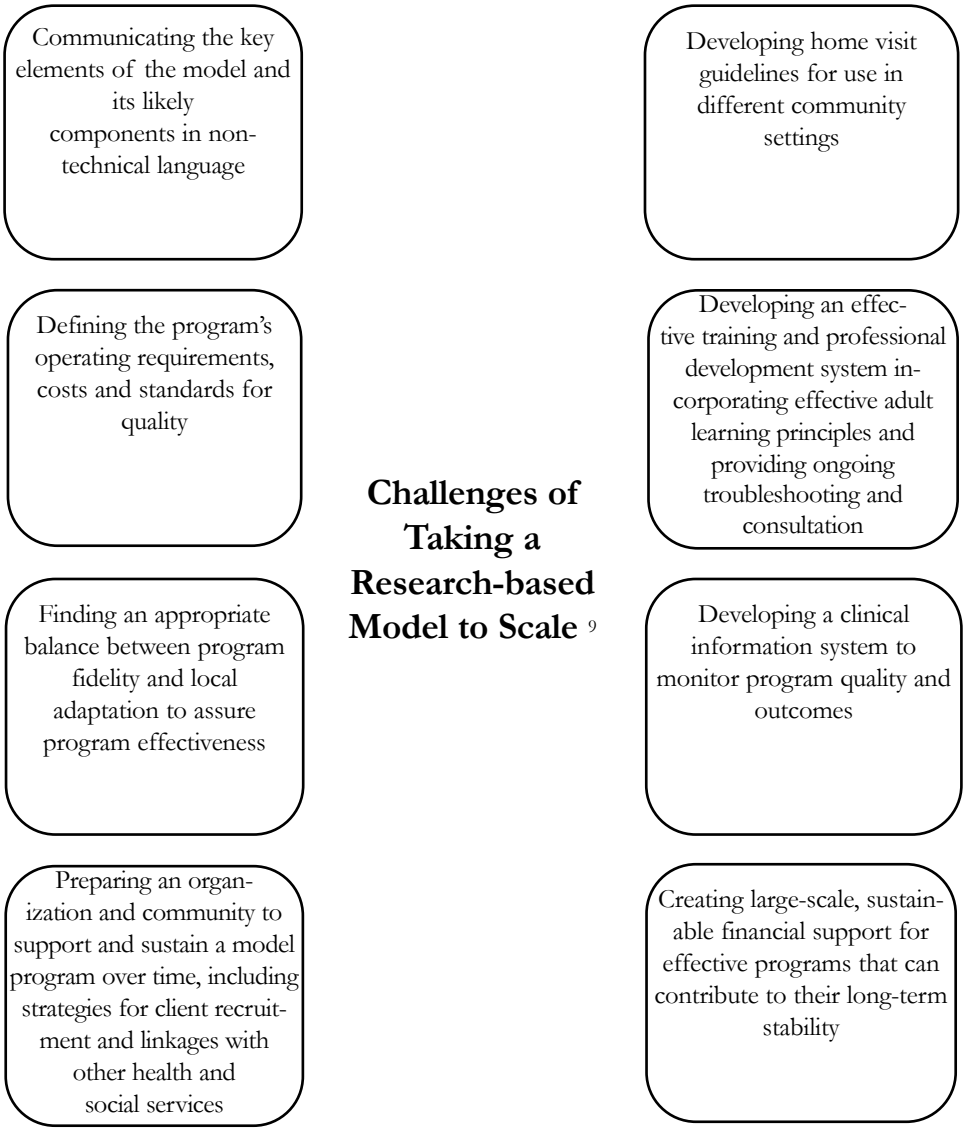
The experience of bringing the NFP model to scale in Colorado suggests that the following factors are part of the formula for success:

- Adequate initial funding for demonstration research and advocacy (as provided by The Colorado Trust)
- Strength of the NFP model in terms of having demonstrated outcomes and well-specified protocols for dissemination and replication as developed by the National Center for Children, Families and Communities
- Efficacy of a community-oriented advocacy group (e.g., Invest in Kids) willing to create broad-scale and ongoing community support for NFP programs and to

educate legislators about the program

- Willingness of a lead state agency (e.g., the Colorado Department of Public Health and Environment) to administer the distribution of the tobacco settlement funds and to award competitive contracts to community-based NFP programs
- Availability of additional dollars (e.g., tobacco settlement funds) that allows legislators to fund NFP programs without taking funds from other programs or needing to increase revenues
- Support and commitment of a legislative leader (e.g., Colorado State Senator Norma Anderson) willing to promote the NFP programs.

At a program level, staff from the National Center for Children, Families and Communities have outlined further steps they have taken to promote the widespread dissemination of NFP programs in Colorado and other states.
The lessons of this experience underscore the complexity of bringing research to scale and



explain, in part, why so few programs have been able to do so. Yet, the success of the Nurse-Family Partnership program in becoming an institutionalized part of the Colorado health and human services landscape offers promise that other evidence-based programs also can be brought to scale and implemented more broadly in local community settings.

APPENDIX A

Experts interviewed

Colorado State Senator Norma Anderson

Jennifer V. Atler, J.D.
Executive Director
Invest in Kids

Peggy Hill, M.S.
Associate Director
Prevention Research Center for Family and Child Health
University of Colorado Health Sciences Center

David Olds, Ph.D.
Professor of Pediatrics and Director
Prevention Research Center for Family and Child Health
University of Colorado Health Sciences Center

APPENDIX B

COMPONENTS OF THE NURSE-FAMILY PARTNERSHIP PROGRAM THAT CONTRIBUTE TO ITS EFFECTIVENESS

Risk Factors Addressed by NFP Program

Many of the preconditions that put women at risk for poor birth and parenting outcomes have been found to be interrelated. Mothers who give birth at closely spaced intervals tend to be at risk for welfare dependency. Their children are more likely to be born at a low birth weight and to exhibit early on-set antisocial behavior. In addition, environmental factors such as unemployment and poor housing create stressful household situations that have been associated with higher rates of child abuse and neglect. By identifying the modifiable risk factors associated with poor birth and parenting outcomes, the Nurse-Family Partnership program seeks to maximize the chances that improvements can be realized. The chart below synthesizes the various risk situations toward which the NFP program directs its efforts.

Modifiable Risk Factors by Problem Area [10]

Low birthweight, preterm delivery and neurodevelopmental impairment	Child abuse; neglect and injuries to children	Welfare dependence and compromised maternal life-course development	Early on-set antisocial behavior
Use of tobacco Use of alcohol and other substances Inadequate weight gain, inadequate diet, inadequate prenatal care, unattended obstetric complications	Mother's psychological immaturity and mental health problems Environmental factors that create stressful household situations A history of punitive, rejective, abusive or neglectful parenting Challenges parents face when their young children have compromised neurodevelopmental functioning	Families where parents are teenagers, unmarried and poor Women who have rapid, successive and subsequenct pregnancies Women who have little control over their life circumstances and contraceptive practices, and limited visions for their own personal development in the areas of education and work	Neuropsychological deficits, in part related to poor prenatal health conditions Dysfunctional caregiving Compromised maternal life-course (e.g., large family size, closely spaced children, parental criminal involvement and welfare dependence

Theories That Guide the Nurse-Family Partnership Program in Terms of Behavior Change

The Nurse-Family Partnership program uses three theories of human development and change to target the ways in which a mother's behavior can be modified, namely the self-efficacy, human attachment and human ecology theories. The strength of the NFP program rests with the translation of these theoretical building blocks into program elements that are

part of the nurse home visit guidelines. Examples of these theoretical translations are summarized in detail on the following tables. In brief, some of the key theoretical components that have been incorporated into the home visiting model are as follows:

- Since individuals are more likely to have a sense of mastery when they have experienced success, the Nurse-Family Partnership program helps women set small achievable objectives for behavior changes that strengthen their confidence that they can cope with similar problems in the future.
- Because many women seek help from caregivers during times of stress, the nurse home visitors use the opportunity of a mother's first pregnancy to create empathetic relationships that help to model positive caring relationships.
- The nature of the mother-child relationship is dependent on the quality of the mother's relationships with others in her immediate environment; hence, the Nurse-Family Partnership program encourages improved relationships with partners and other family members.

Theoretical Foundations of the Nurse-Family Partnership Program for Pregnant Women and Parents of Young Children

Self-Efficacy Theory [11]

Theory components	Application within the model
Differences in motivation and behavior are a function of individuals' beliefs about the connection between their efforts and their desired results.	Role modeling is encouraged through the development of warm, caring relationships between the visitor and her client.
Individuals understand that certain behaviors lead to given outcomes.	The education component of the NFP program was designed to bring women's outcome expectations into alignment with the best evidence available about the influence of specific behaviors and conditions on maternal and child health.
Efficacy expectations are individuals' belief that they can successfully carry out the behavior required to produce the desired outcome.	The Nurse-Family Partnership program helps women to set small, achievable objectives for behavioral change that, if accomplished, are designed to strengthen their confidence in coping with similar problems in the future.
Four sources of information affect individuals' efficacy expectations: 1) Performance accomplishments 2) Vicarious experience 3) Verbal persuasion 4) Emotional arousal Individuals' sense of mastery is raised with perceived successes and lowered with failures.	Women are encouraged to carry out desired behaviors. Problem-solving skills are explicitly taught, with visitors helping women to anticipate common problems and to devise methods of coping with those problems.

Human Attachment Theory [12]

Theory components	Application within the model
Human beings have developed a repertoire of behaviors that promote interactions between caregivers and their infants. Sensitive and effective responses to those communications promote secure infant attachment.	Sensitive, responsive and engaged caregiving is encouraged in the early years of the child's life. Parents are given information to correctly read and respond to infant cues through parent-infant curricula.
Caregivers' levels of responsivity to their children can be traced to caregivers' own childrearing histories and attachment-related experiences.	Parents are encouraged to review their own childhood histories and make proactive choices about how they will care for their own children.
Humans are biologically predisposed to seek proximity to specific caregivers in times of stress, illness or fatigue in order to promote survival. Individuals who do not receive consistent and responsive caregiving develop mistrusting views of others.	The Nurse-Family Partnership model encourages visitors to develop an empathetic relationship with the mother and other family members where possible. By making efforts to maintain a consistently supportive relationship with parents, the visitor shows the parent that positive, caring relationships are possible. The helping relationship becomes a corrective emotional experience for parents who experienced neglectful and abusive relationships in their own childhoods.

Human Ecology Theory [13]

Theory components	Application within the model
The Nurse-Family Partnership program emphasizes the development of parents because their behavior constitutes the most powerful and potentially alterable influence on a developing child, particularly given parents' control over their children's prenatal environment, their face-to-face interaction with their children postnatally and their influence on the family's home environment.	DEVELOPMENT OF PARENTING SKILLS: Women selected with no previous live births; they undergo a major ecological or role transition (e.g., the mother's first pregnancy). Program initiated during pregnancy and the early years of a child's life when parents are learning the parental role. Skills obtained during the care of the first child would carry over to subsequent children. Attention given to the evaluation and improvement of the material and social environment of the family.
One of the central hypotheses of the human ecology theory is that the capacity of the parent-child relationship to function effectively as a context for development depends on the nature of other relationships that the parents may have.	INFORMAL SOCIAL SUPPORT: The capacity of women to improve their health-related behaviors is influenced by their levels of informal support for adaptive change. Visitors encourage family members and friends to support the mother's attempts to improve her health-related behaviors. Visitors encourage improved relationships with partners and other family members.
Emphasis on the importance of social contexts as influences on human development	USE SERVICES IN THEIR COMMUNITIES: Visitors assess family needs and help them make use of other needed services to reduce situational stresses. Access to primary care providers is developed. Knowledge of maternal and child health indicators is promoted. Visitors also contribute to the improvement of the health and human services system in the communities where they work.

Incorporating the Three Theories into the Program's Design

The preceding sections have detailed the overall structure of the Nurse-Family Partnership model and the ways in which program components are designed to produce improved client outcomes. Through the extensive research conducted on this model, attention also has been given to the intensity, duration and scope of the services offered, as detailed on the chart on the next page.

Linking Theoretical Concepts into a Program Design [14]

Frequency of visitation	■ Changes with stage of pregnancy and early child development ■ Can be adapted to the mother's needs ■ Scheduled every one to two weeks until the child is two years old ■ Visits last an average of 75 minutes
Nurses as home visitors	■ Nurses have formal training in women's and children's health ■ Nurses are competent to handle complex clinical situations ■ Nurses are credible in the eyes of the family, increasing the nurses' influence and therefore the clinical influence of the program
Outline of program content	■ Detailed program guidelines link nurse visits to long-term project goals, in particular improving pregnancy outcomes, child health and family economic self-sufficiency ■ Program content is organized developmentally to reflect challenges at different stages of pregnancy and the child's life ■ Assessments are made of maternal, child and family functioning; interventions selected depending on the assessment results ■ Significant others (husband, boyfriend, mother) are encouraged to participate in the home visits ■ Visits may be held at night or on weekends to encourage involvement of others

Measuring the Effects of the Program

During the three randomized controlled trials, the specificity with which the program goals were defined also were matched by careful measurement instruments designed to detect the program's effects. Each of the three randomized controlled trials was developed to continue to test and refine the program's effectiveness. In addition to maternal and child assessments conducted by independent data gatherers (not the home visitor), secondary records were reviewed, including birth certificate information, pediatric and hospital records and welfare files. Currently, the Nurse-Family Partnership programs in Colorado and the other 23 states are also being monitored through less intensive evaluation protocols that assess program implementation and maternal and child functioning.

Location of study	Special study factors	Assessment tools utilized
Elmira, NY	■ Investigators heavily involved in program implementation ■ Same nurses worked with families for the duration of the program ■ Community had the highest rates of reported and confirmed cases of child abuse/neglect in the state when the study began ■ Community had the worst economic conditions among all Standard Metropolitan Statistical Areas in the country ■ Women were recruited at less than 26 weeks gestation	■ Assessments conducted at registration, at end of pregnancy, at months six, ten, 22, 24, 34, 46 and 38 of the child's life, and at the child's 15th birthday ■ Self-reports by clients of cigarette, marijuana and alcohol use ■ Chemical test to determine any tobacco use by mother during pregnancy ■ Obstetrical, newborn and pediatric medical record reviews ■ Child protective service record reviews ■ Tests on children for mental development and IQ ■ Observations of the home environment ■ Maternal reports of subsequent pregnancies, partner relationships, continuing education and work ■ Aid to Families with Dependent Children (AFDC) record reviews ■ Maternal reports of arrests and convictions ■ Adolescent reports of arrests and convictions
Memphis, TN	■ Investigators were less involved in program administration ■ The program experienced high nursing turnover ■ Program able to reduce dysfunctional care of children and improve maternal life course, but its impact on improvement of pregnancy outcomes was equivocal ■ Absence of effect on pre-term delivery may be related to lower rates of cigarette smoking among African-Americans	■ Assessments conducted at registration, at 28 and 36 weeks prior to birth, and postpartum at months six, 12 and 24 ■ Self-reports by clients of cigarette, marijuana and alcohol use ■ Obstetrical, newborn and pediatric medical record reviews ■ Tests on children for mental development ■ Observations of the home environment ■ Maternal reports of subsequent pregnancies, partner relationships, continuing education and work ■ AFDC record reviews
Denver, CO	■ Designed to examine the effectiveness of paraprofessional versus nurse home visiting as a means of improving prenatal health behaviors ■ Clients recruited included a much larger proportion larger representation by Mexican-American women than in Elmira or Memphis.	■ Assessments conducted at registration, at weeks 36 of pregnancy, and at months six, 12, 15, 21 and 24 of the child's life. ■ Self-reports by clients of cigarette, marijuana, and alcohol use ■ Chemical test to determine any tobacco or drug use by mother during pregnancy ■ Obstetrical, newborn and child medical record reviews ■ Tests on children for language and mental development ■ Observations of infants' emotional responsiveness ■ Observations of the home environment ■ Maternal reports of subsequent pregnancies, partner relationships, continuing education and work ■ AFDC record reviews

SUMMARY

As summarized in the overall report and these appendices, the Nurse-Family Partnership program is constructed to address very specific types of behavior change in participating mothers. These behavioral changes have beneficial impacts on the participating clients' lives and those of their children. More than 20 years of experience have confirmed that it is not sufficient to expect these types of changes unless:

- The NFP program targets people who are at risk for poor outcomes.
- The program targets specific risks and protective factors thought to affect maternal and child health outcomes.
- The nurse home visit guidelines incorporate specific targets for behavior change that reinforce the strengths of individual clients.
- The focus of the nurse home visits lies in building on the individual strengths of clients.
- The visit schedule is sufficiently long in duration to promote sustained behavior improvements.
- The visits are conducted by trained nurse home visitors who understand how to promote behavior change.

The NFP program requires a two-and-a-half year commitment on the part of the participating clients, but the results demonstrate the value of this type of long-term visitor/client contact. For many of the mothers who have participated in the NFP program, the relationships they have developed with their nurse home visitors are the among the first sustained, caring relationships they have experienced. It is the strength of these relationships that form the foundation on which subsequent improvements in the clients' lives are built.

In light of this extensive discussion of what the NFP program sets out to achieve, it also is instructive to note what is does not do. While the NFP program focuses on training mothers and fathers to become better parents and to relate to their young children, the program does not provide direct health services. Moreover, improvements in the economic situations of their clients are promoted by coaching clients toward school completion, planning subsequent pregnancies and finding and keeping adequate employment. It also is important to note that despite the evidence of client benefits 15 years after the program, the actual contacts between the visitors and their assigned mothers do not formally continue after the child's second birthday.

The Nurse-Family Partnership program represents a prototype for how effective prevention programs work. In comparison with many single-focus programs, this program uses a focused intervention to encourage changes in the behavior of women at a critical juncture in their own lives and the lives of their children. The birth of a child, particularly a first child, presents a unique and life-altering opportunity for mothers to understand and respond to their children's needs and to nurture their optimal early development. These changes can have lifelong consequences for the mothers and their children.

At its essence, the Nurse-Family Partnership program seeks to enhance the earliest bond between mothers and their children, a relationship that influences the child's health, social behavior and physical well-being. These changes improve the mother's welfare as well, increasing her sense of self-esteem and competency and ultimately leading to more general improvements in her own life. What better investment in the future can be made than to provide a firm foundation for mothers and their children to improve their relationship with one another as a basis for allowing each to become more productive and healthy citizens?

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