



A Home-Visitation Program
for Women Pregnant for the First Time and
First-Time Families and Their Newborns



LOS ALAMOS NATIONAL LABORATORY FOUNDATION

MODEL REPLICATION INITIATIVE



Los Alamos National Laboratory (LANL) Foundation
First Born[®] Program
Model Replication Initiative for Northern New Mexico
(Revised July 2007)

Introduction

The First Born[®] Program (FBP) is a hospital- or clinic-based, educational, home visiting program designed to improve the health and wellness status of first-time families. Originally developed and implemented in Grant County, the program provides families with the education, training, and support necessary to ensure a child's positive health as well as social and emotional development, from prenatal to three years of age—the most important period for early brain development.

The FBP uses clinically trained, degreed and non-degreed professionals to provide first-born children and their parents with support, education, training, and referral to resources designed to promote early childhood development. All services are free and are targeted to women pregnant for the first time and first-time families regardless of economic or medical status. Services may begin anytime during pregnancy, at the birth of the baby or during the first two months of the baby's life and continue until the child is 36 months or family goals have been achieved. At the core of the FBP is the conviction that a healthy pregnancy and childhood are not only critical to the immediate well-being of the child but are also basic to building a resilient and competent family.

Promoting maternal health through good prenatal care can reduce the chances of preterm births, low birth weight, and fetal exposure to alcohol, tobacco, and other drugs, all of which can contribute to the increased likelihood of substance abuse, health risks, and violence later in a child's life. FBP of Grant County has demonstrated that promoting positive, loving, secure parenting can reduce subsequent unintended pregnancies, child abuse, and other adverse childhood events.

Home visiting is a proven strategy for reaching children and families to identify needs and address potential issues that could become more serious and costly later on if not identified and addressed early. Research has shown that new families who receive home visits starting during pregnancy and continuing through age three demonstrate reduction of emergency room use; increased pregnancy intervals; improved child safety; reduction of substance abuse; reduction of child abuse and neglect; improved economic well-being, and improved school readiness.

A comprehensive, interactive curriculum is available to all participating families. Based on family input and learning style, this flexible curriculum is tailored to meet their needs. The

following information is available for families to use as needed: physical and emotional changes during pregnancy; expectations of childbirth; encouraging infant growth and development; nurturing positive relationships through bonding and attachment; breastfeeding; creating safe and stimulating environments; selecting toys and books that teach; discovering community resources; working toward solutions for family challenges; and engaging in opportunities for continuing education and on-going learning. The FBP builds on other home visiting and prevention programs that have been shown to improve long-term outcomes of children and their families.¹

Building comprehensive systems for young children requires new ways of doing business at the local, regional and state levels. In 2006, the New Mexico Early Childhood Action Network stated, “There are few economic development strategies that yield higher returns on investment than early childhood development programs.” This is because the most formative and crucial years in the development of a human being are from the womb to the kindergarten classroom. It has been shown that disparities in a young child’s access to positive and nurturing experiences in their families and communities by age six accounts for a significant educational gap at age 18. Federal Reserve Bank of Minneapolis researchers² have identified that investing in early childhood programs produces an annual rate of return of 16% of which 80% accrues to the general public. New Mexico’s investment choices show up in our national rankings. New Mexico has fallen in ranking from 46th in the nation to 48th in indicators of child well-being³.

Establishing the First Born[®] Program in Northern New Mexico

After exploring regional and national programs that build family strengths and competencies through community collaboration and home visiting, the LANL Foundation, in partnership with the Collaborative for Early Childhood Learning—an alliance of early childhood development organizations and government agencies—selected the FBP of Silver City, Grant County to implement in Northern New Mexico. The FBP model was selected because it contained the following elements that the LANL Foundation required for program replication:

- Evidence based, utilizing evaluation protocols and fidelity to program model;
- Developed to meet the unique needs of New Mexican families utilizing a relationship-based approach;
- Cost effective and staffed by a combination of degreed and non-degreed, culturally sensitive professionals who have been trained using the First Born[®] Program training modules;
- Services are free, voluntary and are targeted to first-time families without regard to economic or medical status;
- Based in a medical setting—hospital, Federally Qualified Medical Clinic, Indian Health Clinic;
- Requires community collaboration that is strong, productive and coordinated;
- Implementation of the First Born Core Curricula through home visiting services that include a minimum of 40 home visits per family per year.

¹ de la Rosa, Ivan A., Perry, Joanne, Dalton, Lisa E., Johnson, Victoria, 2005, “Strengthening Families With First-Born Children: Exploratory Story of the Outcomes of a Home Visiting Intervention,” *Research on Social Work Practice*, Vol. 15, No. 5, pp. 323-338.

²Rob Grunewald and Arthur J. Rolnick. (2003) Early Childhood Development: Economic Development with a High Public Return. Federal Reserve Bank of Minneapolis

³ Kids Count: New Mexico. 2006. Annie E Casey Foundation: Baltimore, MD

During 2005, the LANL Foundation worked with the Collaborative for Early Childhood Learning to design the framework for model replication. From March to December 2005, the Collaborative planned and designed the Northern New Mexico program, developing funding strategies and establishing community partnerships with hospitals, clinics and schools in Los Alamos, Rio Arriba, Santa Fe and Taos Counties.

The FBP is funded through public and private sources. In 2006, the LANL Foundation advocated for a \$2 million appropriation for expanded Home Visiting programs based on the FBP model. The New Mexico Legislature appropriated \$1 million in non-recurring funds to support the FBP and \$1 million in recurring funds to CYFD for home visiting programs administered through ValueOptions New Mexico. The LANL Foundation has pledged to match the \$1 million appropriation 2:1 for a total of \$3 million of project funding through FY 09.

As of January 2007, the following members of the FBP Funders Collaborative have matched the \$1 million contract with multi-year pledges and grants received:

- Abeles Foundation
- Azalea Foundation
- Bank of America
- Brindle Foundation
- Con Alma Health Foundation
- Daniels Fund
- Delle Foundation
- Domanica Foundation
- Frost Foundation
- Los Alamos National Laboratory Foundation
- LANL Foundation Board & Staff
- Los Alamos Technical Associates
- McCune Charitable Foundation
- Nirvana Mañana Institute
- Northern New Mexico Health Grants Group
- Oppenheimer Brothers Foundation

These New Mexican foundations have partnered with the LANL Foundation in a unique statewide funders' collaborative to address early childhood development. Additionally, the LANL Foundation has set aside \$100,000 over ten years to support this initiative.

Program Description

The foundation of the FBP is the belief that a resilient family, beginning with a healthy, low-risk pregnancy, is the most effective and efficient unit for building a healthy and competent society. Weekly home visitation services may begin any time during pregnancy or right after the birth of the baby and continue until the child is three years of age. The FBP model is adaptable and can address identified and unique community priorities. There are essential core elements that must be in place before a FBP can be implemented in a county: hospital/clinic affiliation, community needs assessment, staff trained in FBP protocols, community Memoranda of Agreement, and assurances that the counties will demonstrate fidelity to the model.

The FBP has developed three comprehensive core curricula: the *Prenatal Core Curriculum*, the *First Year of Life Core Curriculum*, and the *Toddler Core Curriculum*. The curricula are designed to actively engage families in the process of parenting using the latest science on brain development, windows of opportunities for learning, and effective ways to manage child behaviors. Home visitors help parents understand the complexity of a child's development within the realm of their own child's cognitive, physical, and emotional development. Parents receive guidance regarding breast-feeding, sleep patterns, immunization rates, language development, toys that teach, and other issues surrounding the birth of a baby and the beginning of a family. Families are also educated about signs and symptoms of post-partum depression and other mental health issues. Through quarterly developmental assessments, developmental delays and warning signs can be identified. Research has shown that early identification of delays and referrals for supportive therapies can significantly enhance the future development potential of a child.

The FBP works to promote healthier families and children by increasing communication and cooperation among all healthcare service providers through referral agreements, service coordination, identification and removal of barriers to care, and by participation in shared training opportunities.

Engaging the Community

The FBP endeavors to engage as many stakeholders as possible with a model that is based on the following equation: When you combine the FBP's assets with the assets of the community in which it is based, a stronger program is created. FBP engages all networks of the community—large and small, formal and informal. The success of the FBP depends on its relationship with local stakeholders including: the medical community (hospitals, clinics, OB-GYNs, Pediatricians, Family Practice physicians, Midwives, etc.); Early Intervention Services (Las Cumbres, FIT Program, Families First, Public Health RNs, etc.); other home visiting programs and community-based service providers; schools; faith-based organizations; Community Health Councils, Maternal Child Health Councils; Juvenile Justice; Philanthropic organizations and many more, as each community has an array of local public, private and non-profit organizations.

The FBP brings an array of resources to a community—new jobs with benefits, experts in the field of prenatal and early childhood issues, purchasing power, and many other resources that positively impact the local economy. Because of the presence of the FBP in Grant County, you often hear those involved in the economic development of Grant County say, “Grant County is a great place to raise a family—we have First Born.” One of the demonstrated outcomes of the FBP is increased community capacity.

First Born[®] Program/Rio Arriba County

FBP/Rio Arriba was established at Española Hospital with the hiring of a Program Director; one RN and 4 Home Visitors were added in February 2007. Staff training occurred in Silver City

during the week of March 5 to 10, 2007; FBP staff participated in Española Hospital orientation during the week of March 12 to 16; hospital and specialized FBP training continues on an on-going basis. Nursing rounds and home visiting services commenced during the week of March 19. By the end of June 2007 over 225 home visits had been conducted.

The populations served by FBP/Rio Arriba are women pregnant for the first time and first-time families who live in Rio Arriba County, including the Pueblos of Ohkay Owingeh and Santa Clara and the Jicarilla Apache Nation. There are approximately 278 first-time births in Rio Arriba County annually. Many of these families live in isolated rural areas with poor availability of prenatal and parenting services. The population density for this region is about 4.2 persons per square mile. Young, rural families often lack adequate support systems and find themselves alone during pregnancy and as they prepare for parenting.

Rio Arriba statistics, when compared with New Mexico averages, are worse for many risk factors that correlate with poor birth outcomes and parenting difficulties. Rio Arriba's high rates of illegal drug use, overall poverty, unemployment, and isolation are associated with poor birth outcomes and parenting challenges. Prenatal risk factors include: one in five babies born in Rio Arriba County is born to a teen (Challenge 2005: Reducing Teen Pregnancy in New Mexico); 70% of the mothers are single compared to the state level of 40% and the national rate of 30% (Office of Vital Records and Health Statistics); fewer than half of the pregnant woman began their prenatal care during the first trimester as compared to a rate of 66% statewide. (New Mexico Department of Health).

A growing body of scientific literature reports higher rates of poor outcomes among children and adults who are exposed to “adverse life events” early in life.^{4,5} Children in New Mexico, and particularly in rural counties of Northern New Mexico, are more likely to experience adverse life events such as child abuse or parental substance abuse in childhood, and youth and adults in this region exhibit extremely poor outcomes relative to their peers around the U.S.⁶ Conscious efforts to enhance the parenting and coping skills of families with newborns and children may reduce stress that has the potential to result in child abuse and/or neglect. All first-time families need and deserve this support regardless of social, medical and/or economic indicators.

First Born[®] Program/Taos

FBP/Taos was established at Holy Cross Hospital in January of 2007 with the hiring of a Program Director. As of March 1, 2007, FBP/Taos had ten part-time home visitors on staff. The hospital received a \$125,000 contract through ValueOptions New Mexico to provide FBP home visiting services. A contribution of \$10,000 from the LANL Foundation was matched by the Nirvana Mañana Institute in the same amount to support start-up costs.

⁴ Felitti, Vincent J., Anda, Robert F., Nordenberg, Dale, Williamson, David F., Spitz, Alison M., Edwards, Valerie, Koss, Mary P., Marks, James S., 1998, “Relationship of Childhood Dysfunction to Many of the Leading Causes of Death in Adults,” *American Journal of Preventive Medicine*, Vol. 14, No. 4, pp. 245-258.

⁵ Flaherty, Emalee G., Thompson, Richard, Litronik, Alan J., Theodore, Adrea, English, Diana J., Black, Maureen M., Wike, Traci, Whimper, Lakecia, Runyan, Desmond, and Dubowitz, Howard, 2006, “Effect of Early Childhood Adversity on Child Health,” *Archives of Adolescent and Pediatric Medicine*, Vol. 160, pp. 1232-1238.

⁶ Koplik, Sara Beth, 2006, *2006 New Mexico KIDS COUNT Data Book*, Albuquerque, NM: New Mexico Voices for Children.

FBP/Taos is structured to deliver services collaboratively with several community organizations offering home visiting services, including: University of New Mexico's Early Childhood Resource Center, Taos Pueblo's BabyFace Program, Northern New Mexico Midwifery Center and the Community Wellness Center's Puentes Program for teen parents.

As of June 2007, more than 500 home visits had been completed. Referrals for FBP/Taos have come from: Holy Cross Hospital, CYFD; Taos County Drug Court; Puentes; Northern New Mexico Midwifery; Taos Clinic for Children and Youth; Women's Health Institute; Family Practice Associates; and Taos Public Health (Families First and WIC programs).

FBP/Taos serves families from Taos and Western Colfax Counties, including Taos and surrounding areas, Questa, Buena Vista, Red River, Peñasco, Angel Fire, Taos Pueblo and Picuris Pueblo. Clients consist of single moms and dads, two-parent homes and adoptive families and range in age from 14 to 43.

First Born[®] Program/Los Alamos

In May 2007, FBP/Los Alamos received a start-up grant from the Northern New Mexico Health Grants Group managed by the Con Alma Health Foundation in the amount of \$20,000. A Program Director has been identified and services will commence in September 2007. FBP/Los Alamos will serve to build a network of services that will provide a foundation of positive physical, social and emotional health for Los Alamos families of firstborn children.

Los Alamos County is the third location as planned for the implementation of the FBP in Northern New Mexico. According to 2004 census figures, the total number of births for Los Alamos County was 201; the estimated number of first births was 80.

In 2006, the Los Alamos County Health Report Card stated that the comprehensive health priorities for Los Alamos County were determined to be substance abuse, suicide and youth violence. The Community Health Council Profile Summary reported that despite low suicide rates, there is an accelerating rate of teen suicide attempts and plans. As studied in the YRRS, protective factors which assist in preventing adolescents from engaging in risk-taking behaviors include: positive and supportive relationships, clear boundaries and expectations, good nutrition, academic success, and meaningful and constructive use of time. These resiliency factors are important components and targeted outcomes of the FBP and are modeled and cultivated by the Home Visitors and directly addressed in the FBP curriculum.

First Born[®] Program Outcomes

The FBP is a family resiliency model that suggests that the more you reduce risk factors and increase protective factors, the more likely you are to succeed in creating healthy and resilient families and children. As a result of the program, participating families are expected to enhance family functioning and develop protective factors that will facilitate their positive development in the short and long term as well as healthier outcomes for the child. Based on current FBP outcomes as implemented over the past ten years in Grant County, counties that implement the FBP model can expect the following:

An increase in the number of resilient pregnant woman who:

- Do not use drugs during their pregnancy;
- Receive consistent prenatal care; and
- Participate in childbirth classes.

An increase in the number of resilient infants who:

- Are immunized, receiving well baby checks with a medical provider;
- Ride in safe car seats that are properly installed;
- Live in a safe and nurturing environment;
- Are achieving normal infant growth and development or are referred for assessment; and
- Are bonded with and have positive relationships with their parents and caregivers.

An increase in the number of resilient parents who:

- Are bonding with their infant and have positive interactions with their infant;
- Are creating safe and nurturing environments for their infant;
- Are increasing their knowledge, skills and insights into the parenting process;
- Are experiencing pleasure in parenting;
- Are continuing their education;
- Do not have unintended pregnancies; and
- Know what community resources are available and how to access those services.

A resilient community that:

- Is active in the community health improvement process;
- Participates in collaborative efforts;
- Forms broad-based community coalitions and alliances that support collaboration; and
- Has increased community capacity.

Additional expected outcomes based on a 10-year longitudinal study to be conducted by the RAND Corporation (see *Evaluation & Research Design*, below) include fewer verified incidences of child abuse and neglect and fewer emergency room visits. Specific percentages of the increase of improvement will be determined after baseline data are collected.

Evaluation & Research Design

A strong evaluation component is critical to the successful implementation of the FBP. To this end, the Santa Fe Institute has taken a leadership role in bringing to the table the best and the brightest in the field of early childhood development research to form the FBP Evaluation Steering Committee, a voluntary group comprised of experts in the area of public health research, maternal and child services and community. Under the auspices of the Committee, the RAND Corporation was selected to lead a study team that meets monthly to ensure consistency between program theory, objectives and measurement, and analysis of data. The study team takes advantage of RAND's strengths, assets in New Mexico, and peer review from nationally-

recognized leaders in the field. RAND Senior Economist Rebecca Kilburn, Ph.D. will serve as project leader and will have responsibility for all aspects of the project.

The Northern New Mexico implementation of FBP is a community-based universal model, thus a random assignment research design is infeasible. Among the feasible quasi-experimental designs applicable to this program setting, it is believed that the best design is a pretreatment cohort control group design.⁷ This design involves comparing outcomes of target families after the FBP began operating to outcomes of target families who would have been eligible for FBP but gave birth before the program commenced. In this case, target families are those in Rio Arriba and Taos Counties with a first-time mother or father and a child six months pre-partum to two months post-partum. The comparison group will be comprised of families who would have been eligible to participate up to two years prior to the program commencing. Based on typical project scale-up experiences, it is anticipated that the program will be implemented with good fidelity within six months of commencement. Data will be collected on the participant group beginning six months after the program begins. The data will enable the estimate of a regression model that will identify the treatment and other factors that explain the ultimate and intermediate outcomes for both children and mothers. Data will be collected until study children are eight years old.

The logic model of this intervention is a reasonable one: if adverse life events in early childhood are associated with worse outcomes later in life, and if home visiting programs have been shown to reduce early adverse life events and promote better childhood outcomes, then a well-designed and executed home visiting program has the potential to improve the well-being of individuals in this region. However, a sound logic model is not a guarantee that a prevention program will have its intended effects. Factors such as rural transportation challenges or the lack of subsidiary health care or other services could limit expected gains, and as a result, the question remains as to whether this approach will produce the expected outcomes, and whether this program model should be expanded to other portions of New Mexico or beyond.

An empirical evaluation will be conducted that addresses these research questions:

- 1) Are the ultimate outcomes in areas such as health, development and education of both the child and parents of FBP participants better than those of the comparison group?
- 2) Are the intermediate outcomes related to behaviors, knowledge, and interaction of FBP participants better than those of the comparison group?
- 3) Do the intermediate outcomes mediate the ultimate outcomes of interest?
- 4) How do participant characteristics or other influences moderate the effects of the FBP?
- 5) How does variation in participation in the FBP, such as number of home visits or staff turnover relate to outcomes?

In addition to answering these research questions, the evaluation will make several advances to the home visiting research as a whole. First, given that the FBP will provide services to all first-born children in these two counties rather than focusing on the most disadvantaged children, the results will allow the examination of program impacts across the distribution of socio-economic status, risk status, and other factors.

⁷ For a detailed description of alternative quasi-experimental designs, see Shadish, William R., Cook, Thomas D., and Campbell, Donald T., 2002, *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*, Boston, MA: Houghton Mifflin Company.

Second, in addition to comparing the outcomes of participating children to comparison group children, how outcomes differ among participating children according to program participation variables will also be examined. This will be one of the first home visiting studies to “get inside the black box” to examine how program factors such as the number of home visits influence outcomes.

Third, the evaluation will be one of the first studies of any type of program to explicitly examine whether the program can prevent exposure to “adverse life experiences”⁸ or provide children with resilience to those experiences. Finally, in an environment of increasing emphasis on “evidence based practice” in early childhood,⁹ the FBP provides an important case study. The prevailing evidence based home visiting programs were not practical in the Rio Arriba and Taos Counties settings, and implementation of the FBP will inform others of the viability of adapting tested model programs to meet varying community contexts.

The FBP builds on other home visiting and prevention models that have been shown to improve long-term outcomes of children and their families. The logic model of this intervention is a sound one: if adverse life events in early childhood are associated with worse outcomes later in life, and if home visiting programs have been shown to reduce early adverse life events and promote better childhood outcomes, then a well-designed and executed home visiting program has the potential to improve the well-being of individuals in this region.

For more information contact:
Deborah Boldt, Program Officer, LANL Foundation
505-753-8890, x17; dboldt@lanlfoundation.org

⁸ See Felitti et al., 1998, for example.

⁹ Buysse, Virginia, and Patricia W. Wesley, eds., 2006, *Evidence Based Practice in the Early Childhood Field*, Washington, D.C.: ZERO TO THREE Press.