State of New Mexico, Announcement HRSA-11-179
Affordable Care Act – Maternal, Infant and Early Childhood Home Visiting Program

INTRODUCTION

Hidden just beyond the postcard images and Tourist Board campaigns, New Mexican children grow up confronted with adverse childhood experiences that are rooted in a history of profound and pervasive poverty.

This must stop!

To do that, we must take bold steps to reconceptualize public policy and practice. Services like home visiting must be re-defined and viewed from a family-centered, functional perspective rather than from a bureaucratic perspective of siloed categorical funding. We will pilot test an integrated, place-based, evidence-based model of home visiting as a strategy that is based on a continuum of care for all families in the five highest-risk, highest-need communities of New Mexico.

Figure1. Continuum of Quality Home Visiting Services

Proposed Purpose

GOAL: Ensure that the full continuum of quality home visiting services is available in every community – beginning in communities where children are most at risk (see Figure 1)

New Mexico's families experience risk factors and poor outcomes for which home visiting is the most promising intervention. However, many of the most needful communities in the state have little or no capacity to implement an evidence-based home visiting program. Rather than just "throw money at a problem" and then wonder why nothing changed, New Mexico will develop an innovative and respectful process that allows communities to build the capacity to implement and sustain successful evidence-based home visiting programs. To accomplish this, we will pilot test the use of two evidence-based models that have never been tested for use when implementing evidence-based home visiting programs.

Getting To Outcomes (GTO)® is a planning and community capacity-building model that we will use to intentionally and systematically support decision-making within the five communities where children are most at risk. And, to ensure the sustained success of selected home visiting models, we will pilot test the use of an evidence-based program support, training, and technical assistance model called Extension for Community Healthcare Outcomes (ECHO).

First, though, the state of New Mexico must develop an integrated model of home visiting as a strategy. Because each family is unique and often requires specialized care, this model must allow communities and/or agencies to braid funding and provide appropriate, integrated services. These services will provide a continuum of home visiting services for expectant parents and children birth to five that range from:

- Promotion – universally appropriate home visiting services that support the health, happiness and successful development of all children;

- Prevention – home visiting services that are most appropriate for expectant parents and children with identified indicators of risk;
- Intervention – home visiting services that are appropriate for expectant parents and children with diagnosed developmental delay and/or disability; and
- Clinical Treatment – home visiting services for children diagnosed with severe emotional disturbance and their caregivers/family.

Currently, when available, these home visiting services are provided in isolation due to siloed funding streams, categorical service definitions, and are managed by offices scattered throughout different departments of state government. Even when community agencies provide an array of these services, they are often provided in isolation due to "billing" restrictions. The goal, however, is for a family to access the most appropriate level(s) of service, available as a seamless and integrated continuum.

This effort to align and integrate home visiting as a strategy is part of a larger effort to align and integrate the early learning system into a "system of systems". That is the statutory responsibility of New Mexico's Early Learning Advisory Council. Conceptually, this effort is to establish a system of early learning that moves systems out of their silos, from alignment ("parallel play") to an integrated whole.

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Figure2. Linkage of Childhood Learning Services

New Mexico's larger transformation initiative aims to ensure access to the highest quality services, to link all early childhood learning services together, and to make their delivery strategies, and the transition between them, as seamless for families as possible.

New Mexico will fund evidence-based and/or promising approach programs in five of

our highest need communities through their early implementation phase as they develop approaches to achieve high quality and fidelity, so that they are ready for full implementation as part of an expansion project in two years.

Objective 1: An integrated continuum model of home visiting services based in promotion and extending to prevention, intervention, and treatment is developed by the Children Youth and Families Department and other stakeholders by January 2012.

Objective 2: A Getting to Outcomes (GTO)® community mobilization and capacity building model is adopted in five high need New Mexico communities to develop a local service system – all community mobilization steps (GTO Steps 1-6) are completed by July 2012.

Objective 3: Capacity building initiatives are developed using Training and Technical Assistance systems, the approach is tested, and a strategic and implementation plan for Project ECHO-HV are completed by September 2012.

Objective 4: More than half of the five identified underserved, high need communities have completed the Initial Implementation phase, that is, implementing home visiting services and community-selected model programs within an integrated system approach by October 2012.

Problem Description and Intervention Description

New Mexico has the highest percentage of uninsured individuals in the nation, and is one of the poorest states in the country; 28.8% of children in New Mexico live in poverty. Because poverty, particularly in the early years of a child's life, has particularly harmful effects on healthy development and well-being, New Mexico youth struggle with several negative outcomes later in life, including educational achievements and substance abuse. In the 2009-2010 school year 48.6% of fourth graders were reading below proficiency, and 54.6 were doing math below established proficiency levels (New Mexico Children's Cabinet, *2011 Report Card & Budget Report*). The need for an effective early childhood learning system and a sound home visiting program design that is much more effective, is obvious. New Mexico proposes an innovative approach to support communities in their implementation of highly effective home visiting, and plans a comprehensive program design that will totally transform its system.

New Mexico proposes to use the two-year **Development Grant** to pilot a structure that builds local readiness and capacity to implement home visiting programs in high need counties of the state. New Mexico has identified its highest need counties through its recent Home Visiting Assessment process, but in many of those counties there is virtually no infrastructure to seek, plan or implement evidence based home visiting programs. Because of this, New Mexico has chosen to employ an Interactive Systems Framework for Dissemination and Implementation to build capacity called Getting To Outcomes (GTO)® (Chinman et al., in press). This framework, deemed an evidence-based *process* by the Substance Abuse and Mental Health Services Administration and developed by the RAND Corporation and the University of South Carolina, is designed to build community awareness, assess needs and resource capacity, create a local strategic plan, and provides support for the planning, implementation, and evaluation of evidence-based programs. GTO has been utilized in other fields as a planning model to successfully create results, and provides tools to support its adoption (see *Methodology* section for more details about GTO and its evidence-base).

GTO will be used as a strategic planning model to implement an integrated home visiting approach that positions home visiting as a strategy to provide all levels of services – promotion, prevention, intervention, and clinical treatment when appropriate. Currently there is no integration across these levels of care, even though a family may need multiple levels of service within this home visiting continuum simultaneously or in sequence, and might move from one level of service to another at various times for any number of reasons, including changes in risk factors, developmental concerns or a new diagnosis, or changes in family circumstances or parental behavioral health problems. Within this overall approach, individual evidence-based programs such as Nurse Family Partnership (NFP), Parents as Teachers (PAT), home visiting, or the local promising home visiting model, the First Born® Program (FBP), which are all operating in New Mexico, fit as long-term programs providing support to the family.

New Mexico has the fifth largest geographic area of the 50 states, yet has only a little over two million people in the state. Within the state are 33 counties. Geographic distances are a huge obstacle for accessing services, and most counties of the state qualify as either rural or frontier, with fewer than a dozen people per square mile in many counties. Providing training and technical assistance, workforce development activities, or any other support to local

programs, are often very difficult given the large distances. In many ways the rural and frontier nature of so much of the state leads to the consistent poverty and high-risk levels present in these communities. To address this issue, as part of this project the state will pilot the use of the Extension for Community Healthcare Outcomes (Project ECHO) telecommunication system to provide training, technical assistance, and reflective supervision through the Center for Development and Disability (CDD) at the University of New Mexico to the participating communities. UNM's Project ECHO was recently described in the *New England Journal of Medicine* in the context of providing complex chronic disease care in rural settings, and the technology has simultaneously been developed at the CDD to utilize the intervention strategy within home visiting (Arora, et.al., 2011)

Finally, we plan to reach initial implementation status in the five communities as a result of the community awareness and planning process within Getting to Outcomes. Three communities will reach this phase by the last quarter of year one, and under this funding will hire, train, and recruit families at that time. In the second year they will continue to implement services, moving toward high fidelity over that year using the model home visiting program selected (either Nurse Family Partnership or Parents as Teachers). The other two communities are expected to reach that phase during year two, because they are starting from a point where there are currently no services available other than those provided by the state's Family Infant and Toddler Program (FIT, our IDEA Part C Early Intervention program).

Conceptual Framework of the Intervention

While the GTO and ECHO models offer many strategies for effective evidence-based program implementation, it cannot be assumed that these approaches, which have been successful in other health care areas (i.e., substance abuse prevention, hepatitis care), will work similarly for home visiting and have the same impact. First, organizations do not always adopt new practices even when known to improve outcomes. Second, attention needs to be paid to factors both at the individual and organizational levels that impact the degree to which new practices are adopted and implemented. For example, a number of studies have shown that factors at both the individual level (e.g., training, skills, efficacy, involvement in decision making, and satisfaction of teachers) and at the organizational level (organization size, climate, and financial resources, and active support by leaders) have been shown to predict successful evidence-based practice implementation (e.g., Ennett et al., 2003; Rohrbach et al., 1996).

This literature, and RAND Corporation experiences disseminating GTO, suggests that innovative strategies are needed at both the organizational and individual levels to encourage adoption. Passive approaches such as trainings by themselves do not lead to change, as attendees often experience barriers to incorporating newly learned information into their work (Miller et al., 2004). More comprehensive approaches are needed in which implementation researchers partner with communities to tailor adoption strategies to the local context (Rosenheck et al., 2001). To facilitate the adoption of the GTO framework and ECHO approaches, we will use the Simpson Transfer Model, or STM, reviewed below.

Incorporating the notion of readiness to change (Prochaska et al. 1992), and Rogers' Diffusion of Innovation theory (1996) at both the individual and organizational levels, Simpson and his colleagues developed a program change model for transferring research into practice (2002). This model involves four action stages: 1) **Exposure** is dedicated to introducing and training in the new technology; 2) **Adoption** refers to an intention to try a new technology through a program leadership decision and subsequent support; 3) **Implementation** refers to

exploratory use of the technology, likely with customization at the local level; and 4) **Practice** refers to routine use of the technology and performance feedback. Crucial to moving from exposure to implementation are personal motivations of staff and resources provided by the institution (e.g., training, leadership), organizational characteristics such as "climate for change" (e.g., staff cohesion, presence of opinion leaders, openness to change), staff attributes (e.g., adaptability, self-efficacy), and characteristics of the innovations themselves (e.g., complexity, benefit, observability). *We will use the STM to guide the implementation and evaluation of the GTO framework and ECHO approach in the 5 targeted communities*.

Anticipated Benefits: The project has the potential to benefit families in the neediest communities in New Mexico, and also to provide a model for building home visiting capacity and integration that other parts of the nation can adopt. Currently, it is impossible to implement high quality model home visiting programs in most communities of the state. There is simply insufficient capacity. The successful project will create capacity in five of the state's highest need communities, and result in the successful implementation of high quality model programs with fidelity. Program participants will also contribute to the development of a GTO manual specific to home visiting which will contribute to the national initiative, as many states experience barriers to implementation in their communities, and can use the manual as part of their efforts to build own state home visiting initiatives.

Steps previously taken: New Mexico has a long-standing commitment to state-funded home visiting programs. The first was initiated in 1989, and targeted children from birth through age five. The expansion, coordination, and alignment of the home visitation system are intentionally and strategically addressed by the Home Visiting Task Force, established in 2005. The Task Force is comprised of several New Mexico State Departments: Children, Youth and Families; Public Education; Department of Health; and Human Services, all of which collaborate with federally-funded Head Start programs and other community home visiting providers.

A planning work group was legislatively established in 2007 to develop a comprehensive, long-range plan to phase in a statewide system of universal voluntary home visiting,. The Home Visitation Work Group met during 2007-2008, to conduct a systematic review of scientific evidence concerning the effectiveness of early childhood home visitation; to review the models present in New Mexico and other states in order to establish standards and outcomes for effective home visitation; and to develop a roadmap for a statewide system that would offer easily accessible, comprehensive home visiting services to all families starting before birth and continuing to age three. *Building a System of Home Visiting in New Mexico: The Next Three Years 2009-2012* resulted from this planning, and has shaped the on-going strategic path of home visiting development since its publication. It developed several assumptions about all programming and policy options, and provided the policy basis for future planning: Home Visiting works. Home Visiting comes at the right time. Home Visiting is offered in the right place. Home Visiting is voluntary. Home Visiting is effective. Early childhood home visitation should be established throughout New Mexico. Funding investment should be increased. Home Visitation services should be targeted to populations of either the highest need or highest risk. Billing structures should be changed to reduce barriers to service and encourage better linkages with the maternal and child health systems in local communities. Minimum standards, mandated outcomes, and required evaluation system participation were put into policy. The assumptions listed above provided the basis for future policy planning.

Home visiting programs funded through Children, Youth, and Families Department (CYFD HV Programs) may choose their own curriculum but must follow the CYFD Service Manual standards. These standards state that programs must be free, voluntary, focus on a target population, and serve families from pre-natal through age three. Additionally, staff must participate in on-going professional development, reflective supervision, community education, and conduct data collection activities for outcomes, screenings, evaluation, and performance measures. The CYFD HV Program currently collects data from all state-funded programs through a single data system that is managed by the University of New Mexico Division of Continuing Education (UNM DCE) with funding and oversight from the CYFD Early Childhood Services Division. The UNM DCE also provides training and technical assistance on data collection and submission, as well as data management and data reports both to the community home visiting programs and at the State level to the CYFD HV Program. The UNM Center for Development and Disability (UNM CDD) provides training and technical assistance to community home visiting programs and already uses the ECHO model for some strategies, It will expand this to a full implementation these systems using Project ECHO as a component of this project, which will support a full pilot study of this model of delivery. These responsibilities will be expanded to include support to the MIECHV-funded programs as well as CYFD data and reporting needs to meet federally legislated mandates. UNM CDD also provides reflective supervision of all local community-based program managers, and to provide training and technical assistance to funded programs. Programs are expected to collaborate with other local agencies to make referrals for needed services for the child and family. Programs must be culturally sensitive in all aspects of programming and service delivery, and have policies and procedures in place that address confidentiality of client information.

New Mexico increased its investment in home visiting programs during this period, increasing funding from $98,000 in 2008 to $2.3 million in 2009. During the recent years of budget shortfalls, New Mexico has, through major advocacy work and the commitment of the state's authority for home visiting, Children Youth and Families Department, maintained level funding for home visiting while other programs across state government have been dramatically cut. It provides assurance that it will utilize these and new Federal funds to sustain support for home visiting.

In 2009, New Mexico successfully completed its state needs assessment, resulting in the identification of the highest need counties and one sub-county area of the state. It recently completed its updated state plan, which provides a plan for the implementation of evidence-based models in two of those communities. Those models are Nurse Family Partnership (South Valley of Albuquerque) and Parents as Teachers (McKinley County).

Priority elements to be addressed

Priority Element 2: To support effective implementation and expansion of evidence-based home visiting programs or systems with fidelity to the evidence-based model selected. The proposed project is designed to support communities to plan, select, implement and evaluate evidence-based home visiting programs – currently very few counties in the state can even consider implementing a high quality home visiting program, as there is no capacity to do so within the community. At best, a professional from outside of the community can come into the community and provide services to a limited caseload of families without local agreements and processes for referrals, treatment, etc. This capacity must be built within communities, then high quality programs within an early childhood system can be selected and implemented. The

programs New Mexico is supporting include two model programs, Nurse Family Partnership, and Parents as Teachers, and, in one community where it is already successfully operating, a promising program, First Born, which will be well within the required 25% maximum cap on utilization of promising programs. The intervention, with GTO as a strategic planning model and ECHO to provide expertise and supervision to local communities, will build capacity to effectively implement evidence-based home visiting.

Priority Element 5: To reach high-risk and hard-to-engage populations. All five communities identified for this project are identified as among the highest need counties in the state. They vary widely – one is majority Hispanic and immigrant, and is a border county with Mexico (Luna County); one county is primarily Navajo, and is on the western edge of the state (McKinley County), and includes a small metropolitan area, Gallup; one county is on the extreme eastern side of the state, and is majority Anglo, a sort of "cowboy" area of the state, but in a community that has lost half of its population in the last generation and faces huge environmental risk factors that contribute to severe poverty (Quay County); one is in the southwest corner of the state, a mixed population though primarily Hispanic, and is a mining community (Grant County); finally, the last area is a sub-county area, the South Valley of Albuquerque, for which we have segregated the data by zip codes and identified a very large, very poor, almost completely underserved population of Hispanic families.

Priority Element 7: To reach families in rural or frontier areas. The implementation of comprehensive, high quality programs is difficult because of the rural and frontier nature of the state. To address this priority element, New Mexico will utilize Project ECHO, from the Center for Development and Disability of the University of New Mexico, to provide training, technical assistance, and reflective supervision to ensure that families in these areas receive high quality programming.

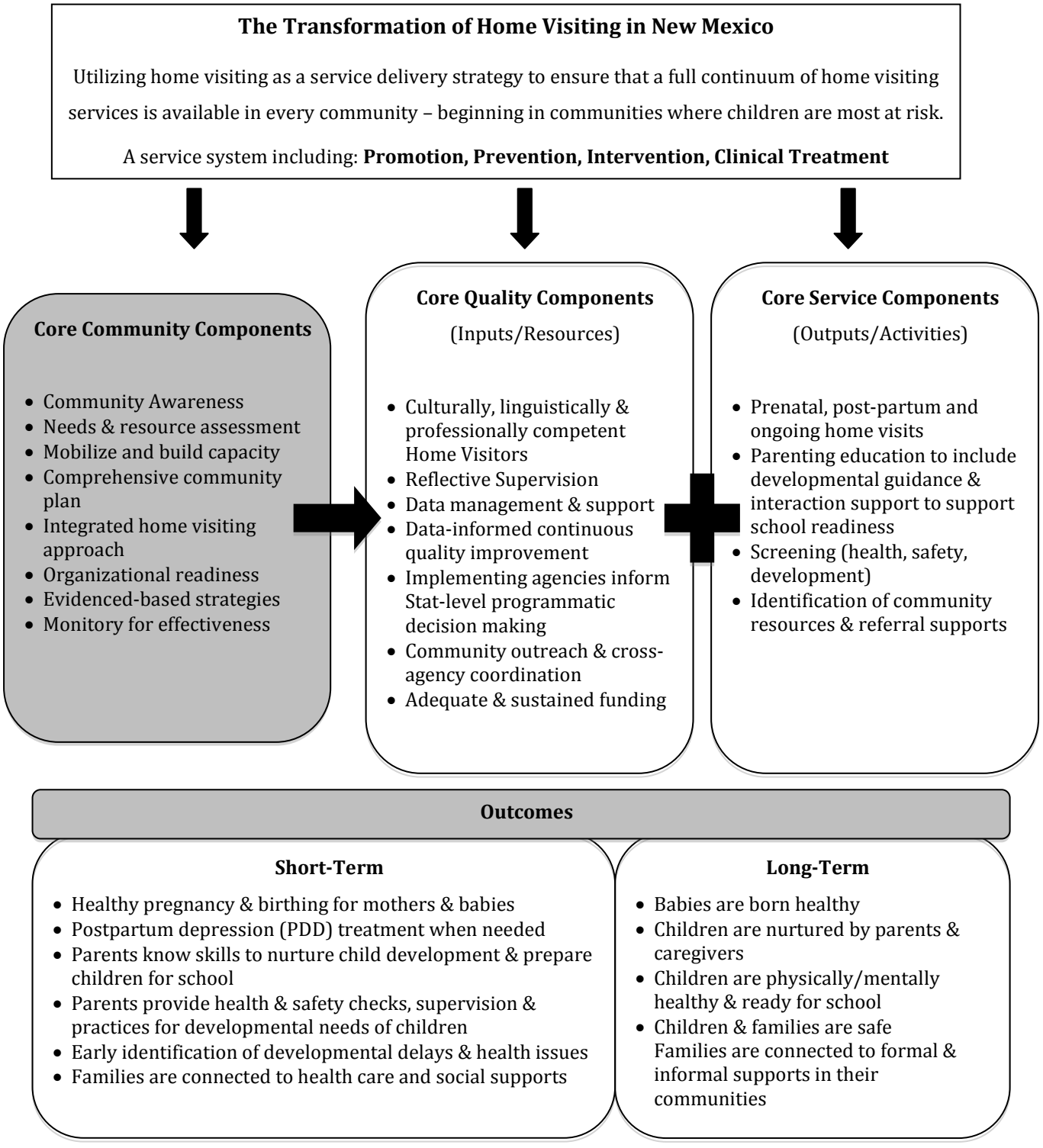
(Lower) Priority Element 8: To support fiscal leveraging strategies to enhance program sustainability. New Mexico will direct a state level planning process to develop a plan that will integrate and leverage funding through FIT (Part C Early Intervention) for services and for related training and technical assistance services, Maternal and Child Health sources, and Medicaid and the SSA for the state's mental health and substance abuse services to determine how these can be better linked to support the targeted families and their outcomes.

How project will enhance existing MIECHV program

New Mexico's proposed project will supplement the current implementations in McKinley County and the South Valley of Albuquerque. The proposed project will amplify the impacts of these home visiting programs by creating a comprehensive community plan and an integrated model of home visiting that can include the entire continuum of services available. By building the state's ability to partner with communities to undertake rigorous planning, the entire state system will improve dramatically over its current ability to provide high quality services to families in every part of the state.

New Mexico's Logic Model (Figure 3) shows the state's direction and what the proposed project will create: a re-engineered state system that provides a method, through the utilization of Getting to Outcomes and Project ECHO, for high need, low capacity communities to build strong local programming options for their children and families.

Figure 3. New Mexico Home Visiting Logic Model



NEEDS ASSESSMENT

In 2010, New Mexico provided home visiting services to an estimated 4,400 children, representing approximately 3% of the total population of children under age five (148,847, Census QuickFacts). The state funded 16 home visiting providers through the Children, Youth and Families Department (CYFD) in 21 of the state's 33 counties who served 1,371 (CYFD Database) children. Nine counties have no home visiting services. The proposed project will facilitate the development of a comprehensive and systematic approach to implement an evidence-based home visiting program embedded in an aligned early childhood system to reach New Mexico's children and families in the five highest need population areas, and thus support communities in the following ways: effective implementation of evidence-based home visiting programs or systems with fidelity (Priority Element 2); work to reach high-risk and hard-to-engage populations (Priority Element 5); and reach families in rural or frontier areas (Priority Element 7).

Selected Communities

The New Mexico Statewide Needs Assessment (the Assessment) identified counties with the greatest number of high- risk children under age five. The Assessment collected and analyzed data from all counties on premature births, low birth weight infants, infant mortality, poverty, crime, domestic violence, school dropout rates, substance abuse, unemployment, child maltreatment, and teen births. A sub-county analysis was conducted for Albuquerque (in Bernalillo County) using census tracts. Each county/community is described below.

For the proposed project, we are defining all five high-need counties as "communities," although four of the five are entire counties. Most communities included in this proposal have only one hospital and one Family, Infant & Toddler (FIT) provider, and many service providers are expected to serve the entire county or region. Maternal and Child Health Councils have been active in each county, so a precedent exists for organizations in a county to collaborate on early childhood issues. Every community will participate in the Getting to Outcomes (GTO) protocol to assess capacity and need, and to design and implement an evidence-based home visiting program. Communities will identify and mobilize key community members and service providers to conduct a needs and resource assessment on local early childhood services. They will then create a comprehensive strategic plan to deliver services, build capacity and select an evidenced-based home visiting program to serves families, thus bringing high-quality home visiting services to these rural/frontier area with high risk families.

In New Mexico's recent home visiting assessment, **Quay County** (pop 9,041, Census QuickFacts) was rated as the area with highest risks for children and their families. It is a rural farming community covering 2,875 square miles of high plains in eastern New Mexico, and has had a declining population for the last decade due to the shrinking agriculture industry. According to the Assessment, Quay ranked first in the state for infant mortality (11.08 deaths/100,000 births) and combined abuse rate (84.26 abused/1,000 children); second for domestic violence (30.54/1000) and juvenile arrest rates (73.29/100,000); and third for dropout rates (7.5%). There are no home visiting services in Quay. We anticipate providing home visiting services to approximately 40 Quay County families in the second year of the project.

Approximately 32,000 people live in **South Valley/Central Community** in Albuquerque (South Valley). This community comprises 5% of the population of Bernalillo County (662,564, Census QuickFacts), the largest metropolitan area in the state. The South Valley was selected because it has nearly double the county rates for unemployment and teen births, and has the

lowest prenatal care and educational levels in the county (fewer than 60% of people over 25 have completed high school). Approximately 25% of the population lives below the Federal Poverty Level in the South Valley. The community is comprised of several predominantly Hispanic working-class neighborhoods situated south of Albuquerque's downtown area. Members of the community appear to have strong ties, but relationships with new immigrants (approximately 10% of the population) are fragile and tentative. Additionally, the community will be implementing the Nurse Family Partnership (NFP) program July 1, 2011, and thus will have a high likelihood of showing improvement on federal benchmarks within a reasonable period of time. As the largest metropolitan area of the state, the county has the best capacity to successfully implement the NFP infrastructure and personnel requirements with fidelity.

The Bernalillo County Community Health Council's Pregnancy to Three Task Force and the Bernalillo County Home Visitation Work Group are actively working in the South Valley. Both the Health Council and the Work Group are developing a system to assure cross-program coordination and collaboration to benefit families in the county and identify pregnant women who might otherwise go unrecognized. These groups were chosen to participate in the GTO process since they aim to reach the most at-risk and hard-to-reach families. The strategies of the Work Groups are aligned with the goals of the proposed project, including: developing a continuum of home visitation services and creating a system of triage into the various home visitation programs in Bernalillo County; developing a set of guidelines for creating the continuum, and developing common training for home visiting staff in Bernalillo County. The new NFP Program will collaborate with existing services, particularly those co-located in the South Valley Health Commons, such as the Department of Health and First Choice Community Health Center and Dental Clinic and other local service providers. The Pregnancy to Three Task Force members and UNM College of Nursing have existing relationships with these agencies and will serve as important collaborative and bridge-building resources throughout the program development and implementation process. It is anticipated that 50 pregnant women will be served through the implementation of the Nurse Family Partnership program set to begin July 1, 2010. We estimate that by the end of year one of the proposed project an additional 20 women will receive home visiting services.

Grant County (pop 29,514, Census QuickFacts) is located in the southeast section of the state and has a total area of 3,968 square miles with a population density of eight people per square mile. It is a rural County comprised of three million acres of the Gila Wilderness. One third of the population lives in Silver City. With historic ties to mining, ranching and agriculture, Grant County's communities have experienced a decline in population over the last decade forcing residents to adapt to changes, especially with recent mine closures. According to the Assessment, Grant County had the highest percent of preterm births (13.6% compared to 10.7% statewide); the third highest percent of population unemployed (12.2% compared to 7.2% statewide); and ranked fourth for low birth rate (11.3% compared to 8.6% statewide).

The First Born Program® was developed in Silver City in 1997 and currently is housed in the Gila Regional Medical Center. While not an evidenced-based program, it has been identified as a "promising practice" by SAMHSA. The program is funded through CYFD Home Visiting and serves approximately 100 first time parents in the county. At the core of the First Born Program® is the conviction that a healthy pregnancy and a healthy baby are not only critical to the immediate well-being of mother and child but are also integral to the long-term health and success of the family and community. The program curricula provide a comprehensive set of topics for families to learn as well as specific tools, activities, and educational materials for home

visitors to use. The flexible and inclusive curricula can be adapted to each family's needs. It is anticipated that by the end of year one of the proposed project an additional 40 families will receive home visiting services within an aligned and coordinated early childhood system.

Luna County (pop 25,095, Census QuickFacts) is located in the southwest part of New Mexico along the border with Mexico. Like neighboring Grant County, it has a population density of eight people per square mile and covers a total of 2,695 square miles. According to the Assessment, Luna County had the highest percentage of unemployed residents (19%) in the state and ranked second in the state for births to teens (92.8/1,000 compared to 60.1 for NM) and percentage of residents below the FPL (28% compared to 17% for NM).

Currently there are two home visiting programs in Luna County that serve approximately 34 children. In 2010 there were 412 births in the County. The Ben Archer Health Center Welcome Baby and Promotora prenatal home visiting program is funded by CYFD and serves first time parents. The Ben Archer Health Center is located in Las Cruces, a 45-minute drive from Deming, the County Seat. It is anticipated that 40 additional families will receive home visiting services in the second year of the project.

McKinley County is located in the northwest region of New Mexico. The County's land base is over 60% Indian Reservation, and the population of approximately 75,000 is over 70% Native American. Population density is 14 people per square mile. The only municipality is Gallup, which serves as County Seat and contains nearly one-third of the County population. The County is home to portions of the Navajo Nation and the Pueblo of Zuni. Median household income in Gallup is $25,197 and approximately 38.9% of the children live below the FPL, the highest in New Mexico. McKinley County is one of only 38 county-level census (2000) divisions of the United States where the most spoken language is not English and one of only three where it is neither English nor Spanish.

Over 35% of the district's 13,200 students are English Language Learners. Approximately 46% of the population speaks Navajo at home, followed by English at 39%, Zuni at 9% and Spanish at 6%. While this allows for richness in many oral language traditions, this language diversity has implications for both dual language learning and English literacy among adult and school-aged populations as well as for early childhood education. Children entering the school district's kindergartens are roughly 1.5 to 2.0 years behind their New Mexico peers in language and cognitive development as traditionally measured, with Head Start students further behind than students coming from district preschool programs.

McKinley County demonstrates one of the highest percentage of preterm births in New Mexico (13.5%), and an alarmingly high rate of infant deaths per year; 9.47 per 100,000 compared to the State rate of 6.16 per 100,000). Although births to adolescents are lower than State rates (55.3 McKinley County compared to 60.1 NM), the County is still working to lower these numbers. Additionally, McKinley County demonstrates nearly double the State's percent of high school drop-outs (6.2% McKinley County compared to 3.8% NM) as well as a high rate of domestic violence at 13.19 per 1000 (NM rate 11.31 per 1000). McKinley County is also besieged with alcohol-related problems. While in 2002 New Mexico was ranked the 5th worst state in the nation for alcohol related motor vehicle deaths per capita, McKinley County ranked first among New Mexico's 33 counties for alcohol related crash deaths per capita. The needs in this community are varied and complex.

Through the MIECHV funds New Mexico chose McKinley as a site to restore and expand the ***Parents as Teachers (PAT) Program*** beginning July 1, 2011. The program will be implemented in the Gallup-McKinley County Schools (GMCS) and will join the three other

school districts in the County implementing PAT's Family and Child Education (FACE) program (Baca/Dlo'ayazhi Community School, Mariano Lake Community School, Wingate Elementary School). For this community, the GTO process will build on the resources and capacity of the existing program, which already has a history in the community while at the same time strengthening community connections to better address unmet needs. During year one, an additional 60 families will receive home visiting services funded by the proposed project. It is anticipated that 50 families and up to 75 children will participate in the newly funded PAT program beginning July 1, 2011 bringing the total number of children receiving evidence-based home visiting services to 135.

METHODOLOGY

As described above, the primary goal of this project is to ***ensure that the full continuum of quality home visiting services is available in every community, beginning in communities where children are most at risk.*** In order to reach this goal, we propose to achieve these objectives

Objective 1: An integrated continuum model of home visiting services based on promotion and extending to prevention, intervention, and treatment is developed by the Children Youth and Families Department and other stakeholders by January 2012.

Objective 2: A Getting to Outcomes (GTO)® community mobilization and capacity building model is adopted in five high need New Mexico communities to develop a local service system – all community mobilization steps (GTO Steps 1-6) are completed by July 2012.

Objective 3: Capacity building initiatives are developed using Training and Technical Assistance systems, the approach is tested, and a strategic and implementation plan for Project ECHO-HV are completed by September 2012.

Objective 4: More than half of the five identified underserved, high need communities have completed the Initial Implementation phase, that is, implementing home visiting services and community-selected model programs within an integrated system approach by October 2012.

Our approach consists of two primary activities:

1. We will employ the Getting to Outcomes (GTO) model in the five target counties to enable the local stakeholders to plan, implement and evaluate shared goals for implementing an integrated high-quality home visiting continuum in their community.
2. The State of New Mexico will develop the necessary infrastructure to support the efforts of local communities in developing their home visiting continua.

These efforts will be evaluated by the RAND Corporation team, as described later. Additionally, given the lack of existing providers for specialty health and children's services in many of these communities, we will explore the application to early childhood services of the ECHO model, which has been used in New Mexico to provide specialty health care to geographically isolated families.

We plan to conduct these activities in the five highest need counties/communities in the State as described above. Need was the key consideration in selecting communities in which we would test the proposed innovation, but these five communities are also good candidates for pilot testing this innovation, because they include communities that are at different stages in the implementation process (see **Figure 4**). We now provide background on GTO, the home visiting models that the State is supporting, and ECHO.

Evidence-Based Models and Empirical Work

This project will employ three types of research-based models to accomplish its objectives: GTO, evidence-based and promising home visiting models, and ECHO.

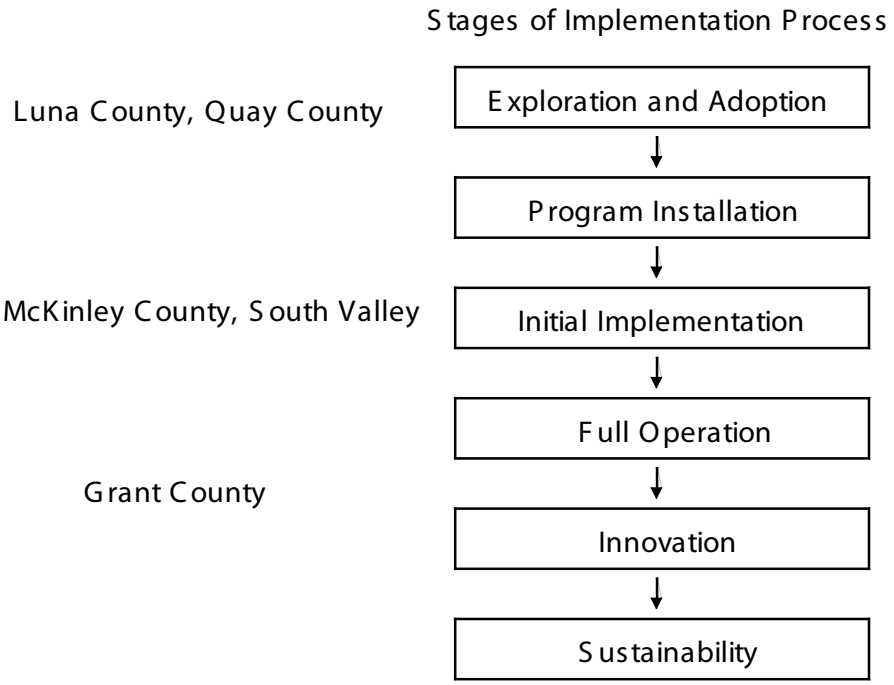


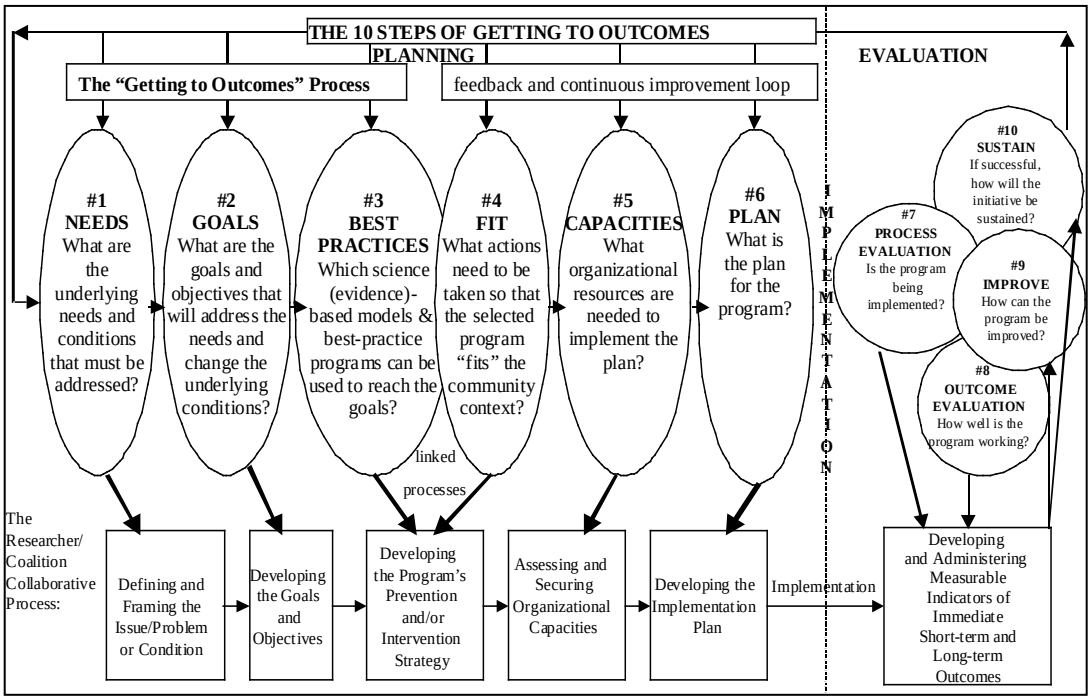
Figure 4. Five Target Communities' Stage in Home Visiting Process

Getting to Outcomes. Getting To Outcomes (GTO)® is an intervention that is designed to build capacity for implementing evidence-based practices by strengthening the knowledge, attitudes, and skills needed to choose, plan, implement, evaluate, and sustain evidence-based practices. GTO does this by posing ten questions (**Figure 5**) that must be addressed in order to obtain positive results and then provides practitioners with the guidance necessary to answer those questions with quality i.e., to perform each task as close to the ideal as possible. Each question is linked to a specific GTO step; there are six steps for planning EBPs (steps 1-6), two steps for process and outcome evaluation (steps 7-8), and two steps on the use of data to improve and sustain programs (steps 9-10). Implementation of these 10 steps is facilitated by three types of assistance: the GTO manual of text and tools originally published by the RAND Corporation (Chinman et al., 2004), face-to-face training, and onsite Technical Assistance (TA). The goal is to work with organization leadership to integrate the practices GTO targets into routine operations, closing the gap between research and practice.

GTO Conceptual Framework. GTO is based on theories of capacity building and behavior change. GTO is an operationalization of Empowerment Evaluation theory, that states there will be a greater probability of achieving positive results when evaluators collaborate with program implementers and provide them with the tools and opportunities to plan, implement with quality, evaluate outcomes, and use a CQI system themselves (Fetterman & Wandersman, 2005). Consistent with social cognitive theories of behavioral change (Fishbein & Azjen, 1977; Bandura, 2004), exposure to GTO training and TA leads to more knowledge about performing GTO-related activities, which leads to more positive attitudes towards these activities, which in turn leads to the execution of more GTO-related behaviors. These behaviors support the

successful implementation of EBPs (Durlak & Dupre, 2008), reflected in improved fidelity and, ultimately, improved outcomes.

Figure 5. The 10 Steps of Getting To Outcomes



GTO Evidence. Chinman et al (2008) conducted a quasi-experimental study of 10 GTO and non-GTO drug prevention programs that compared their capacity over time. As in the proposed study, the GTO intervention involved distributing GTO manuals, delivering training, and providing on-site technical assistance to program staff. Standardized ratings of capacity (which will be used in this study) showed that the GTO process helped the program staff improve their capacity more than the comparison programs did. Change on the Capacity Interview measure from baseline to two years was related to the amount of TA hours delivered. Surveys of individual staff members showed that across all the domains targeted by GTO, greater GTO participation was associated with improvements in prevention knowledge (e.g., ease of completing various prevention tasks), attitudes (e.g., importance of evaluation, EBPs) and skills (e.g., frequency of doing evaluation, using EBPs). Using GTO, several programs were able to document improvement in outcomes. In Chinman et al. (2009), GTO was evaluated on a larger scale in the state drug prevention systems of Tennessee (using an RCT design) and in Missouri (using a quasi-experimental design). In Tennessee, 54 drug prevention programs were randomly assigned to receive either the GTO intervention or standard practice. In Missouri, 36 programs that received GTO were compared with 9 similar programs that did not. At one year, analyses found that GTO-programs improved their capacity over non-GTO programs. While past and current GTO studies focus on capacity and implementation, the proposed study would go further, assessing impacts on family outcomes. Hunter et al (2009a) examined the TA process through the use of a TA log and Acosta and Chinman (in press) described the TA infrastructure developed in the NIDA study (1R01DA023277, Chinman, PI) to support the delivery of GTO. The TA log and a similar TA infrastructure will be used in this study.

Home Visiting Models. The State is currently supporting home visiting models that qualify as evidence-based and promising according to the MIECHV standards in three of the five target communities as follows:

- South Valley of Albuquerque: a Nurse Family Partnership (NFP);
- McKinley County: Parents as Teachers (PAT);
- Grant County: First Born® Program (FBP).

Our expectation is that the additional two communities, that currently have no home visiting services, will have completed the exploration stage of implementation (see Figure 1 above) by the end of the first year of the project, and will have selected an evidence-based or promising home visiting model to implement.

The McKinley County site provides Parenting Education (center-based and home-based), Parent and Child Activity Time (PACT) and Goal Setting all conducted through home visits and implementation of the PAT *Born to Learn* ® curriculum. GMCS also has a Parent Educator located at Churchrock Elementary School to support families in that community to advocate for their children and to develop effective parenting skills. The program partners with the state funded Graduation Reality and Dual-Role Skills (GRADS) Program for teen parents. With this population as well, Parent Educators make home visits to model effective parenting skills and support teen parents through goal setting using the *Born to Learn*® PAT curriculum. Referrals to various support agencies are made as needed.

PAT has been studied over two decades in a number of evaluations, including three separate quasi-experimental evaluations and two randomized trial evaluations. The quasi-experimental evaluations generally found that PAT children scored better than control group children in the areas of language skills, cognitive abilities, physical development, and social development (e.g., Phannenstiel & Stiel, 1989; Drazen & Haust, 1995). Other studies have found no differences between PAT children and comparison children or only a few gains for PAT children out of a large number of variables measures (Wagner et al., 2001a, 2001b, 2002).

New Mexico is supporting the implementation of the NFP model in Albuquerque's South Valley/South Central Community. As the largest metropolitan area of the state, Bernalillo County has the best capacity to successfully implement NFP's infrastructure and personnel requirements with fidelity. NFP is designed to serve vulnerable families and to address the very risk factors identified in this community including: high levels of poverty, teen pregnancy, inadequate prenatal care and poor birth outcomes as well as educational attainment and economic self-sufficiency. In fact NFP has been found to be most effective with higher-risk women and their families – defined as those who live in poverty and are first-time parents before the age of 21. NFP focuses solely on first time mothers who are living in poverty, beginning early in pregnancy – when women tend to face multiple risks for poor outcomes, but are also at a natural developmental period where support and intervention are likely to be both welcome and effective. This will be the only evidence-based model to be implemented in Bernalillo County and will be unique in that the model requires that a minimum of Bachelor-level, registered nurses provide the home visiting services. All of the other home visiting approaches that are currently used in the County as well as across the State are more interdisciplinary in nature, using degreed and non-degreed professionals with varied educational backgrounds.

Much of the recent surge in interest in home visiting programs has been attributed to the strong findings from a set of rigorous research studies conducted for the Nurse-Family Partnership (NFP) model (Gomby, 2005). Indeed, NFP has conducted three separate clinical

trials using randomized control designs and consistently found improvements in child and maternal outcomes through the time the child was 15 years old (Olds et al., 1998; Olds et al., 1997; Olds et al., 2007). The statistically significant improvements over these first 15 years ranged from mothers being more likely to breastfeed to less likely to receive public assistance, and from children being less likely to visit the emergency room to having fewer sexual partners as adolescents. Furthermore, the effects were often sizable. For instance, when the children were between two and four years old, the nurse-visited children had 40% fewer notations of injuries and ingestions and 45% fewer notations of child behavioral and parental coping problems in physicians' records (Olds et al., 1994), and mothers in the program received public assistance for 30 fewer months compared to comparison mothers (Olds et al., 1997).

With support from the State and other sources, Grant County currently implements the FBP, that uses a combination of nurses and non-nurses to provide services. FBP participants, who are generally mothers, can enroll during pregnancy up through the child's second month, and the program ends when the child reaches age three. Services are free and are offered to all first-time families. Trained home visitors deliver the program, typically in the child's home, using the trademarked FBP, which adapts previous home visiting models to a communitywide setting, and it can be a rural setting. Home visitors generally have greater than a high school education, some human services experience, and have completed the FBP training curriculum, which includes "shadowing" existing FBP home visitors. The home visitors work closely with local health care providers, hospitals, and social service agencies to identify and recruit first-time parents and facilitate access to preventive and developmental services. The FBP team includes a registered nurse, who provides a postpartum home visit offered to the parents of all participating newborns and continues to participate in the home visits when families encounter medical challenges. The FBP model calls for at least 40 weekly home visits in the prenatal period and the child's first year of life. Visits may be less frequent in the child's second and third year of life.

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. For more information on the theoretical underpinnings and a logic model for the FBP, see de la Rosa et al (2005) Ultimately, families are likely to experience better outcomes in the areas of physical and mental health, social and family interactions, cognitive development, and family goal and challenge management. The program helps families improve intermediate outcomes in the form of family behaviors, knowledge, and interactions, which in turn promote mother's and child's physical and mental health and other outcomes such as improved education and absence of abuse and neglect.

The FBP has participated in several types of evaluation. First, the FBP sites regularly collect data for continuous quality improvement and ongoing process self-evaluation. Second, the program has participated in two process evaluations. An evaluation of the original Silver City program, which examined whether the site was meeting its stated objectives rather than comparing the program to some alternative such as families not enrolled in the program, presented promising results (de al Rosa et al., 2005). Specifically, families scored much higher on measures of family resiliency, such as social support and family interaction, after participating in the program. A second study (de la Rosa, 2009) assessed the effect of the program on measures of participating families' wellbeing and the relationship between more home visits and family outcomes. This study found that after participating in the FBP, families' scores significantly improved on measures of social support, positive family interaction and caregiver characteristics, and families decreased the numbers of personal problems that would

affect parenting. Furthermore, the number of home visits was significantly related to improved scores on these measures. Finally, a separate outcome evaluation under way by the RAND Corporation and led by Dr. Kilburn will examine the effects of the FBP on child and maternal outcomes through age two using a randomized field trial design. The FBP currently qualifies as a "promising" home visiting program under the federal MIECHV program guidelines (see: http://homvee.acf.hhs.gov/).

Project Extension for Community Healthcare Outcomes (ECHO) is an innovative new model of healthcare education and delivery that was developed in New Mexico to increase the quality of care in areas of high unmet need. Using state-of-the-art telehealth technology and clinical management tools, ECHO provides training and support to providers in underserved and rural areas. ECHO is based on three knowledge routes: 1) guided feedback from specialists to health care providers to build content knowledge and self-efficacy; 2) shared learning and decision making via a provider network (establishment of a community of practice); and 3) brief didactic presentations by specialists during teleclinics. Since ECHO's inception in 2003, ECHO has performed over 1,000 telehealth clinics and 10,000 patient consultations. More than 20,000 hours of continuing education credits have been issued at no cost to providers (Arora et al, 2011a, b).

Recent publications in *Health Affairs* and the *New England Journal of Medicine* attest to the value of ECHO for addressing a range of health care delivery challenges that many communities face. ECHO's impact on treatment outcomes has been evaluated for Hepatitis C, a viral infection that requires an intensive, complex treatment plan. Patients that were treated at rural, underserved sites that received the ECHO intervention had less serious adverse events than those treated at the University of New Mexico clinic. Other outcomes were similar between patients treated at the UNM clinic and the ECHO sites, demonstrating that the effectiveness of ECHO as treatment in rural settings was comparable to treatment received in a large, urban academic medical center.

For the past eight years, CDD has effectively implemented the Early Childhood ECHO approach to treat a range of clients and disorders. Initially offering discrete trainings on specific disability topics, broader programmatic and management issues emerged and the CDD now offers reflective supervision. The most robust presence of EC ECHO has been in the support to Home Visiting supervisors in the CYFD statewide Home Visiting Initiative through regular and consistent reflective consultation initiated in 2009.

WORK PLAN/IMPLEMENTATION PLAN

Development of New Mexico Home Visiting Conceptual Model – Proposed Tasks

Task 1. Convene Stakeholders

Task 1.1 Establish state work group. Establish work group from members identified in proposal, most of whom are already in working groups focused broadly on home visiting, plus other stakeholders with information and important perspectives during Quarters 1-2 of Year 1. Coop Consulting will be responsible for this task

Task 1.2 Coordinate work group activities, document progress and decisions. Create semi-monthly meeting schedule, create agenda and document all meetings with minutes that includes all decisions made during Quarters 1-2 of Year 1.

Task 1.3 Facilitate Dialogue about fiscal leveraging and integration. Focus work of the groups about decisions to make and the options available, make each meeting results focused; bring

experts from all agencies, funding sources, and collect information from other states about potential integration strategies during Quarters 1-2 of Year 1.

Task 2. Assess Resources and Develop Options

Task 2.1 Create comprehensive catalog of all available resources and funding/service definitions. Collect all home visiting funding source information, including categorical, discretionary and Medicaid service definitions, including activities and programs in promotion, prevention, intervention, and treatment programs for children and/or family members; create catalog of all resources and funding/service definitions during Quarters 1-2 of Year. Coop Consulting will be responsible for this task.

Task 2.2 Technical Assistance from staff of the National Conference of State Legislatures. Jack Tweedie, of the National Conference of State Legislatures, has worked with New Mexico's Legislature extensively. In this project, he will advise the state-level systems reform efforts, visiting Santa Fe or ABQ two times a year in each of the two years of the project to meet with the work group and provide recommendations to improve the system, in particular about fiscal integration and leveraging strategies during Quarters 1-2 of Year 1.

Task 3. Publish Home Visiting Model, Gather Feedback, Make Policy Revisions and Disseminate Final Information to Communities

Task 3.1 Systematic documentation of newly designed process. Clearly document all findings and proposed solutions to create state system model in 2nd Quarter of Year 1. Coop Consulting will be responsible for this task.

Task 3.2 Share findings and recommendations. Distribute draft findings to the Early Learning Advisory Council and program managers within state and federal agencies responsible for funding/service definitions during the 2nd Quarter of Year 1.

Task 3.3 Support policy changes & appropriate revisions to funding/service definitions. Policy decisions necessary changes to regulations and procedures will be made during the 2nd Quarter of Year 1. Coop Consulting will be responsible for this task.

Task 3.4 Publish final home visiting model and related findings. Incorporating relevant input into final version of findings and system approach, publish and disseminate model broadly in 2nd Quarter of Year 1. Coop Consulting will be responsible for this task.

<u>GTO/ECHO Implementation – Proposed Tasks</u>

Task 1. Implementation Start-Up

Task 1.1 Review and make initial adaptations to GTO and ECHO models. Protocols and tools will be discussed at a Project Kick-Off meeting with key project stakeholders. In the first quarter of Year 1: 1) Hunter will coordinate with Coop Consulting to develop project-specific GTO model adaptations and 2) Coop Consulting will coordinate with the CDD regarding project-specific adaptations to the ECHO model.

Task 1.2 Develop outline for GTO and ECHO for home visiting protocol manuals. In preparation of the Project Kick-Off meeting, an outline of the GTO and ECHO for Home Visiting Manuals will be developed to present to stakeholders at the meeting and gather input.

Task 2. Initiate GTO Community Building Process and ECHO Program Support, Training and Technical Assistance Delivery

Task 2.1 Initiate GTO community building process, In the 2nd quarter of Year 1, Coop Consulting will initiate GTO process activities. Day-long comprehensive meetings for community members will be held at regular intervals throughout the project. At times these will be based on the community awareness and capacity building cycles (month 4, 7, 10, and 13) during the course of the project or as needed by the five communities.
Task 2.2 Initiate ECHO training and program support activities. In the second quarter of Year 1, CDD will initiate ECHO program support, training and technical assistance activities. Teleconferences, case reviews, reflective supervision modeling, conferences, on-site consultation and meetings will be scheduled throughout the remaining 18 months.

Task 3. Produce GTO For Home Visiting Model Manual
Task 3.1 Develop draft chapters. In the second quarter of Year 1, a draft manual will be disseminated to participants following the GTO training. The community building providers will utilize the manual as part of the local community building efforts and provide feedback to RAND on its usefulness and suggestions for improvement during the GTO Implementation period as part of the 3 process evaluation interviews (Quarters 4-15).
Task 3.2 Revise based on community feedback. As part of the baseline, 6- and 12-month interviews with program participants, the RAND evaluation team will collect information about the usefulness of the GTO for Home Visiting manual and suggestions for improvement. This information will be used to make revisions to the manual in order to prepare it for the quality assurance review process in the second half of Year 2.
Task 3.3 Develop version for the RAND Quality Assurance Review. During the third quarter of the second year, the GTO for Home Visiting manual will be submitted for review using the RAND quality assurance process. The QA process involves review by one internal (to RAND) and external expert in the field. This process is required of any RAND document.
Task 3.4 Develop Final Version. Following the reviews from the QA process, RAND will develop a final version of the GTO for Home Visiting manual by the end of Year 2.

Task 4. Produce ECHO For Home Visiting Model Manual
Task 4.1 Develop draft chapters. In the 2nd quarter of Year 1, a draft manual will be developed describing ECHO activities and protocol. The CDD will utilize the manual as part of the program support, training and technical assistance efforts.
Task 4.2 Revise based on community feedback. As part of the baseline, 6- and 12-month interviews with program participants, the CDD will collect information about the usefulness and impact of the ECHO model activities. This information will be used to make revisions to the manual in order to prepare it for the quality assurance review process in the 2nd half of Year 2.
Task 4.3 Submit final draft for review by the ECHO model developers. During the third quarter of the 2nd year, the ECHO for Home Visiting manual will be submitted for review by the developer of the ECHO model to ensure model fidelity.
Task 4.4 Develop Final Version. Following the review by the model developer, CDD will develop a final version of the ECHO for Home Visiting manual by the end of Year 2.

<u>Home Visiting Program Implementation – Proposed Tasks</u>
Task 1 Select Model of Home Visiting
Task 1.1 Establish funding process in compliance with State Procurement Code. In Year 1, Coop and Associates will work with personnel in CYFD and the state Department of Finance to

establish protocol for funding community home visiting programs in compliance with the State Procurement Code.
Task 1.2 Community stakeholders determine best model for community "fit." In Year 1, the communities will be guided to evaluating and/or selecting a home visiting model to implement. Following GTO training, participants will evaluate program "fit" (Step 4 in GTO model).
Task 1.3 Create plans for implementation phase. After program is selected, local agencies will create implementation plans (Step 6 of GTO model).
Task 1.4 Local agencies complete contracts with CYFD. In order to initiate programs, agencies will contract with CYFD. We anticipate all communities will complete this by end of Year 1.

Task 2 Hire and Train Staff
Task 2.1 Staff recruit and hire staff. Following select of home visiting program and CYFD contract, agencies will recruit staff. We anticipate this occurring by the first Quarter of Year 2.
Task 2.2 Implement ECHO training. With the assistance of CDD using the ECHO model, a training plan will be developed and implemented by first Quarter of Year 2.

Task 3 Home Visiting Program Implementation
Task 3.1 Recruit home visiting participants. Eligibility, recruitment, lottery (if needed) and referral processes are determined by beginning of Year 2.
Task 3.2 Enroll home visiting participants. Families begin utilizing community network for services by second Quarter of Year 2.
Task 3.3 Conduct Continuous Quality Improvement (CQI) process. Guided by GTO, programs will be assisted in evaluating (GTO Steps 7 & 8) and engaging in continuous quality improvement efforts (GTO Step 9) until the end of the intervention phase (third Quarter, Year 2).

<u>Evaluation – Proposed Tasks</u>
Task 1. Project Start-Up
Task 1.1 Plan evaluation. Upon award notice, the RAND team will meet to develop and refine existing measures for use in the project. Preparation of draft measures will be completed in time for review at the Project Launch meeting. RAND's IRB will be notified about the project and IRB review will be schedule to occur following the Project Start-Up meeting (following confirmation of the study measures, data collection timelines, protocols).
Task 1.2 Conduct *project start-up meeting*. Lead RAND evaluation staff (Hunter, Kilburn) will attend a three-day Project Kick-off meeting in New Mexico, within one month of award of this contract to discuss project objectives, the proposed study design, measures and data collection protocols and any related project issues to confirm the final design plan. A plan for regular reporting to the State of New Mexico and other key project stakeholders will be developed.
Task 1.3 Obtain IRB Review approval. Following confirmation of the data collection measures and protocols at the Project Kick-off meeting, Hunter/Kilburn will obtain RAND IRB approval.

Task 2. Data Collection
Task 2.1 Initiate process evaluation data collection. Following IRB review, Hunter will lead data collection of the baseline assessments of attitudes and skills in the 5 targeted communities for the process evaluation. The goal is to complete the baseline data collection by end of the first quarter. Paskell and Mattox will assist with recruitment and consent with collaboration from New Mexico on identifying participants. Approximately 6- and 12-months after the GTO/ECHO

intervention is initiated; process evaluation data (attitudes and skills assessments in the five communities) will be conducted. *Weekly TA monitoring logs* from local TA staff and *Monthly Utilization surveys* from participants in the five targeted communities will be will be collected after the GTO intervention begins (Quarter 2) for up to one year.
Task 2.2 Conduct outcomes evaluation. In Year 1, Kilburn will extract data from the state database for the five targeted communities and comparisons in order to conduct preliminary analyses and data cleaning to define a set of baseline outcomes. In Year 2, Kilburn will extract data from the state database to assess outcomes during and after the intervention.

Task 3. Data Analyses
Task 3.1 Analyze process evaluation data. Data analyses will be ongoing throughout the GTO implementation period and in Year 2 following the end of the GTO implementation period.
Task 3.2 Analyze outcomes evaluation data. Data analyses will occur across both study years: preliminary analyses and baseline assessments in Year 1 and final analyses and outcomes findings in Year 2.

Task 4. Communication, Reporting and Dissemination
Task 4.1. Hold weekly project meetings. The project management team recognizes the importance of effective project management to ensure open communication regarding study progress. The evaluation team will meet with State and local training and technical teams (Coop Consulting and UNM CDD) on weekly basis to facilitate communication and study progress.
Task 4.2 Report to New Mexico stakeholders. Following the Project Kick-off meeting, evaluators will present regularly to the project stakeholders on evaluation progress. We anticipate this occurring at quarterly intervals.
Task 4.3 Report to HRSA. Upon confirmation of award, RAND will collaborate with the State of New Mexico and HRSA Program Officer to develop and confirm a timeline to report evaluation findings to meet award requirements.
Task 4.4 Dissemination of project and findings. Presentations at national conferences on project implementation (Hunter) and findings (Kilburn) will occur at the end of Years 1 (implementation) and 2 (outcomes).

Support and Collaboration with Key Stakeholders
Numerous partners, including all required partners, have participated at each phase of the on-going planning for the new Affordable Care Act home visiting program. The key partners who assisted in preparing this proposal, who represent and reflect the populations the embody the cultural diversity of the state, included: the IDEA Part C FIT program, who will be a major partner in developing the integrated system model at the state level and then shaping how it applies in communities; the Center for Development and Disability at the University of New Mexico, who is the state's Training and Technical Assistance provider and who will play a major role in how workforce capacity can be developed in rural and frontier areas; and the RAND Corporation, who co-developed the Getting to Outcomes community building model, as this addresses one of the biggest gaps in our system – rural and frontier communities that have no capacity, no or little system, no mobilization for this issue, and no significant momentum to develop an early childhood system in the community. Other individual collaborators included the Office of Child Development, the Department of Health, and the State Early Childhood Coordinator; Gallup-McKinley County Schools Director of Elementary Education, Pregnancy to

Three Task Force on Bernalillo County, Native American Pueblo Parenting Resources, Inc., San Felipe and Taos Pueblos Tribal Home Visiting Programs.

Implementation Plan Discussion

All core components of the implementation are noted above, and in the timeline (included as attachment). The areas below are further discussion of themes noted in the RFA.

Engaging Community: This plan is focused heavily on engaging community, in order to develop local stakeholders to plan and mobilize community members and organizations to participate in helping develop a plan to support their children's well-being. Town hall meetings will be held in every community, facilitated by staff of Coop Consulting and local CYFD staff. These meetings will focus on building awareness of the issue, and creating involvement. Town hall meetings will be followed by planning meetings in each community, identifying the who, what, how, etc. that are necessary to begin the process of creating local networks that can ultimately provide high quality home visiting services within an early childhood continuum. Finally the GTO training will start in earnest, following the steps of that process over the next 3 to 6 months, with on-site consultations on at least a bi-weekly basis with the local coalition that is forming and consolidating its vision and informed decision making processes.

Professional Development and Training: The Center for Development and Disability will develop a detailed training and TA plan that addresses the professional home visiting staff as they are hired. Their plan is based on a telehealth service delivery model, with electronic communication on a regular basis, twice monthly for the first six months, plus reflective supervision on the same frequency but on the alternate weeks. This Project ECHO process will be piloted and studied for its effectiveness as part of the project evaluation by RAND Corporation, with an anticipated expansion if successful into the remainder of the state.

Staffing and Subcontracting: Staff at the state level have just been hired to supervise the project. Subcontracts will be issued to community agencies to deliver home visiting services when a local has been developed, following the State Procurement Code. This will be directed by the new Home Visiting Program Manager being hired for all HRSA programs. Local home visiting staff will be recruited by those contracted providers to meet requirements for each program model. Subcontracting for those who will help support this project will be done under the state's rigorous procurement code (RAND Corporation, UNM, Coop Consulting, Jack Tweedie.

CQI Plan: The CQI Plan will build upon the state's existing model included in the state plan, but will be enhanced through the rigorous use of the GTO model and its strong emphasis on quality improvement. This will be built into all processes as local coalitions form and create community home visiting plans, but they will build on the core CQI process established by the state in the State Plan.

Fidelity will be a core measure of each model or promising program implementation, with the main process evaluation focus one of achieving fidelity. Fidelity assessment will be built into every program as it is beginning, and will be assessed regularly across all sites by the program evaluators with the assistance of Coop Consulting who will provide training on the use of fidelity tools.

Data on all Legislatively mandated benchmarks will be collected from local sites and aggregated by RAND Corporation for submission as a component of the program evaluation.

Coordination at the state level will begin immediately upon funding notification. State system stakeholders will begin a series of meetings to develop a new approach to integrate

services, and to leverage and braid funding streams to allow a more seamless system experience for families.

All activities will fit into the existing state administrative structure. All successful pilot activities will be assumed by state staff during the term of the project.

Project goals and lessons learned will be incorporated into the on-going work of CYFD, as a community development initiative that does not now exist. As one of the major gaps in the state system, this project has a huge importance to the state system and is potentially a major shift in how the state does business with communities, changing to an approach that partners with community members and helps create capacity, as partners, over a long period of time, and does not depend upon competitive processes that simply penalize communities with low capacity but high need, ensuring that those communities remain high need indefinitely, with no good prospects for changing their situation.

RESOLUTION OF CHALLENGES

Geographic Diversity/Dispersion-the study sites are located in different areas of the state and most are located some distance from the project team. Having a Study Team with members in different locations, away from the sites in which the programming is expected to occur, may appear logistically challenging. Coop Consulting and RAND have video and phone conference calling capability and project will have a dedicated Sharepoint website which allows file sharing. The model of having a physical presence at the local sites (Coop Consulting TA staff) on a bi-weekly basis combined with telephone and web communication worked well in our previous GTO studies funded by NIDA (1R01DA023277-01A2, Chinman, PI) and CDC (CE05-012, Chinman, PI), in which the community sites (Maine, South Carolina, respectively) were located away from where the researchers were located (Santa Monica, CA, Washington, DC, and Pittsburgh, PA).

Cultural diversity/Project Buy-in/Project success relies on collaboration among a diverse set of stakeholders. The state of New Mexico has a long history with the two primary collaborators on this project (Coop Consulting and RAND Corporation). Both Coop Consulting and RAND have successfully collaborated with community stakeholders of home visiting in New Mexico and the other named partner organizations across great distances in New Mexico. Both have been recognized by key stakeholders as culturally competent and sensitive to diversity needs and concerns. Over the past nine years, Coop Consulting has provided training, technical assistance and evaluation services in all five communities for different programs, but primarily for community coalition development. Coop Consulting is now working on a tribal prevention project through First Nations Community HealthSource developing epidemiological and indicator data for all 22 tribes located in the state. Since moving to New Mexico in 2006, Dr. Kilburn has been extensively involved in evaluating and implementing home visiting programs to improve child outcomes and has served on the New Mexico state Home Visiting Work Group. Additionally, for the randomized trial evaluation of the First Born® Program she is leading, Dr. Kilburn has met with an Evaluation Steering Committee for almost five years to engage community members in the research. Furthermore, Dr. Kilburn is also working with a tribal home visiting program; she is serving as the evaluator for the Taos Pueblo's Tribal Maternal, Infant, and Early Childhood Home Visiting Program. In preparation for this opportunity, stakeholders in the five neediest communities have expressed their support and interest in participation in the demonstration outlined herein (see Letters of Support section). The project

also has strong support from the University of New Mexico, Center of Developmental Disabilities that supports implementation of the ECHO model in New Mexico.

Building capacity in low resource areas presents a challenge. GTO has been tested among stakeholders that have a varying levels of exposure to it. Although our research has shown that increased exposure tends to increase adoption and utilization, other factors such as staff perceptions (e.g., complexity) influence use (Hunter et al., 2009b). Additionally, studies have shown that programs that were most likely to utilize GTO had some initial capacity to adopt it (Chinman et al., 2008). Given these findings, this demonstration project will work initially at the state level to identify procedures to best increase exposure, reduce complexity and build minimal levels of capacity in the targeted communities to ensure that the best conditions exist for GTO to be adopted and utilized. We will document these exposure and capacity building efforts to assist with future replication in other communities.

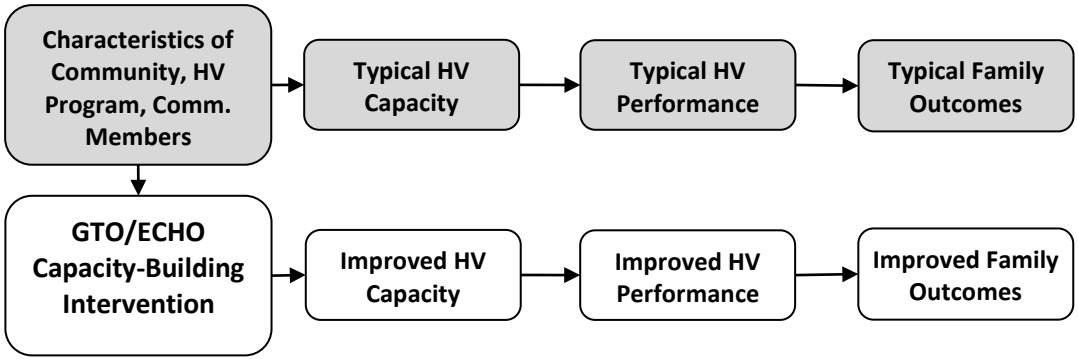
Ensuring fit of the evidence based home visiting model in the targeted communities. Our project team recognizes the need to ensure "fit" between the evidence-based home visiting model and the community in which it is being designated to be implemented. As such, GTO Step 4 specifically asks program stakeholders to consider the fit between community goals and objectives and potential evidence-based programs while also taken into account the local resources (or capacities, GTO Step 5) to implement the program. Therefore, local community stakeholders will be engaged in a planning process that considers fit before attempts will be made to implement an evidence-based home visiting program in the targeted community.

Study design poses limits to causal attribution. Because this study is designed to be a development and demonstration project in five diverse communities in New Mexico, we feel it is inappropriate at this phase of the research to engage in a randomized controlled trial study design. The goals of this research are primarily to gain input on the feasibility of the GTO and ECHO approaches to improve home visiting program capacities across five communities. A design that allows for iterative feedback to allow for improvements to the intervention over time is expected. Our goal at the end of this two-year project will be to have an training and technical assistance model that is appropriate for home visiting programs that we can then evaluate with more stringent experimental study designs in future research projects.

EVALUATION & TECHNICAL SUPPORT CAPACITY

The purpose of this evaluation is to assess whether the innovation proposed here increases a community's capacity to implement a continuum of home visiting services and whether successful implementation is associated with better outcomes for children and their families (see **Figure 6** below). Reflecting these dual purposes, the evaluation has two components: a process evaluation to examine the first issue (Intervention utilization and capacity building) and an outcome evaluation to investigate the second issue (improved family outcomes). As can be seen in **Figure 6**, the goal of this project is to deliver a GTO/ECHO intervention that improves community capacity and leads to improved family outcomes, as displayed in the white boxes. Existing factors that exist absent the intervention are designated by the gray boxes.

Figure 6. Proposed Intervention Logic Model



Our proposed evaluation includes these strengths:

- A project team that includes expertise across key methods relevant to the evaluation including process evaluation, outcome evaluation, collecting data through semi-structured interviews, analyzing administrative data, and longitudinal data analysis.
- Team member experience with the substantive issues related to the innovation, such as Getting to Outcomes, evidence-based home visiting programs and the research literature on home visiting, the New Mexico home visiting context, and the Maternal and Infant Early Childhood Home Visiting program.
- A research design that includes both qualitative and quantitative analysis and that incorporates stakeholder participation.
- Data will be from existing administrative data for the outcomes analysis, making the evaluation very cost effective.
- Insights generated from the evaluation will provide tangible benefits to home visiting practice in New Mexico and the rest of the country, by demonstrating the feasibility and value of applying two research-based approaches from other service sectors (GTO and ECHO) to the home visiting arena and assessing the gains from establishing an integrated continuum of home visiting services.
- Team members reflect cultural diversity of the state and demonstrate cultural competency.

Because this intervention is directed at the *system* and *delivery* levels, it does not coincide directly with the MIECHV evidence standards, but rather uses appropriate mechanisms to assess systems change.

IRB Procedures

The research proposed as part of this project will be reviewed by RAND's Human Subjects Protection Committee (HSPC), which is RAND's Institutional Review Board that reviews research involving human subjects, as required by federal regulations. RAND's "Federalwide Assurance for the Protection of Human Subjects" (FWA00003425) serves as our assurance of compliance with the regulations of 16 federal departments and agencies. According to this assurance, the Committee is responsible for review regardless of source of funding. Principal investigators are responsible for submitting their research for HSPC review, for complying with HSPC requirements before subject enrollment or data acquisition begins, for reporting progress of reviewable research at least annually, and for reporting immediately any harms to human

subjects or other unanticipated events involving risks to subjects or others. Any study involving human subjects, especially studies that will collect sensitive information, must take care to protect the legitimate interests of these subjects. Our concern is to maintain the confidentiality of the individual level data and names of research participants that will be collected during the course of the proposed project. Upon being funded, the research plan for this study and a data safeguarding plan will be submitted to RAND's internal Human Subjects Protection Committee (HSPC) for review. The HSPC will review the project annually to ensure compliance with approved procedures.

Process Evaluation

The goals of the process evaluation are to determine whether: a) the intervention (GTO and ECHO, where appropriate) is utilized and b) if utilization impacts capacity to develop and implement an integrated continuum of home visiting services. Next, we discuss how we plan to address each of these goals.

Process Evaluation Goal 1a: Assess utilization of GTO/ECHO Measures. The Study Team will monitor GTO utilization through three methods described below: (1) A *Technical Assistance (TA) Monitoring Form* completed by TA providers will be used to track date, type of TA (in person, phone, email), topics addressed, duration of TA, and a narrative description of TA provided. This form was developed and tested in previous GTO projects. (2) A *Monthly Utilization Survey* will be sent to all participants receiving GTO or ECHO assistance via email each month, asking questions about time spent on each GTO step/ECHO model outside of TA/reflective supervision sessions. Dr. Chinman is currently using a similar survey for one of his GTO projects in three homeless programs and has an average weekly response rate after 10 months of 92%. *(3) Qualitative Interviews* will explore participant perceptions of 1) benefits to using the GTO/ECHO models; 2) benefits relative to their previous practice; 3) aspects of GTO/ECHO that were not helpful; 4) challenges to using GTO/ECHO; 5) ways in which GTO/ECHO could be improved; and 6) barriers to use of GTO/ECHO after the study ends. The protocol will be finalized in the start-up phase of the grant in consultation with the Study Team and collaborating partners. Dr. Hunter has previous experience with conducting these interviews (Chinman, Hunter, Ebener, in press).

Data Collection. TA providers will complete the Excel-based *TA Monitoring Form* after each TA session and upload it to the study Sharepoint website within 24 hours to be used in TA supervision. A *Monthly Utilization Survey* will be emailed to participants receiving GTO/ECHO each month. Following established qualitative methods (McCraken, 1988; Kvale, 1996; Bernard, 2000), RAND staff will conduct semi-structured *Qualitative Interviews* with participants twice: midway through GTO implementation (6 months) and at the end of intervention (12 months). Within each topic area, open-ended questions will be asked first to reduce possible bias (Becker, 1958; Bernard, 2002). Then the respondent is asked more focused, prompting questions. Standard probes, such as verification and compare and contrast questions will be used to generate lists, short qualitative answers, and close-ended, quantitative data about the topic (O'Brien, 1993). The interview will last about 30 minutes and be administered over the phone. All interviews will be digitally recorded and field notes will be created.

Hypothesis. Most analyses in Aim 1a are descriptive of GTO use. However, based on previous studies of GTO (Chinman et al., 2008), we hypothesize that TA time are significantly positively correlated with improvements in the capacity of program staff (see Aim 1b).

Data Analysis. Thematic analysis of the narrative in the *TA Monitoring Forms and*

Weekly Utilization Survey and descriptive statistics (type of TA, duration of time spent on GTO activities during and outside of TA, topics addressed during and outside of TA) will be used to examine patterns of GTO TA utilized. To examine the association between change in staff capacity to conduct GTO activities and the amount of TA delivered, hours of TA and change in the Capacity score will be correlated after each interview (at 6 and 12 months). For *Qualitative Interviews*, the RAND research team will examine the text for themes. Two coders (Hunter and Mattox) will review interviews and mark instances where each theme occurs. This allows for calculation of intercoder reliability and increases the confidence of identifying all instances of a theme with their core and periphery thematic exemplars (Ryan, 1999). Once coding is complete, the range and central tendency of each theme will be described by presenting segments of text—verbatim quotes from informants—as exemplars of concepts. The end product identifies specific themes and captures a detailed understanding of how GTO worked and the factors that impeded or facilitated its use.

Statistical Power. Because of our small sample size (5 communities), we will have limited statistical power. However, our previous studies have shown a $\underline{r} = 0.59$ correlation or greater between TA hours and capacity improvement among a group of six programs (Chinman et al., 2008).

Process Evaluation Goal 1b: Assess the effects of GTO (and ECHO, where appropriate) utilization on capacity to develop and implement an integrated continuum of HV services Measures. The evaluation of capacity will focus on attitudes (of the use of EBPs through the *Evidence-Based Practice Attitudes Scale,* Aarons, 2004) and skills (performing the various tasks associated with high quality integrated continuum of home visiting services, assessed with the *Capacity Interview*).The *Evidence-Based Practice Attitudes Scale* is a 15 item scale (alpha=.77) with four subscales. Two measure the extent to which a participant would adopt a new practice if it were intuitively appealing (Appeal) or required by an agency, supervisor, or state (Requirements) from 0 (not at all) to 4 (to a very great extent). The Openness subscale measures how open participants are to trying new interventions and the Divergence subscale measures how much participants value experience over research-based interventions. Originally developed by Aarons in 2004, it has been used in numerous studies (e.g., Gray et al., 2009; Jameson et al., 2009) and has reliable subscales (Aarons et al., 2007).

Based on previous GTO research (Chinman et al., 2008; Chinman et al., 2009), we will use the *Capacity Interview* to assess staff capacity to conduct high-quality home visiting services. Although communities consist of individual people with varying levels of abilities, capacity ratings will made at the community level since individuals will operate as a unit. Capacity ratings are made using a structured interview with key community members in charge of the integration of continuum of home visiting services that will be asked to participate in the intervention. The Capacity Interview has 14 items ("components") tied to each of the ten steps of the GTO model, averaging to a Total Score. Each component has seven response choices, described with specific observable behaviors, that range from "highly faithful" to the ideal prevention practice to "highly divergent" from ideal practice. In a prior GTO project (Chinman et al., 2008), the Total Score was sensitive to change and the average inter-rater reliability for the Total Score of all 14 components was .74. Inter-rater reliability for each component ranged from .65-.96. We will work with the ECHO program staff to develop a similar interview protocol to assess ECHO capacity ratings for the communities targeted to utilize this approach.

Data Collection. All participants will be recruited by the RAND Research Assistant (Mattox) to participate in both the self-report survey and the Capacity Interview. The *Evidence-*

Based Practice Attitudes Scale will be a self-report survey completed prior to the start of the Capacity Interview. The *Capacity Interviews* will be conducted with participants at: baseline (prior to the GTO intervention), midpoint of the intervention (six months), post-intervention (12 months). While staff members may turn over, consistent with past GTO projects, no attrition of entire communities is expected. Administration will be through a structured interview with key participants at each site, conducted by RAND staff (Hunter, Mattox) by phone. Based on previous experience, the interview should last about 30 minutes. Dr. Hunter is trained and has administered these interviews during another GTO project (Chinman et al., 2008). Dr. Hunter will train Mattox using recorded interviews from a previous GTO project until a high degree of reliability is achieved (intraclass correlation=.8 or higher). Dr. Hunter will be a second coder, independently rating a random sample of 20% of the interviews. Inter-rater reliability (intraclass correlation) will be calculated. If there is significant divergence, the raters will discuss and achieve a consensus.

Hypothesis. Staff attitudes towards EBPs and skills to implement EBPs (measured by the Capacity Interview) will improve over time.

Data Analysis

Preliminary analyses. Data will be reviewed for ambiguous, missing, or incorrect information prior to analyses. Mean imputation or other missing data techniques will be used where appropriate. Preliminary data analyses will include review of the frequency distributions, descriptive statistics (i.e., mean, standard deviations, medians, and ranges). Data will be assessed for normality and appropriate transformations will be made. Alpha reliability will be assessed for scale measures. Attrition effects will be assessed by comparing participants that did or did not complete the three-time point assessments. Characteristics of participants who did and did not complete will be compared to understand possible bias that may be present through selective attrition. If significant differences are found among participants who did and did not complete the assessments, these differences will be noted and variables will be considered as covariates in any outcome analyses.

We will examine whether there are significant improvements over time in EBP attitudes and skills (measured by the *Capacity Interview*) by examining participant (EBP attitudes) and community level (Capacity ratings) changes at the baseline, mid-intervention and post-intervention time points. Changes will be assessed using matched t-tests. We will examine whether EBP Attitude/Capacity scores follow a linear or non-linear trend over time, which would be particularly important for assessing any possible decay in capacity. Although there are limitations to this pre-/post-evaluation design (e.g. historical biases, uncontrolled third variable effects), it is appropriate given the purpose and pilot phase of the proposed project and the costs and logistical issues involved with an alternative design, such as an experimental design, which could better provide unbiased program effect estimates.

Statistical Power. As noted previously, because of our small sample size (5 communities), we will have limited statistical power. We consider our analyses exploratory in nature in order to develop mean change estimates that could be utilized in planning future experimental studies. This approach is consistent with stage models of behavioral intervention development research (Rounsaville, Carroll & Onken, 2001). As noted in the following Outcomes Evaluation section, we will employ a more rigorous method to assess whether the intervention influenced outcomes.

Outcome Evaluation

While the process evaluation will indicate the degree to which implementing GTO, the State home visiting system change, and ECHO were feasible and the factors that facilitated their adoption, the ultimate objective of the project is not to make these capacity changes but rather to enhance the performance measures of home visiting programs and improve outcomes for vulnerable children and their families. In terms of the logic model that the State uses to characterize its home visiting program (see **Figure 3**), this includes achieving the three Program Goals and the four Core Service Components (Outputs/Activities).

Data Source and Measures. The data to be used for these analyses will be extracted from the State Home Visiting Program Database ("State Database"), which was designed by CYFD for the programs that they fund. As such, the outcome and service provision data in this database align with the logic model in **Figure 3** and correspond to the goals of this project. For each child whose family receives home visiting services, this information is entered by the home visiting service provider and is available from the State Database:

- Basic client demographic information – client ID, client name, date of birth, gender, ethnicity, contact (phone number, address), residence county, TANF eligibility, child birth weight and gestational age;
- Program status information – referral date, enrollment active date, discharge date, reason for referral, reason for discharge, referral source, staff assignments;
- Service provision information – type of service, date of service, length of service, frequency, dosage, fidelity, service status, service notes, actions/outcomes;
- Screenings for service needs – for the child: Ages and Stages Questionnaire (ASQ) and Ages and Stages: Social-Emotional (ASQ:SE), for the adult/parent: Edinburgh Postnatal Depression Scale (EPDS), Knowledge of Infant Development Inventory (KIDI), Social Support Index (SSI), New Mexico Medical Assistance Division Recommended Anticipatory Guidance, Woman Abuse Screening Tool – Short (WAST-S) (*See periodicity table and short description of the screening tools below;
- Referrals made to social services/community agencies – referral date, social service/community agency, reason, status of referrals made (whether family followed through with referral);
- Service plan information – service plan developed for each family and identified outcomes by family and their disposition (outcomes accomplished) in each plan.

***Empirical Model*.** As described above, three primary *changes* are proposed for this project:

- Training five high-need communities in the use of GTO to build home visiting capacity
- Implement state-level policies to support the work of the communities, and
- Test the use of the ECHO model to provide specialty services that are lacking in the five target communities.

This evaluation proposes to examine the impacts of the changes that are made in the five target communities, but not in the other 15 home visiting sites that the State funds through general funds. That is, this part of the evaluation will focus on the impact of the first and third changes.

In the absence of experimental data to assess the effect of these two changes in home visiting services, we propose to use a quasi-experimental empirical strategy. These innovations will be rolled out over time, commencing in different counties at different times. This enables us

to compare outcomes of children in areas where the innovations were implemented earlier to the outcomes of children in areas where the innovation arrived later (or rolled out at a slower pace).

The first cohort of children in New Mexico's home visiting program that were included in the State Database received services in 2009, and this project will be able to capture data for analysis through the first half of 2013. We will use quarters as the time period for analysis, which implies that we will observe 8 time periods. In each quarter, the State system provides services to more than 500 children and their families, and this will be slightly larger in the later quarters of the date due to the investments from the MIECHV-funded sites. Our empirical approach will exploit the fact that we can observe outcomes for children who were received services before these innovations began, as well as outcomes for cohorts that had access to the innovations at varying stages of the STM, that was discussed above. The four stages of this model are: exposure, adoption, implementation and practice. In addition to variation across time in the implementation of the innovations, there is also variation across counties as the innovations will be adopted at varying rates (points in time). The empirical question is whether, holding other factors constant, the average outcome for a child in a site in later stages of the innovation is better than the average outcome for a child in that site before the innovation or at earlier stages in the innovation. This approach goes beyond a simple pre-post implementation design to exploit the variation across counties in participating in the innovation and the stage of the innovation using STM in the post-implementation period.

In terms of the empirical model, we propose to use a difference-in-difference (DD) methodology, which is a variant of a single-case design (Cameron and Trivedi, 2005, Kratochwill et al, 2010). This empirical approach has been used in other studies of the effects of the introduction of other early child services on outcomes of individuals in a particular geographic unit (Schlosser, 2005, Baker, Gruber and Milligan, 2005, Meyer, 1995. In particular, the determinants of an outcome, Y, at time, *t*, for a cohort of children, *c*, who were the same age, in county, *j*, is estimated by the following equation:

$$Y_{cjt} = X'_{jt}\beta + \alpha P_{cj} + \phi S_{cj} + \lambda D_{cj} + \delta_c + \delta_j + \varepsilon_{cjt} \qquad (2)$$

In this equation, X'_{jt} is a vector of time-varying characteristics of the county that would be likely to have influenced the outcome Y_{cjt}. The variable P_{cj} is the primary policy variable of interest and indicates the stage of implementation using STM. The primary parameter of interest is α which measures the relationship between being exposed to the innovation and the outcome, Y_{cj}. The variable S_{cj} represents other time-varying variables for cohort *c* in county *j*. We will explore the availability of time-varying contextual factors for each county, such as the number of pediatricians per capita to use for these controls. The variable D_{cj} represents the fraction of children in the county defined as "at-risk" using measures such as the child poverty rate. This controls for the possibility that the population of children served in the county has changed over time in terms of how disadvantaged participants were. The two terms δ_c and δ_j are cohort and county fixed effects, respectively. The cohort effect controls for any unmeasured county invariant factors specific to a particular cohort, and the county-specific term controls for any unmeasured time-invariant factors specific to a particular county. We will also estimate the models with county-specific time trends to control for time-varying county-specific unobserved factors.

We will explore the use of two ways of characterizing the adoption of the two innovations, the use of GTO for community planning and capacity building, and the use of ECHO for providing services and technical assistance. One will be using measures of STM, which is produced in the process evaluation portion of the evaluation as described above. The

second will be the amount of time (in quarters) that has passed since the innovation began. Chinman et al (2011) use this second approach in their evaluation of a variant of GTO.

To ensure that we have a comprehensive set of variables in the X'_{jt} vector to explain differences in site outcomes, we will conduct an extensive literature and policy review of factors that may explain each of our outcomes of interest. We will also review policy and demographic changes in the state, such as changes in health care coverage for children, which may have influenced the outcomes above. As discussed above, we will have regular interaction with county and State stakeholders who are extremely knowledgeable about the New Mexico context, home visiting, child and maternal health services, and other issues, and they will assist us in identifying policy changes and other factors that we may need to account for. The inclusion of year fixed effects and county-specific time trends will control for variables that we are not able to measure but which are trending through time at the state or county level, such as the growth of the public's familiarity and comfort with broader based home visiting services. Other unmeasured factors that differ across counties but do not change over time will be controlled for as well with the county fixed effects.

The State Database includes several child-level variables that we will use as the outcome variables, Y_{cj}. We will estimate separate equations for each of these variables, which include:

- Child's birthweight (for prenatal home visited children);
- Gestational age (for prenatal home visiting children);
- Whether family commenced home visiting prenatally;
- Whether family commenced home visiting by two months of child's age;
- Whether family commenced home visiting by one year of age;
- Service referrals made from HV program to other service;
- Family followed-up with referral;
- Whether child received age-appropriate Ages and Stages Questionnaires screening (a screening system to identify infants or young children who are in need of further assessment to determine whether they are eligible for early intervention or early childhood special education services);
- The Knowledge of Infant Development Inventory (KIDI) at prenatal, three months and one year administration (assesses a person's knowledge of parental practices, developmental processes, and infant norms);
- Whether the Woman Abuse Screening Tool was administered annually (used by family physicians to identify female patients experiencing abuse in their current relationships)
- Edinburgh Postnatal Depression Scale; this will also be examined to determine its cultural relevance, and compared to other depression measures tested with the population groups represented in the state;
- Social Support Index (a 17-item instrument designed to measure the degree to which families find support in their communities);
- Whether the New Mexico Medical Assistance Division Recommended Anticipatory Guidance safety checklist was administered by the home visitor.
- Spanish and Navajo tools and interview protocols will be utilized and developed as needed as other measurement needs are established for the project.

Some of these measures are outcomes (such as the depression scale), while others just capture whether or not a tool was administered. This latter type of variable is collected for measures that we do not expect home visiting to change, but rather is an instance where we want to confirm that the required home visiting services or assessments were provided to families. To avoid

reporting bias, we will report the outcomes of all of the estimated equations, even the ones that have a null finding.

Executing the Analysis. The first step of the analysis will be to clean the data that we receive from the State and prepare analysis files. Elizabeth Roth, a RAND Research Programmer, will clean the data and prepare the analysis files under the direction of Dr. Kilburn. Cleaning will involve checking coded data for values outside of normal ranges and consistency. RAND will not obtain any identifying information for families (such as addresses) according to the data safeguarding plan developed as part of our IRB review, which was described above. Families will have unique identifiers that are unrelated to personal information to allow their records to be linked across time. The second step is to summarize the data, stratifying by site and stage of implementation of the innovations. This will provide an overview of differences among sites and between participants and non-participants in the innovations. We will pay particular attention to not only the average values and proportions, but also to the amount of variation in the responses within and across sites, which will inform the feasibility of identification of the empirical specifications we plan to estimate. In the final step, we will estimate the empirical model outlined above, with within-state differences in implementation of the innovations over time as the policy variable of interest.

In analyzing and documenting the empirical results, we will be cognizant of the limitations of our approach. First, there will be the potential for bias if confounding factors, correlated with our policy variables of interest, are omitted from the models. Our literature and policy review will help identify potential missing variables and the bias that might result. Second, for those outcomes that are measured at older ages (e.g., ASQ at 36 months), there will be fewer observations. For these outcomes, we will assess the statistical power we have in our models to detect significant effects. Third, we may have limited numbers of post-intervention quarters of data, that especially for the ECHO innovation. Note that there will be five sites participating in the proposed innovation and 15 state-supported sites that will not participate in the innovation. If we assume that the target counties will begin the proposed GTO innovation by the first quarter of 2012, then we will observe at most six quarters of data after the GTO innovation commences. We expect that the use of ECHO in the target counties will begin in the last quarter of 2012 at the earliest, then we would observe only three quarters of post-intervention data for this innovation. Similarly, for the target counties that currently have no home visiting services in place (Quay and Luna), there will be a limited number of quarters of child outcome data available since they will begin implementing home visiting services in the second year of this demonstration project. With all of these issues, by considering the robustness of the findings across multiple outcomes, we can increase the confidence of our results despite the limits of the methodology.

Related Study Team Analyses. Dr. Kilburn has led analyses of longitudinal data using similar models in a number of studies of child outcomes. A recent project, which was funded by National Institutes of Health (NIH), used fixed effects methods and longitudinal data to test economic hypotheses regarding whether parents invest more in children with relatively higher endowments or lower endowments (Datar, Kilburn and Loughran, 2010) and the relative effect of early parental investments in children on children's later school achievement scores and other outcomes (Loughran, Datar and Kilburn, 2008). Another ongoing NIH-funded study examines the relationship between state laws requiring booster seat use for children over age 4 and rates of

auto injuries and fatalities for children in the state. This project estimates difference-in-difference models very similar to the ones proposed here.

Looking to the Future. An important aspect of characterizing the value of the innovations proposed here is to capture the costs of implementing them. As part of our site visits and interviews, we will be collecting information that will lend itself to cost analysis, including the number of individuals participating, the number of meetings, the number of additional referrals generated, and other resources required. While cost analysis is not a component of the evaluation proposed here, if it is determined that the innovation has been effective and is worth replicating, we will be well positioned to estimate costs in future analyses. Furthermore, we will also be poised to continue the estimation strategy proposed here. Since we are using data that State home visiting sites are required to collect, we can always replicate the analysis with future cohorts of sites or longer time periods of implementing the innovations.

ORGANIZATIONAL INFORMATION

The Children, Youth and Families Department (CYFD) is New Mexico's Child Welfare Agency, responsible for early childhood care and education programs, child protective services, adoptions, and juvenile justice. CYFD was created to house state programs supporting children from birth through age 21. It administers Title II CAPTA funds, houses the Head Start Collaboration Office, manages the Child Care and Development Fund, and is the lead agency for the new Early Childhood Care and Education Act, which was signed into law by Governor Susana Martinez in April, 2011. As a comprehensive state agency for children, youth and their families, the Department administers a wide range of promotion, prevention, intervention and treatment or rehabilitative services. It is a statutory responsibility of the Department to focus on prevention services to reduce the need for higher levels of care. The Department has a strong commitment to home visiting as a strategy to strengthen children's development, well-being and readiness for school.

The Early Childhood Services Division of CYFD was established by the executive in 2009 to consolidate and align early childhood care and education programs. Bureaus within the Division are Child Care Services (responsible for administration of the Child Care Development Fund, state and federal child care subsidy payments as well as child care licensing), Family Nutrition (responsible for administration of the USDA Child and Adult Care Food Program), and the Office of Child Development. The Office of Child Development (OCD) is responsible for a wide range of early childhood care and education services and will direct the proposed project. OCD was established by statute in 1989, funded in July 1990, and became operational in November 1990. The OCD has responsible for: (1) establishing program standards for state-funded early childhood programs; 2) developing, implementing and managing state-funded early childhood programs; (2) home visiting; (3) early childhood program quality initiatives; (4) child care resource and referral services; (5) training and technical assistance; (5) professional development and the licensure/certification of all personnel working with children birth through third grade; (6) the Head Start Collaboration Office; (7) Infant Mental Health services; and (8) the development and implementation of New Mexico's Early Learning Guidelines/PreK Outcomes across all systems as an alignment strategy. The guiding principle of the OCD is that all New Mexico children, from birth through age eight, and their families, have access to a quality, age- and individually-appropriate child development system.

Because of the many nationally-recognized innovative accomplishments of the Office of Child Development and its leadership in planning for the establishment of the state Early Childhood Care and Education Advisory Council, OCD was given responsibility for the state Early Learning Advisory Council (ELAC). The state plan for the Early Learning Advisory Council assumes responsibility for making policy recommendations to transform seven federal-, tribal-, and state-funded early childhood learning systems into a "system of systems". This system includes home visiting, early intervention, Head Start, child care, family support, PreK and early childhood special education. The goal of the ELAC is that "every child in New Mexico will have an equal opportunity to success in school, based upon equitable access to an aligned and high-quality early learning system(s)."

Led by Dan Haggard (Deputy Director of the Early Childhood Services Division), Dr. Sam Howarth (OCD Bureau Chief), and Dr. Jesse Leinfelder (federal Home Visiting Program Manager), CYFD possesses the expertise, resources and strengths to successfully implement this project. The OCD now has two home visiting program managers, one who directs the state-funded home visiting system and programs that served almost 1,400 families last year in 21 of the state's 33 counties, and one who directs the HRSA formula-funded home visiting programs and this proposed project.

The Early Childhood Division of the *Center for Development and Disability* (CDD) at the University of New Mexico, houses an extensive cadre of training and technical assistance (T and TA) programs that have served the New Mexico early childhood community for over 20 years. Through long-term contracts with New Mexico state agencies, including the Department of Health, the Public Education Department, and CYFD, the CDD has worked with the state to build a system of T and TA across state agencies, programs, and funding sources for young children and their families.

In 1990, the CDD created a training unit of contractors with expertise in early childhood disability services to address the learning needs of the Family Infant Toddler Program (FIT), which focused on trainings on specific disability topics. Over time, broader programmatic and management issues emerged and the CDD began offering reflective consultation to some FIT providers. In 2003, CDD received funding for a telehealth project to deliver reflective supervision through consultancy to clusters of programs at distant locations throughout the state. As an early supporter of the telehealth project, the Extension for Community Healthcare Outcomes (ECHO) program at University of New Mexico offered access to the UNM ECHO Polycom bridge, enabling CDD to link to multiple sites to access video connections and recording equipment. ECHO at CDD has expanded to include multiple initiatives through CYFD, including reflective supervision to Early Childhood Inclusion Specialists, consultation to child care programs, and technical assistance to a broad range of early childhood providers and administrators.

The *RAND Corporation* is a non-profit research institution committed to improving decision making through objective research and analysis. RAND will lead the adaptation of the GTO model and direct its implementation, as well as provide program evaluation services for the entire project. This research will be conducted jointly in two of RAND's divisions, RAND Health and RAND Labor and Population, which are known for their research related to improving early childhood and prevention services. They are also known for their work in diverse cultures and with diverse language populations. Both units and the analysts who will staff this project have deep expertise and extensive experience in conducting both implementation and impact evaluations and have the insight and experience to determine how to design an evaluation to ensure that these skills are used to produce the most rigorous, useful, and cost-efficient analyses possible. Division management will provide the following types of

oversight for the project to ensure the quality and timeliness of the research: budget and timeline monitoring, human subjects protection and IRB review, quality assurance through peer review, and other ad hoc assistance, such as human resources consulting. This project will also receive support from RAND's corporate infrastructure. The Publications Department will professionally publish all reports and manuals, and these services will include formatting, editing and posting on the Internet. The Office of External Affairs will assist with dissemination of the findings through such approaches as RAND email newsletters and featuring of the products on various RAND Web site pages. Other corporate offices, such as the office of Media Relations and the Congressional Relations Office will be available to assist as needed.

Coop Consulting, Inc., Coop Consulting, Inc. is a small research, evaluation, planning and training firm located in Santa Fe, New Mexico. The president of the firm is Michael E. Coop, who is the lead investigator on all projects. Mr. Coop has seventeen years experience specializing in public sector organizational development, research and evaluation, project planning and coordination, and training and facilitation services. Areas of focus include: early childhood development and education programs, youth and community development initiatives, and primary health care systems. The firm has a staff of five and has worked with the GTO system for many years, both using it in communities and presenting workshops about the system. Coop Consulting will lead the local GTO training efforts in the five communities, as well as facilitate the statewide planning work group to develop a new integrated home visiting system.

Record of accomplishments for CYFD is included in Attachment 6.

CYFD requires *cultural sensitivity* and includes it as a core competency in its home visiting standards. The Office of Child Development participates in the NAEYC Cultural Competency Project sponsored by the Mailman Foundation and will host a state-wide summit regarding cultural competency in early childhood programs in August, 2011. The summit will be co-sponsored with the New Mexico Business Partnership, funded by the W. K. Kellogg Foundation. Cultural responsiveness naturally becomes a part of reflective supervision, self assessment, and quality improvement. Home visitors who speak languages other than English are sought for the high percentage of clients who speak the many languages found in New Mexico. There is normally an incentive in hiring and salary for individuals who can speak other languages, and programs are encouraged to hire those of the same culture as their target populations whenever possible. Translation services are provided when needed.

The Office of Child Development has a long history of funding standards-based home visiting programs that mandate the administration of a battery of *assessments*. Developmental *assessments*, for example, are required at semi-annual increments and are entered into the state's client database system. This system is being revised currently so that it can be more effectively used as for continuous *quality improvement* by establishing benchmarks and indicators of change so that state- and federally-funded home visiting programs are tracking common client outcomes.

CYFD will seek expansion funds to *maintain the program capacity* and fund evidence-based home visiting services that are developed under this project. It will also determine strategies to shift state funds to support these communities if necessary to maintain capacity that is developed. CYFD's Cabinet Secretary Yolanda Berumen-Deines expresses her commitment, in the attached letter of support and endorsement, that she will *maintain and, if possible, expand funding* of the state-funded home visiting program.

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