Early Outcomes for Programs and Families in Children's Futures

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P/PV Public/Private Ventures
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Introduction

Chapter I

In 2002, Children's Futures (CF), a multi-year community-change initiative, was launched in Trenton, NJ. Intended to improve the lives of very young children and their families, it provides a broad range of social services, from parenting programs to efforts to improve health and childcare. Trenton was selected as the initiative's site for several reasons. The initiative was funded primarily by the Robert Wood Johnson Foundation, which wanted to invest in a place-based initiative in its home state. Trenton was a strong candidate: It is small (about 85,000 residents) and therefore capable of providing lessons about how to operate similar efforts in other small American cities. It also has a relatively poor population—28 percent of households have incomes below $20,000, and another 40 percent have incomes between $20,000 and $35,000[1]—composed primarily of African Americans and Latinos. Furthermore, its political environment is more stable than that of other New Jersey cities, which means that the chances of political upheavals interfering with initiative activities are smaller than in other cities.

This is the third of several reports about CF. The first, *Children's Futures' First Five Years: Lessons and Early Outcomes of a Community Change Initiative*, summarized the first five years of the initiative's implementation and preliminary outcomes. The second, *Collaboration and Community Change in the Children's Futures Initiative*, focused on program implementation and the types of collaborative efforts that emerged as a result of the initiative.[2]

This report examines programmatic achievements and outcomes for Trenton's families at the end of the initiative's first five years and addresses issues related to cost, partnership development and future sustainability. In particular, it addresses three types of programs—home visiting, training to improve preventive medical care, and childcare quality improvement efforts. These represent a fairly narrow selection of CF's efforts, which also include father involvement, domestic violence prevention and behavioral healthcare. We selected the programs based on three criteria. First, they are expensive—especially home visiting—and many of CF's resources have gone into them. Second, all three efforts have been consistently implemented and have met, or come close to meeting, programmatic benchmarks. And third, at least some outcomes information is available for each. None of CF's other efforts meet all three criteria.

Since the information from this report was collected and compiled, the initiative has made significant changes to its structure, activities and leadership. Because this report focuses on the outcomes achieved through the first five years under the earlier structures and leadership, we do not report the changes here. They will be described in future reports.

Children's Futures' Goals, Activities and Organization

In attempting to improve the well-being of Trenton's families, CF has specific goals, uses several strategies, and works in multiple health and social services arenas.

The initiative has two major goals: to improve young children's health and school readiness. These goals in turn encompass a range of specific outcomes: Children will be fully immunized on time to avoid illnesses. They will have fewer hospitalizations and emergency room visits for injuries or illnesses that could have been avoided or treated earlier through primary care or prevention efforts, including child abuse prevention. Developmentally, children will enter preschool (the Trenton public school system provides preschool to all children) with the social, emotional, physical and cognitive skills necessary to succeed.

In order to better serve children and families, CF has initiated new services, expanded existing services, provided technical assistance to strengthen both new and existing services, and worked to increase collaboration and communication among Trenton's social service agencies.

The initiative focuses on several major types of services:

- *Parenting services for mothers and fathers.* When the initiative began, Trenton had only two home-visiting programs for mothers; it has now significantly expanded these efforts. A Fatherhood Collaborative was also established to provide fathers with the supports and information necessary to become more involved in their children's lives. These services include parent education, activities for fathers and children, and mentoring.

  In addition, the initiative established five centers—four parent-child centers and one father center—designed to accommodate a range of activities for parents and children, including parent support groups and music and literacy activities.

  Finally, behavioral health services, including substance abuse treatment, are provided to mothers and fathers.

- *Efforts to improve medical care and families' access to it.* The initiative works with pediatric and family practices that serve Trenton residents to increase lead screening and on-time immunization rates, improve practices' identification and prevention of child abuse, and improve asthma management. Another effort works with managed healthcare plans in New Jersey to improve prenatal care. CF also engages in state policy efforts to improve funding for health services.

- *Childcare quality improvement efforts.* CF has funded technical assistance to improve the quality of childcare centers and family childcare homes, as well as efforts to raise and enforce state childcare standards.

These services are provided through a complex organizational structure. At the center of the structure is Children's Futures, Inc., a community-based organization created by RWJF to disburse its funds, monitor efforts, and provide leadership and some technical assistance. Throughout this report, we refer to that organization as "Children's Futures, Inc." or "CF, Inc.," to distinguish it from the overall initiative (referred to as CF), which includes the agencies, people and efforts that perform the initiative's direct service and most of the technical assistance.

Multiple agencies are involved in the initiative. The Trenton Division of Health has played a key role in the parenting component. It is the recipient of a federally funded Healthy Start grant designed to improve birth outcomes and plays a major role in planning and monitoring all the home-visiting programs. It also runs two home-visiting programs.

Five agencies have each established one of the parenting centers mentioned above. Also, until January 2008, four of those agencies, Catholic Charities, the Children's Home Society of New Jersey, Mercer Street Friends and St. Francis Medical Center, each ran one of the home-visiting programs. The fifth, Union Industrial Home for Children[3], coordinated and ran father-involvement activities.[4]

One agency, Greater Trenton Behavioral HealthCare, leads the behavioral healthcare component. It is responsible for conducting client assessments and providing services and referrals to other agencies.

The local childcare resource and referral agency, Child Care Connection, has taken the lead in efforts to improve childcare quality. However, a key CF, Inc., staff member works closely with that agency on strategy, and she and the agency's executive director are leaders in a New Jersey effort to improve childcare in the state.

Two organizations, the Center for Health Care Strategies and the New Jersey Chapter of the American Academy of Pediatrics, have been retained by CF, Inc., to provide technical assistance on improving medical care.

These 11 agencies form the core of CF's activities. Additional agencies either receive funds to provide services or receive technical assistance. The former category includes an agency that provides books to parents and another that provides technical assistance to other agencies around domestic violence recognition and prevention. The latter category includes medical practices, childcare centers and family childcare providers that receive training from the agencies mentioned earlier.

Initiative Leadership

Although CF, Inc., staff coordinated efforts to design the initiative, they worked with executives from city departments and agencies to do so. After the initial planning period (which took place primarily in 2001 and 2002), CF, Inc., and the Trenton Division of Health continued to coordinate and monitor efforts. The CF, Inc., staff have a strong understanding of the scope of the initiative's many activities and are the major funder, giving them a strong leadership role. Although CF, Inc., convenes executive directors from its key grantees several times a year, these meetings function largely to provide them with information and not to plan or advise. The core agencies have long histories in providing services in Trenton, however, so CF, Inc., draws on the expertise and relationships of their executive directors in some of its policy work. Thus, CF, Inc., staff see their role as primarily focused on facilitating activities.

CF operates on multiple levels—family, community, organization, system and public policy—because its leaders believe that efforts must be made at multiple levels to effect community change. Therefore, its activities include outreach and education, direct services, technical assistance to service providers, service coordination and collaboration across agencies, and efforts to influence state policies affecting children and their parents.

For many of CF's desired outcomes, different programs may operate on different levels.

For example, in attempting to improve health outcomes, the initiative works with parents, providers, systems and policymakers. The work with parents is intended to ensure that they will sign their children up for medical insurance, find a regular place to take their children for medical care, use primary care instead of hospital emergency services and work with physicians to manage chronic health conditions (such as asthma). In addition, by teaching a variety of parenting skills, including appropriate discipline practices, CF hopes to decrease child abuse and neglect. In its work with providers, CF, Inc., funds the New Jersey Chapter of the American Academy of Pediatrics to provide training to pediatric and family practices to improve preventive care, including increasing providers' knowledge of how to identify and prevent child abuse and encouraging them to conduct on-time lead screenings (due to old housing stock and impoverished families living in ill-maintained buildings, Trenton ranks high in the state in positive lead screens). CF, Inc., has also contracted with the Center for Health Care Strategies, a nonprofit that works with state-managed healthcare systems to improve clinical prenatal practices, and has collaborated with state policymakers and other nonprofits to draft legislation (which passed[5] in 2005) that ensures more continuous coverage for families enrolled in the state children's health insurance program.

Overview of Findings

At the end of the first five years, information about the potential for CF to improve childcare, healthcare and child outcomes is sparse but promising. Substantial gains in quality have been observed in childcare center classrooms and family childcare homes. In addition, implementation of several programs that have previous evidence of effectiveness with similar populations, such as the Nurse-Family Partnership, is strong. Although adverse birth outcomes in Trenton have remained stable or risen very slightly (reflecting a national trend), the evidence also suggests that the initiative may be attenuating some of the ill effects of key risk factors, such as having a medical problem like diabetes. It is too early to draw firm conclusions about these outcomes but there is reason for optimism. Finally, the initiative has developed a reputation for credibility, innovation and strength in New Jersey government, which has helped not only in efforts to raise funds to sustain activities but also in changing state policy to better support families. Few community-change initiatives can make such claims.

The fact that little can be said about the initiative's impact is not unusual for a community-change initiative. Compared with stand-alone programs, initiatives such as CF are relatively slow to establish themselves, and the likelihood of showing program effects in the early years (either positive or negative) is small. After inconclusive results from community-change initiatives in the 1990s, foundations increasingly turned away from the idea of broad community-change efforts and decided to focus on more narrowly defined initiatives (such as stand-alone programs) that had greater chances of success. At the same time, however, community-change

efforts funded by state and federal governments have become more common. Federal agencies such as the Administration for Children and Families, the Health Resources Service Administration, the Substance Abuse and Mental Health Services Administration and the Department of Education all provide funding to programs that emphasize the importance of interagency coordination and collaboration to increase the range, quality, efficiency and number of services available for local residents. The efforts, however, have only become slightly less challenging than earlier ones, and much remains to be discovered about how best to implement them.

Along with documenting progress on selected outcomes, this report demonstrates some of the challenges inherent in implementing community-change initiatives and offers recommendations (many that have been recommended before, but seldom well implemented) for addressing these challenges. The recommendations include better alignment of activities with desired outcomes, better identification and recruitment of the populations that most need the services offered, and the use of systematically collected and shared information on participation and outcomes to inform initiative management.

The Evaluation

In 2002, P/PV launched an evaluation of the first five years of CF designed primarily to provide information about the initiative's implementation and, secondarily, its progress toward its goals.

Developing the Evaluation Strategy

The evaluation faced a number of challenges common to community-change initiatives: The initiative focuses on an entire city, meaning that an experimental study, which has the best chance of establishing whether or not the initiative is effective, was not feasible. Randomly assigning entire cities or towns is a prohibitively expensive proposition. Communities also have many independent institutions that work to improve local conditions, and even if a random assignment study was undertaken, such communities might end up in the control group. Because community-change initiatives take so long to get off the ground, the chances that control group communities might initiate and operate efforts that are similar to the treatment communities are greater than they may be in experiments that randomly assign individuals, especially if communities are in the same state. Being in the same state would be an advantage in limiting treatment and control communities' differences, but it would also increase the potential for communication among communities, which could lead to common strategies.

Also, evaluating outcomes in the early years of community-change initiatives is risky. The chances are good that noticeable changes will not occur for several years. Any assessment of outcomes too early in an initiative poses a very real problem of interpretation: Was the lack of outcomes due to a failure of the initiative's design? Or was the assessment premature?

In addition, community initiatives are multifaceted, often with several activities that attempt to change the same outcome. The more potential ways there are of achieving desired goals, the more complex an evaluation design must be to disentangle the effects of the strategies used.

Many community-change evaluators use theory-driven approaches that describe the logic underlying the program developers' assumptions about why specific activities will lead to desired goals, the resources needed, and the nature and scope of the activities necessary to meet those goals. Evaluators then examine their data for evidence that the hypothesized associations between the initiative's activities and the participants' outcomes exist. To do this effectively, researchers need good descriptive data about what is happening in the initiative, strong implementation information (both qualitative and quantitative) and outcomes data for participants. Where possible, they use comparison information from other communities, but it is often lacking.

In addition, deciding which program activities to include in the evaluation is not always a straightforward task. For example, if a program was established before the initiative began and did not rely on initiative funds for core support (but did receive funds to supplement or expand services that support initiative goals), should all of the program's accomplishments be "counted toward" the initiative's outcomes? From a strategic point of view, one might say yes, the program is important to the initiative—and if it had not been in place, the

initiative might have had to fully fund it. From an outcomes perspective, however, one might say no: The program existed before the initiative began and its core activities were not funded by it; thus, its successes should not be included in an assessment of the initiative's outcomes.

Also, collecting comparable information from a range of agencies raises concerns about confidentiality (even when informed consent is obtained) and data consistency. In the community-based human services field, where the state of knowledge about how best to collect information for management and reporting purposes is still fairly young and a plethora of data collection systems have emerged, the challenges can seem insurmountable.

Research Questions and Strategies

To address the challenges inherent in evaluating community-change initiatives, the initiative's leaders, RWJF and the evaluation team made four key decisions that would influence the evaluation's design and, ultimately, its findings:

1. The evaluation would focus on implementation questions.

In response to the risk of evaluating too early, the evaluation would focus on implementation during CF's first five years and ask the following questions:

- To what degree was the initiative able to implement with fidelity program models with previous evidence of effectiveness?
- To what extent were community agencies and institutions able to work together to implement programs for Trenton's families?
- To what extent did community institutions and agencies make policy changes within their own organizations to facilitate collaborative efforts across agencies?
- To what extent did programs and agencies garner resources for CF efforts?

A fifth question—*To what extent was CF able to achieve desired outcomes?*—was also asked, but RWJF, the evaluation team and initiative leaders acknowledged that it was premature and, therefore, plans to collect data to examine CF's outcomes were, at least initially, relatively modest (they would be collected from agencies if they were available).

As the initiative progressed, however, questions about outcomes became increasingly urgent: RWJF and other funders were interested in gauging the initiative's potential to make real change. Community and agency leaders and the CF, Inc., board of directors also requested information. Thus, evaluation efforts were broadened to include more outcomes data.

In this report, we focus on program components that were implemented with sufficient quality to be expected to influence outcomes. Thus, the fifth question was narrowed to address, *To what extent were well-implemented programs in CF able to achieve their desired outcomes?*

2. The evaluation would consider efforts that targeted CF's goals to be part of the initiative, even if those efforts were paid for by other sources.

To capture activity related to very young children and their families across the community, we decided that the evaluation would include efforts that supported CF's goals whether they were either explicitly part of CF's strategy from the outset (even if CF funds did not pay for the activities) or were initiated after CF began.

3. The burden on agency personnel for data collection would be minimized.

A common complaint about social program evaluation is that data collection is burdensome to staff who have direct service responsibilities and already-full workloads. Data collection for evaluation purposes is often a low priority for staff who are required to compile reports for multiple funders or keep track of all their client information, including records of contacts and referrals. Recognizing these burdens and interested in fostering positive relationships with agencies, the CF, Inc., staff decided that agencies would collect no more data than they were already collecting, and they would do so in ways either dictated by their program models (e.g., the Nurse-Family Partnership and Healthy Families home-visiting programs) or their agencies. Staff across agencies believed that preexisting data collection efforts would be sufficient for the evaluation's purposes.

In retrospect, the decision to minimize staff burden by relying on existing systems was unfortunate. The systems agencies already had in place ranged from sophisticated to very basic. Few of the systems provided agency staff with the ability to readily provide information to a variety of funders, which proved onerous. For example, as part of its efforts, CF, Inc., used funds to leverage a Healthy Start grant from the federal government. Although preexisting systems tracked many of the required demographic, attendance and outcomes data, they did not collect all that was needed, nor did they enter it in all the required formats. In order to supply data for the grant, program staff had to periodically review all their paper files for the information and contact clients for additional information. The initial decision to minimize burden by not setting up a uniform data collection system across agencies did not, in fact, prove useful. Over time, it emerged that the agency staffs were very interested in a system that was easy to use and could provide them with the reports they needed for various funders.

4. The evaluation would rely on a theory of change and use readily available comparison data.

Given the challenges inherent in evaluating community-change initiatives, the evaluation relied on a "theory of change." A theory of change is a set of assumptions and hypotheses that explains why program operators think their activities will lead to improvements in individuals' lives. It also includes detailed information about the specific outcomes each activity is intended to produce. Although CF, Inc., did not create an explicit theory of change prior to implementation, there were some well-articulated assumptions about why certain actions were undertaken.

In brief, the theory assumed that if CF introduced or improved the quality of direct services with evidence of effectiveness and facilitated the access to—and use of—those services, child and family outcomes should improve. Achieving these broad goals would require identifying effective strategies and programs, ensuring staff have the qualifications and skills necessary to deliver them well, identifying the Trenton residents likely to benefit most from the services and ensuring they receive the services (or service improvements). Appendix A presents explicit theories of change for each of CF's three major goals in its first five years: improved birth outcomes; improved child health; and improved cognitive development.

For evaluation purposes, a theory of change is useful—though not definitive—in assessing an initiative's effectiveness. It provides researchers with a road map for linking program operations to program outcomes via client use of services. It is therefore useful in generating research hypotheses that can be tested using a variety of qualitative and quantitative research methods.

In addition to using a theory of change, the evaluation also relied on comparison data, including comparisons over time in Trenton and comparisons with cities that have similar economic and social conditions. Such comparisons permit researchers to examine the extent to which factors external to the initiative may have been responsible for any observed changes. More detail about the types of comparisons used can be found in the discussion of outcomes and in Appendices B, C and D.

Data Sources

Given the multifaceted efforts CF undertook, data for this report come from a variety of sources.

Home-visiting program participation and outcomes reports from the national offices of Healthy Families and Nurse-Family Partnership were used to describe the home-visiting clients and their outcomes. Additional information on home visiting came from the Trenton Division of Health, which gathered information for the federal Healthy Start grant.

Birth-data files from Trenton and several other New Jersey cities for 2001 through 2004 were downloaded from the New Jersey Center for Health Statistics' website to assess changes in birth outcomes over time.

P/PV staff conducted in-depth interviews during weeklong semiannual site visits to Trenton. During these visits, researchers spoke with staff from across agencies, including staff who provided CF's services (such as home visitors) as well as staff who benefited from CF's technical assistance efforts (such

as childcare center employees). These interviews provided information on program implementation, challenges and initiative collaborations.

Child Care Connection conducted annual childcare-center and family-childcare provider assessments using the Infant-Toddler Environment Rating Scale and the Family Day Care Rating Scale.[6] We relied on the scores from those assessments to gauge change in childcare environments.

P/PV staff conducted surveys of childcare center staff in 2004 and 2005 to collect information about their background, training and experience in childcare.

John Billings at the Robert F. Wagner Graduate School of Public Service at New York University collected emergency department data for 2002 through 2005 from Trenton area hospitals that serve city residents to assess the prevalence of preventable or avoidable emergency department visits by very young children. He also collected hospital admissions information from Trenton and comparable New Jersey and New York cities to assess changes in these types of admissions over time.

Additionally, CF, Inc., submitted financial audits provided by its key agency partners to assess resource development.

Structure of the Report

CF tries to change a small group of outcomes by working in several areas at once. As a result, the report could be structured by its discrete areas of work (e.g., parenting, childcare quality improvement and efforts to improve medical care) or by the initiative's progress overall. The former structure can give the reader a good sense of the work being undertaken, but it does so at the expense of acknowledging how interrelated the work is and the complexity of the initiative. We refer the reader to our previous report, *Collaboration and Community Change*, which follows this structure, to better understand discrete efforts. This report, instead, is intended to give the reader a sense of the initiative's overall progress in achieving its key benchmarks and outcomes.

Chapter II examines program implementation and participant outcomes. In this report, we narrow the focus of findings to CF's programs and activities that have shown substantial progress in implementation, assuming that if implementation has not achieved its objectives, participants are unlikely to show improved outcomes that could potentially be linked to the activities. Therefore, Chapter II examines the home-visiting, childcare and preventive medical care efforts that have taken place during the past several years. (*Collaboration and Community Change* describes the implementation challenges faced by the father-involvement efforts and projects to improve specific areas of prenatal healthcare in the city's hospitals and clinics.)

Chapter III uses community-level information to examine the potential impact of CF within Trenton. At the outset, we acknowledge that for a variety of reasons (including the availability of data) we see little change. However, the chapter also provides a useful case study of how to assess impact in a community-change initiative.

Chapter IV examines the initiative's progress, challenges and opportunities in raising money and effecting policy change to sustain its work.

Finally, Chapter V draws conclusions and discusses some of the changes CF is making in its final five years.

Programs: Implementation Efforts and Outcomes

Chapter II

The core of CF's efforts revolve around prenatal care and parenting education, childcare quality, and the quality of medical care. Within each of these components, CF created multiple implementation goals in an effort to establish practices and systems that could ultimately improve outcomes for young children in Trenton. It is important to note how well program implementation adhered to outlined standards. In this chapter, we review progress made toward these benchmarks in three areas of work: home visiting, childcare quality improvement and efforts to improve medical care.

In some, but not all, cases we are able to present information about outcomes for participants. In particular, outcomes for home-visiting programs (part of the parenting component) and childcare quality improvement efforts are reported. Relatively few outcomes are reported on efforts to improve preventive medical care, though program implementation was strong.

Timeframe for Major Components

CF's first phase ran from 2002 through 2006, but various components were initiated at different times between late 2002 and mid 2005. Figure 1 provides a timeline for major activities. More detail on the programs listed in this figure is provided later in the chapter.

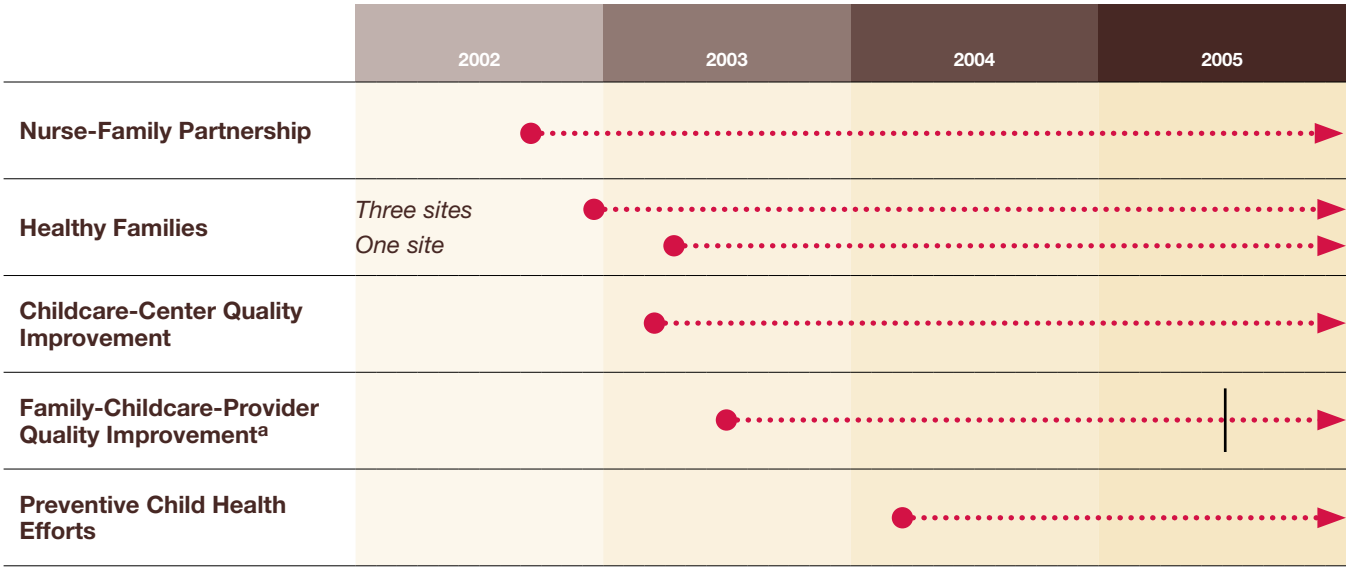
Home-Visiting Programs

Three major efforts got underway early in the initiative: home visiting, center-based parent-child development activities, and efforts to improve women's access to behavioral health services. We focus on home visiting in this report. An earlier report, *Collaboration and Community Change*, discusses center-based activities and behavioral health services, which experienced significant implementation challenges.

Screening and Enrollment

In working toward its goals to reduce adverse birth outcomes and increase children's well-being, CF screens Trenton's mothers-to-be to assess their

Figure 1
Timeline for Major CF Activities



[a] The line in mid-2005 indicates that although the family childcare provider quality improvement effort began in 2003, the agency leading it made major modifications to address challenges in 2005.

psychosocial and economic status. In doing so, CF hopes to identify women in five groups who may benefit from home visiting: adolescents; first-time mothers; women with cultural, language and/or other barriers; women with substance abuse problems; and women with depression and/or mental health disorders.

The vast majority of the screenings are conducted by staff in the four prenatal clinics that serve Trenton's mothers, though a few are conducted by the home-visiting program staff. There are two steps to the screening process: the first, called the Home Visiting Screen, is a relatively quick assessment conducted primarily in prenatal clinics. To create the assessment, CF modified the Healthy Families screen by adding a few additional elements (such as being a foreign-born or first-time mother) to a series of check boxes about potential social and medical risk factors (such as diabetes). They also added the *4 P's Plus© screen,*[7] which is designed to flag women who may be at risk for depression, domestic violence or substance abuse. Criteria for a positive prenatal screen include being single, having two or more social risk factors and having incomplete information. Ninety-two percent of screened Trenton women have positive results.

CF began this screening process at the end of 2002; in 2006, approximately 50 percent of all pregnant women in Trenton were screened (about 750 of the 1,500 women who gave birth each year). Planners had intended to screen all women, but the initiative has not yet succeeded in getting private physicians, who see about one third of all pregnant women in Trenton, to screen their patients. As a result, the initiative is unlikely to achieve its 100 percent goal, though there is still room for improvement.

All screens are sent to Central Intake, housed in the Trenton Division of Health, and the positive screens are then distributed among the home-visiting programs (Nurse-Family Partnership, Healthy Families and a small public health nurse program designed to serve women who have high medical risks). Staff from these programs then conduct more comprehensive assessments to determine whether the program may be helpful.

If the mother-to-be is a first-time mother or an adolescent, she is referred to Nurse-Family Partnership, one of the home-visiting programs. A nurse visits these mothers at home to gauge their level of risk and willingness to participate in the program.

Every fifth mother is sent to a citywide Healthy Families home-visiting program. The rest are either referred to a Healthy Families program in the area of the city in which they live or to the public health nurses (if they have a significant medical risk).

Of the mothers who are initially assessed, approximately one third are enrolled in one of the programs.

The initiative's goals for the home-visiting programs are to reduce the incidence of child abuse, increase parenting skills and help women have healthier pregnancies and better birth outcomes. Therefore, CF set out to enroll women who might benefit most from home visiting: Eighteen percent of women enrolled in CF home visiting during 2006 were adolescents. Thirty-three percent of enrolled women were Hispanic. Because the majority of Trenton's adult Hispanic population is foreign-born[8], many people struggle with language and cultural barriers as they navigate the American healthcare system. Finally, a small sample of enrolled mothers had histories of substance abuse (8 percent), psychiatric care (7 percent) or depression in previous pregnancies (10 percent).

Women were enrolled in one of three programs. Although all three programs have similar goals, they differ in several important ways. Two models, Healthy Families and Nurse-Family Partnership, were selected in part because they complement each other well. Healthy Families uses paraprofessionals to serve mothers and families for three to five years after the birth of a child. Women are recruited up through the first two weeks of their babies' lives, and they may enroll even if they have had previous children. In using paraprofessionals, Healthy Families assumes that providers who may share background characteristics and come from the same community will be more likely to relate to mothers.

Nurse-Family Partnership, in contrast, uses registered nurses to serve first-time, low-income women from pregnancy through a child's first two years. Women are recruited up until their 28th week of

pregnancy. The model assumes that the credibility nurses bring to the program will help facilitate a trusting relationship. Additionally, a study conducted by Nurse-Family Partnership found that using paraprofessionals to deliver the model did not produce the same positive outcomes as when the program was delivered by registered nurses.[9]

In Trenton, a single Healthy Families program serving approximately 60 women existed before the start of the initiative; it operated with a staff of four family support workers and a social worker who supervised them. Four additional programs were added—one in each of the four parent-child centers—when the initiative began. These five programs have the capacity to serve approximately 300 women, depending on how often women should be visited, which itself depends on how long women have been in the program and the home visitor's assessment of their needs.

Nurse-Family Partnership was added to CF when the Division of Health won a grant to fund program expenses. The third home-visiting program, run by the Division of Health, serves high-risk women with serious health or other needs who are ineligible for Healthy Families or the Nurse-Family Partnership.

Home-Visiting Participants

Overall, the home-visiting programs served at least 16 percent of the mothers who gave birth in Trenton between the last quarter of 2002 and December 2006. Compared with city residents who gave birth overall, mothers in the home-visiting

Table 1
Characteristics of Women in the Home-Visiting Programs

	Nurse-Family Partnership	Healthy Families	City of Trenton
Number of mothers (2002-2004)	246	690	6,000[a]
Number of mothers in data sample	246	560	6,000[a]
Median age	19 years	24.5 years	25 years
Completed high school	50%	55%	Not available
Single	97%	81%	71%
Percent of mothers at or below poverty line	97%	97%	Not available
Race/ethnicity			
Hispanic	17%	46%	35%
African American (Black/Non-Hispanic)	65%	46%	52%
White (Non-Hispanic)	6%	5%	11%
Other (Native American, Multiracial, Asian, Other)	12%	4%	1%
Average number of months enrolled	15.4	14.6	—

Sources: Year 4 Evaluation report for Nurse-Family Partnership Trenton; Trenton Division of Health, home-visiting data; Trenton Healthy Families data; New Jersey Center for Health Statistics.

a No information is available on the unduplicated number of women who gave birth between January 2003 and December 2006. The estimate provided is high because some mothers gave birth to more than one child during that period.

programs tended to be somewhat more disadvantaged (see Table 1). They were more likely to be single, and almost all had incomes at or below the official poverty line. In addition, as discussed in *Collaboration and Community Change*, they were more likely to have a combination of factors, including medical risks, that put them at risk of having preterm and low-birth-weight infants. On the other hand, they were not necessarily more likely to come from a higher-risk racial/ethnic group or to be younger than the average Trenton mother.

Home-Visiting Programs Made Progress Toward Benchmarks

The home-visiting programs have a number of operational and participant benchmarks against which they measure their progress. Some were shared across programs and were either defined by the national program or by CF; others were particular to specific program models.

Overall, the two major home-visiting programs showed considerable operational strength. They recruited mothers with the desired characteristics (first-time mothers in Nurse-Family Partnership, and mothers with moderate risks for child abuse and neglect in Healthy Families). They also completed the majority (approximately three quarters) of the expected home visits with enrolled mothers, with rates rising slightly during the course of the initiative. Completion rates were high even for mothers with intensive visitation schedules—those that called for four visits a month.

The one area where both programs struggled was participant retention. At the end of their child's first year, about 60 percent (58 percent in Healthy Families and 65 percent in Nurse-Family Partnership) of the mothers remained in the program. By their child's second birthday, those figures had dropped to 41 and 35 percent respectively. For Healthy Families, Trenton retention rates compare favorably to a 2004 implementation study undertaken by Prevent Child Abuse America, in which 31 percent of mothers remained in the program for at least two years.

One might argue that enrolling mothers as early as possible could improve retention. Nurse-Family Partnership requires women to enroll by the end of their second trimester; Healthy Families allows mothers to enroll until two weeks after the baby is born. An analysis of factors related to retention in the Trenton Healthy Families program found that for every week later in her pregnancy a mother enrolled, her time in the program dropped by four to seven days. Thus, a woman who enrolled when she was 25 weeks pregnant would, on average, remain in the program about two to four months longer than a woman who enrolled when her baby was two weeks old. This suggests that the program should aim to enroll as many women as possible relatively early in their pregnancy.

On the other hand, making early enrollment a requirement, as Nurse-Family Partnership does, would defeat some of the purpose of having complementary programs, one of which offers more flexibility than the other. Also, given the fact that CF recruits women from the prenatal clinics and women at higher risk may not come to the clinics until relatively late in their pregnancy, such a strategy would preclude providing services to them. Thus, trade-offs need to be made between targeting women more likely to stay in the program over time and those who might have the greatest need (but perhaps not the greatest motivation) for services. Similar uncomfortable realities face many social programs, and research has not yet provided good answers about how to address them.

Outcomes for Children and Mothers Participating in Home-Visiting Programs

The programs collect data on various client outcomes. At this point, outcomes information for the children is incomplete given their young age, but information on preterm births, mothers' use of birth control after their baby's birth, on-time immunizations and children's connection to a regular source of medical care is presented in Table 2 on the next page.

Overall, the outcomes for children whose mothers participated in the two major home-visiting models are good. The percent of preterm births is lower among participants than Trenton women overall: The average preterm birth rate for 2000–2002 was 12.7 percent, while rates for CF home-visiting participants ranged from 9.2 to 10.2 percent.

Table 2
Health Outcomes for Families Involved in Home Visiting

	Healthy Families[a]	Nurse-Family Partnership[b]
Preterm births	10.2%	9.2%
Mothers using birth control 6 months after baby's birth vs. percent using birth control prior to baby's conception	51% vs. 23%[c]	Not available
Children with on-time immunizations	85%	68-100%[d]
Children connected to a regular source of medical care	90%	Not available

a Source: Analysis of Trenton Healthy Families data conducted by Healthy Families America, based only on mothers enrolled prior to baby's birth.

b Source: Fourth-year evaluation report for Trenton Nurse-Family Partnership, completed by the Nurse-Family Partnership National Office in Denver, CO. In some cases, data available for Healthy Families were not available in the Nurse-Family Partnership report.

c We used the six-month benchmark because retention rates were still relatively high (72 percent of mothers who ever enrolled were still enrolled at six months), giving us a better representation of all mothers who ever enrolled than we would have seen with a more aggressive benchmark, e.g., mothers enrolled for two years.

d Nurse-Family Partnership calculates immunization rates by specific immunization, which leads to a range. One hundred percent of Nurse-Family Partnership infants were up to date on their polio and MMR vaccines; 92 percent had received their hepatitis B vaccines; 84 percent had received their DTP/DTaP vaccines; and 68 percent had received their HIB vaccines.

Efforts to Improve Childcare[10]

Goals for improving the quality of childcare in Trenton are focused on two areas: creating centers with safe and healthy developmental environments for children, and improving staff training and knowledge. Child Care Connection (CCC), the local childcare resource and referral agency, led the quality improvement effort for both the city's licensed childcare centers and for smaller home-based family childcare settings. Because family and center-based settings place different demands on caregivers, CCC developed two distinct strategies for quality improvement.

At the beginning of the initiative, CCC was working with 7 of Trenton's 14 licensed childcare centers—these 7 centers served the vast majority of the Trenton infants and toddlers who attended childcare centers in the city at the time. Using the widely accepted Infant Toddler Environmental Rating Scale-Revised (ITERS-R)[11], a seven-point scale, CCC rated the environment of 20 classrooms in these seven centers. When this occurred in Spring 2003, none of the 20 classrooms received a "good" rating and half failed to meet even minimal standards of care. The average total score across all centers was below minimum standards. These assessments showed problems ranging from hygiene and safety to staff-child interactions (see Table 3 on the next page).

Among the family childcare homes, CCC developed a network with approximately 20 of the city's 90 providers—importantly, many of the providers work with children whose parents are involved with the city's Department of Family Services. When CCC assessed these homes at baseline, they also found problems with the quality of care, particularly in the failure of family childcare providers to offer stimulating and age-appropriate developmental care.

Raising Standards of Care in Childcare Centers

CCC gave providers in childcare centers individual training and support to implement a quality improvement plan. Periodic technical assistance visits were made to centers to assess classroom environments through the ITERS-R and identify practices that needed improvement. In addition, at the beginning of the initiative, key staff at each center, including the director, participated in the High Scope Infant Toddler Curriculum[12], which includes significant

Table 3
Progress Made in Quality of Care in CF Childcare Centers

CF Childcare Centers	2003	2006	Point Change
Space and furnishings	2.54	4.77	2.2
Personal care	2.48	4.38	1.9
Listening and talking	2.66	5.36	2.7
Activities	2.63	4.53	1.9
Interaction	3.59	5.80	2.2
Program structure	2.69	4.27	1.6
Parents and staff	3.38	5.14	1.8
Overall Score	**2.86**	**4.86**	**2.0**

Note: Ratings are based on the ITERS-R, a 7-point scale, where a score of 1 indicates inadequate care, 3 indicates that minimal standards of care are being met, 5 indicates good care, and 7 indicates an excellent level of care.

training in early education. CCC also provided incentives in the form of classroom equipment or supplies for centers that participated in the initiative.

After administering the ITERS-R, CCC worked with each center to develop a quality improvement plan. In Fall 2006, five centers were working with CCC to improve their quality of care. Of these, four had been involved with CCC since the beginning of the initiative; the other center began working with CCC in Spring 2005. All five of these centers have made large improvements in their initial ITERS-R scores; three centers have achieved a score of "good" (5–6 points), and a fourth is close to doing so. The fifth center has met minimal standards: While it still needs to improve by 1.5 points to achieve a "good" level, this center had the lowest initial score among the centers when it was first assessed in 2003 and has made gains equal to the other centers involved since that time.

In the three years these centers have worked with CCC, they have improved in all areas of quality care, including hygiene, age-appropriate techniques for play and discipline, increased interaction and communication with children, and improved staff teamwork. Table 3 presents the change in the average ITERS-R scores for Trenton infant and toddler classrooms that have partnered with CCC between 2003 and 2006. Overall, the classrooms have increased their scores from below minimal standards in 2003 by two points, to an overall average of 4.86 on the ITERS-R. The largest increase was seen on the "listening and talking" component, which assesses how well staff help children understand and use language as well as the staff's use of books in the classroom. The classrooms increased by 2.7 points on this component between 2003 and 2006—achieving a "good" rating.

All five centers currently participating have reached "good" levels of care on the interaction subscale, indicating not only that staff and youth are interacting well but also that young children are properly supervised and disciplined and are relating appropriately to their peers. The four centers that have reached "good" levels of care on the staff teamwork subscale have seen even greater improvements.

Improvements also occurred at the three centers that eventually left the program, but they still tended to score lower on all measures of care than the five centers that remained. At the initial assessment, all seven classrooms in two of these centers failed to meet minimal standards of care; by the time they left the program, all but two classrooms met minimal standards. All three centers eventually closed their doors, which is a testament to the fragile financial conditions of childcare centers serving low-income populations with inadequate subsidies.

In addition to this progress, and despite continued low wages, the centers also made progress in improving staff quality. Compared with 2004, more staff in 2005 reported previous experience in childcare or elementary education (50 percent versus 67 percent). Staff's training level also increased between the two years, primarily in areas relating to child physical health and safety, preventing violence and improving communications and relationships.

The CF center improvements suggest that even in cases where resources are very limited, significant improvements can be made to childcare. (State subsidies and parental contributions for care at the centers equal about 39 percent of the market

rate for high-quality infant–toddler care.[13]) Also, in 2004, only 11 percent of childcare workers in the CF infant–toddler classrooms earned more than $20,000 a year (42 percent received less than $10,000; another 47 percent earned between $10,001 and $20,000). Therefore, though increased salaries for childcare workers might be appropriate given their very low wages and the nature of their responsibilities, it is possible to make significant improvements without improved salaries.

Raising Standards of Care in Family Childcare Homes

As with the childcare centers, CCC gave the family childcare providers individual training and support as they followed quality improvement plans. Providers received biweekly technical assistance visits and were encouraged to participate in CCC's regular training programs, for which fees were waived. These programs included evening workshops, Child Development Associate Credential (CDA)[14] classes and monthly Saturday morning classes that specifically targeted family childcare issues. CCC also brought them together as a group for formal trainings, where they covered issues suggested by the providers and participated in a supervised, self-instructional training that mirrored the content of the CDA classes.

CCC staff made an average of 1.6 visits per month to the family childcare providers between July 1 and December 31, 2006. Technical assistance focused on topics such as literacy enhancement, art, room arrangement and business practices. In addition to the visits, 15 providers attended a total of 115.5 hours of training, and several were working toward completion of the CDA, though none ultimately achieved it.

By January 2007, the Family Day Care Rating Scale (FDCRS) assessment was conducted on 17 of the 18 providers. One of these 17 programs was assessed for the first time during this period, so we can only look at changes for 16 programs. Of those16, 14 posted score increases, with 11 of those 14 scoring at least a one-point increase (on a seven-point rating scale very similar to the ITERS-R). Most providers posted score increases along all subscales. The two providers whose scores did not increase showed minor decreases of 0.3. Overall program scores for the group indicated that three providers were in the "very good to excellent" range; eight providers were in the "good to very good" range; and seven providers were in the "minimal to good" range. Two of the three providers in the "very good to excellent" range initially only met minimal standards. Three of the eight providers moved from below minimal standards (under 3) to good to very good (5 to 6), and three providers moved from below minimal standards to the minimal to good range.

CF has made progress in improving the quality of childcare in Trenton. Both center and family-based providers have found the initiative helpful in critical areas, particularly in their understanding of child development. In childcare centers, much room remains for further staff development, and staff turnover remains troublingly high. However, CCC has had great success in forming relationships with people and organizations that are open to changing and improving childcare in Trenton.

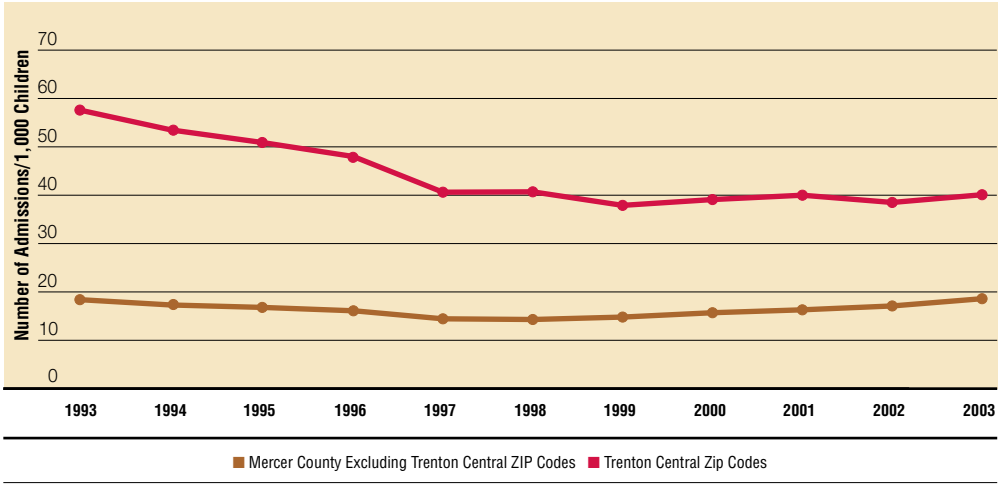
Efforts to Improve Medical Care

Trenton residents have multiple options for getting medical care: There are three hospitals, a city health clinic and a federally qualified health center in the city; a fourth hospital is located in a nearby suburb and also serves city residents. Despite the easy availability of healthcare services, health outcomes for Trenton's population are significantly worse than those of residents in the county overall. Figures 2 and 3 on the next page compare rates of ambulatory care sensitive (ACS) admissions per 1,000 children (from birth to four years) for Trenton central ZIP codes with the other Mercer County ZIP codes.[15] Both asthma and other types of admissions among small children are significantly higher in most Trenton central ZIP codes. As of 2003, the three-year average for nonasthma ACS admissions among small children in Trenton was 40.1 per 1,000 admissions, compared with 18.6 for the rest of Mercer County. The difference in asthma admissions was also large: 9.8 per 1,000, compared with 3.4.

In addition to high hospitalization rates, city health employees reported in interviews early in the initiative that Trenton ranks high in the state in terms of lead poisoning and low with respect to immunization rates among children. Preventable emergency department visits are also high: A total of 72.5

Figure 2

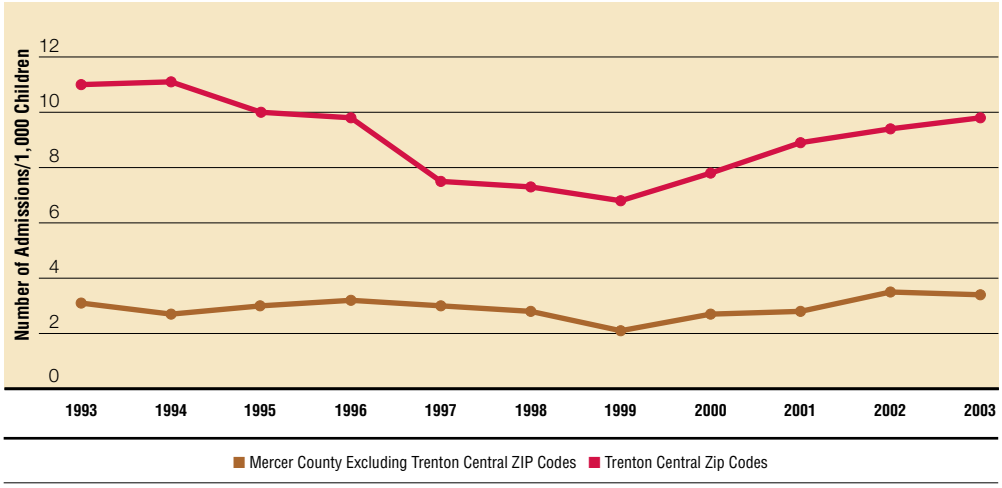
Number of Ambulatory Care Sensitive Admissions (Excluding Asthma Admissions) per 1,000 Children, Zero to Four Years: Trenton Central Versus All Other Mercer County ZIP Codes



Note: Three-year running averages are presented in order to smooth out annual fluctuations.

Figure 3

Number of Asthma Admissions per 1,000 Children, Zero to Four Years: Trenton Central Versus All Other Mercer County ZIP Codes



Note: Three-year running averages are presented in order to smooth out annual fluctuations.

percent or more of all emergency department visits among children birth to age four are preventable or avoidable.

Because good medical management requires that both the provider—physician or clinic—and parent work together, CF employs a multidimensional approach to achieve desired outcomes. In addition to the efforts home-visiting programs undertook to improve children's health by working with parents, efforts were also made to improve preventive practice with respect to on-time immunizations, improved lead screening rates, and improved child abuse prevention and identification. In 2006, the New Jersey Chapter of the American Academy of Pediatrics (NJAAP) also began efforts to improve asthma management.

These efforts consisted of conducting on-site training in practices' offices in order to involve all staff (including receptionists and office staff). The NJAAP staff also completed follow-up visits to answer questions, address problems and check for changes in practices.

Up-to-Date Immunizations

In its immunization efforts, the NJAAP attempted to get medical practitioners to use the New Jersey Immunization Information System (NJIIS), which was initiated in 2002 to ensure that children's immunization records could be accessed by physicians who may not have previously seen them. In its early years, however, the NJIIS lacked clear rules for use and enforcement, and many physicians were slow to use it.

By the end of 2005, 7 of the 11 participating practices in the NJAAP effort were using the system. An additional two practices, described as being run by "tech-savvy doctors," had plans to submit their patient immunization records once the state issued clear rules for electronic data submissions. The remaining two practices reportedly lacked technology capable of transmitting the information. By the end of 2006, however, all 11 practices participated in the NJIIS.

Lead-Poisoning Screenings

The pediatric and family practices involved in the training ran the gamut from a pediatric clinic in a local hospital run by a nurse practitioner to one-physician practices. Their resources varied considerably. In their efforts to encourage lead-poisoning screening, NJAAP trainers faced a variety of circumstances and showed much flexibility in addressing them. According to NJAAP staff, they saw the following changes in the practices:

- Lead Risk Assessment forms are now being included on prepped charts for appropriate well-child visits in all 11 practices. Practices using electronic medical records (EMRs) are adding lead assessment prompts to their templates.
- Four practices are now using filter-paper testing in their offices to test children for lead poisoning because their patients were previously given lab referrals for blood lead tests but often did not follow up to get blood drawn.
- Several practices that still choose to refer patients to labs are now routinely giving prescriptions for lead screening to all patients one to two years old. In one practice, all children at nine months are given lab slips for a blood lead test. If a lab report is not received by the child's first birthday, the child is given a filter-paper screening test in the office.
- One practice now draws blood in the office rather than referring to a lab, circumventing the problem of poor follow-up.
- Two of the 11 practices have not made changes: One practice was already drawing blood in-house, and one clinic was already sending lead screening tests to the state lab.

Unfortunately, consistent information on screening rates is unavailable. However, given changes in how practices conduct their screenings, it is very likely rates have risen in the nine practices that made such changes.

Conclusion

CF's implementation efforts have succeeded in meeting a number of the benchmarks the initiative set for itself. There is good participation across programs that serve families directly, and technical assistance efforts have led to measurable differences in the quality of services provided.

Home-visiting programs met many of their operational benchmarks during their first five years of operation. Data indicate that both Healthy Families and Nurse-Family Partnership recruited mothers with the desired characteristics, and they completed about three quarters of the target number of home visits. Although both programs had problems with retention, outcomes for enrolled mothers are promising. Only 10 percent had preterm births, and a large majority of babies born to mothers in both programs had their immunizations completed on time during their first two years.

The quality of childcare has improved significantly in the city, even though the financial resources available to centers and providers continue to be low. At the start of CF in 2003, the CCC was working with seven childcare centers, none of which received a "good" environment rating on the ITERS-R. By the fall of 2006, however, the five centers that remained in the initiative showed substantial improvements in all areas of childcare, including personal care, activities and interaction. Staff quality also improved, in terms of both level of training and educational background. CCC also worked to improve home family childcare through a number of efforts that included technical assistance and training for workers in addition to on-site visits. By January 2007, 14 of the 17 centers that were evaluated achieved overall increases in the FDCRS, and most achieved increases in subscales as well.

Finally, CF aimed to improve the quality of medical care provided to infants—specifically, to improve preventive practices such as on-time immunizations and lead screening. In terms of immunization, the NJAAP encouraged practices to use the state immunization registry so physicians could have access to information about infants' previous immunizations. By the end of 2006, the 11 practices involved in the effort (out of the 13 serving Trenton's families) were doing so. In addition, nine had changed their procedures for how they screened children for lead poisoning to increase their screening rates.

Overall then, we have seen a number of notable improvements in these three areas since CF's inception in 2003, both in terms of operational benchmarks and, based on the limited data that is available at this point, desired outcomes for participants. The extent to which the outcomes presented in this chapter can be attributed to CF's efforts varies considerably. Among home-visiting clients, our information does not allow us to determine conclusively whether good outcomes result from CF's efforts or from existing characteristics of mothers who enroll in home visiting. The good outcomes for childcare centers are extensive and persistent. They are very closely aligned with the initiative's activities, and competing explanations for them do not exist, which strongly suggests that they are due to CF's efforts and not other causes.

Early Outcomes for Trenton's Children and Families

Chapter III

In Chapter II, we examined specific reasons CF undertook some of its major efforts and the progress made on programmatic outcomes, such as initiating and improving services and attracting and retaining participants. We also examined outcomes for participants—mothers, childcare providers and medical practices—in CF's various components.

This chapter takes a broader look at outcomes for Trenton's young children and families. Achieving positive outcomes on a community level is much more challenging than achieving them for program participants; not only must programs be implemented well, but the initiative must reach sufficient numbers of community residents for whom the programs are effective in order to detect change.

We use comparisons both over time and across cities to test our hypotheses about the initiative's effectiveness. The analyses suggest that there are some changes to prenatal and birth outcomes that are consonant with the hypothesis that CF is affecting outcomes for specific groups of women.

Prenatal Care and Birth Outcomes

Trenton agencies involved in the initiative's planning phase identified two city-level benchmarks regarding prenatal care. First, they wanted to reduce the percentage of Trenton mothers who receive no prenatal care by 4 percent. Second, they aimed to increase the percentage of Trenton mothers who begin prenatal care during the first trimester by 20 percent. More concretely, 2.8 percent of mothers had no prenatal care in 2001, and 64.5 percent of mothers began care in the first trimester. The desired changes would have led to rates of 1.7 percent and 77.4 percent, respectively. In addition, the initiative set a goal that women would complete at least eight prenatal visits.

CF was unlikely to meet the first two benchmarks: Ninety-seven percent of the mothers who participated in home-visiting programs in 2003–04 were referred through prenatal clinics; as a result, CF could not have an effect on when they started prenatal care. However, we did expect to see a slight improvement in the number of prenatal visits among Trenton mothers relative to other cities, because CF had the potential to influence prenatal care once these women entered the program (although that also depended on when in their pregnancy they enrolled).

Although CF may have affected the number of prenatal visits women completed, the state of New Jersey has only made birth statistics for the city of Trenton available through 2004.[16] Given the relatively immature stage of the initiative in that year, we did not expect to see much change in birth outcomes.[17] However, the data presented in this chapter demonstrate how theories of change and cross-city comparisons can be used in evaluating community-change initiatives.

In particular, we examine the following assumption about Trenton women's use of prenatal care and birth outcomes: Earlier use of prenatal care (first trimester) and better adherence to prenatal visits would result in fewer adverse birth outcomes because women would receive medical care to identify any problems that put them at risk. In addition, women would better care for themselves during their pregnancies.

In this chapter, we test this assumption by asking the following questions:

1. Did first trimester prenatal care use increase in Trenton?
2. Did the incidence of no prenatal care decrease among Trenton's mothers?
3. Did the number of prenatal care visits rise?
4. Did preterm births decrease?
5. Were there any relationships between mothers with profiles that put them at risk of preterm births and birth trends?

Ascribing Causality When Experimentation Is Not Feasible

This report's introduction discussed the challenges inherent in evaluating community-change initiatives, including those related to using experimental

methods. In this chapter, we use a mix of statistical methods, cross-city comparisons and trends over time to examine CF's potential for the city.

There are several approaches to addressing the research questions posed in this chapter. The most obvious would be to examine trends over time in Trenton to address the first four questions and then use the data to examine the fifth question using statistical techniques. The problem with such an approach, however, is that communities are dynamic: Populations change over time, and different populations are more or less susceptible to particular types of outcomes. For example, African American women are more likely than Hispanic women to enter prenatal care late and have preterm births.[18]

When programs set benchmarks, they do so based on the assumption that the characteristics of the population served will remain stable—an assumption that often turns out to be false. Given the shifts in Trenton's population we knew about (and those we may not have known about), we needed to account for the possibility of change. Otherwise, we might link observed differences to CF's efforts when, in reality, they could be related to population changes.

It is not enough, however, to account for simple population shifts over time when examining social trends. Because cities are embedded in states and countries, policy changes that occur at those levels may also affect local conditions. For example, substantial decreases in hospitalization rates occurred in cities across the country during the 1990s. When observed across cities, such reductions suggest that one must be careful in attributing a single city's changes to a specific program within that city. Cross-city comparisons are useful in avoiding errors in causal attribution when experimental methods are not feasible and broad social policies at the state or national level may have contributed to changes.

To reduce our chances of suggesting that CF was responsible for changes when, in fact, other dynamics may have been, our analyses took population changes into consideration and used cross-city comparisons in trends over time to test CF's theory of change. This approach does not provide the degree of certainty about CF's benefits that an experiment would, but it does offer some idea of the initiative's potential benefits.

A cluster analysis of several New Jersey cities—Camden, Newark, Elizabeth and Paterson—suggested that Camden and Newark were appropriate comparison cities based on their combination of various social and economic indicators, including race, ethnicity, employment and income. Although we knew Camden had a federal Healthy Start grant (and was therefore working on the kinds of efforts Trenton's CF was), we also knew that the scope of the effort did not match Trenton's. It did, however, have an element that was absent in Trenton: Camden Healthy Start included an outreach effort designed explicitly to increase prenatal care use. Newark, our other comparison city, was not engaged in similar efforts. In our analysis, we reasoned that if we tested the assumptions about CF mentioned above by comparing Trenton with the other cities and taking population changes into account, we would be in a better position to assess CF's potential benefits.

The cross-city comparisons in trends presented below for birth outcomes include statistical adjustments to account for population changes in the cities. Data for the analyses come from three sources: The New Jersey Center for Health Statistics provided the prenatal care, birth and hospital discharge data; the State of New York provided hospital discharge data for selected cities; and Trenton area hospitals provided emergency department data. The birth data include information on Newark and Camden. Data on hospitalizations include Newark and Camden and similar cities in New York State. (See Appendix D for a more detailed accounting of the methods we used in this analysis.)

First Trimester Prenatal Care Use

Figure 4 on the next page presents the odds that a mother will begin prenatal care during her first trimester in Trenton compared with Newark and Camden for 2002 through 2004 (one year before the initiative got off the ground and two years after). Any point on the graph above one indicates that the odds of beginning prenatal care in the first trimester were higher in Trenton than in the other cities; any point below one means they were lower. The most important comparison, however, is the

direction of the trend over time, which indicates that women in Trenton were becoming less likely to start prenatal care in the first trimester compared with the other cities.

This is not what one would expect to see if CF were affecting prenatal care use (it is very unlikely that CF is *negatively* affecting prenatal care use). In 2002, the year before the initiative began operations in earnest, Trenton women were 1.48 times more likely to begin prenatal care in their first trimester (accounting for population differences) than similar women in Camden and Newark. However, in 2004, Trenton women were only 1.28 times more likely to begin prenatal care in their first trimester.

Although not reflective of CF's goals to raise the proportion of women beginning prenatal care in their first trimester, this finding does reflect the initiative's recruitment methods. Instead of using outreach or other efforts to identify pregnant women in their first trimester and get them into the clinics, CF recruited women from the clinics. Thus, even though the initiative had hoped to raise the rate of women entering prenatal care in their first trimester, its efforts were not designed to do so. Furthermore, Trenton's diminishing advantage over Newark and Camden is driven largely by positive changes in Camden (as opposed to decreases in early prenatal care in Trenton or in changes in both Camden and Newark), where the Healthy Start Grant has been used to support outreach workers to get women into prenatal care.[19]

Odds of Having No Prenatal Care

The odds of not receiving prenatal care in Trenton, after adjusting for changes in the population of all three cities, are approximately 66 percent of those of women in the other cities. In other words, for every 100 women in the other cities who do not receive prenatal care, only 66 women in Trenton receive no care. We have no evidence that CF has any effect on women who do not receive prenatal care, which is, as in the case of trimester entry into care, not surprising given the recruitment strategies.

Figure 4
Trends in the Odds of Beginning Prenatal Care in the First Trimester in Trenton, Compared with Children in Newark and Camden

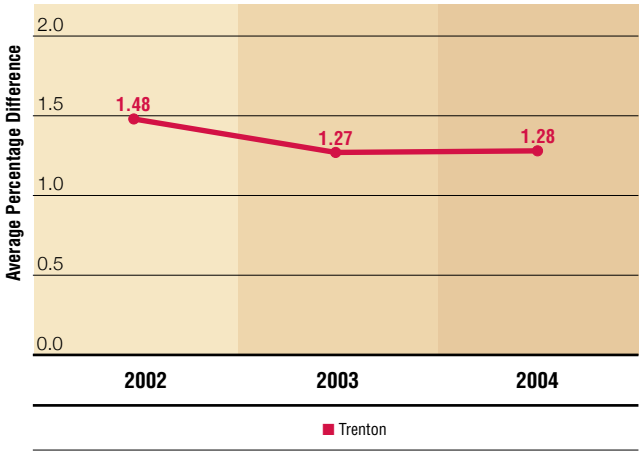


Figure 5
Trends in the Odds of Having No Prenatal Care in Trenton Compared with Newark and Camden

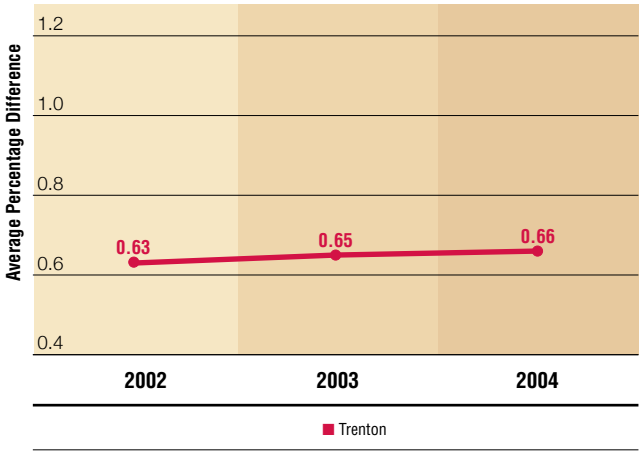
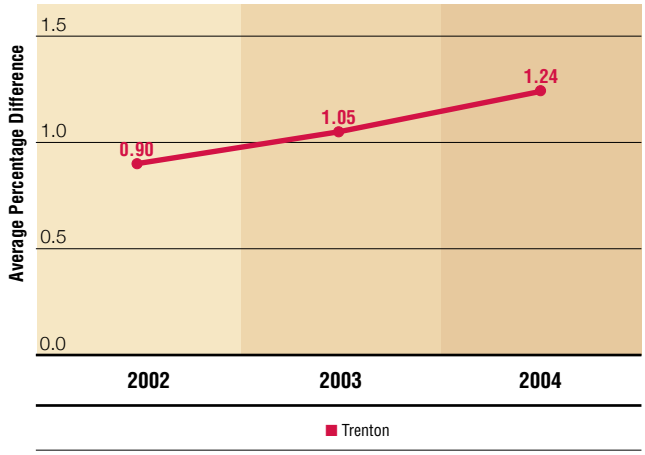


Figure 6
Trends in the Odds of Having a Preterm Birth in Trenton Compared with Newark and Camden Using Risk Levels



Number of Prenatal Visits
Just as we saw no significant difference in whether or not Trenton residents were more likely to lack prenatal care altogether compared with the other cities over time, we saw no difference in the number of prenatal visits women made over time. However, as we see later in this chapter, one specific group of women in Trenton was more likely to go to scheduled prenatal appointments compared with similar women in Newark and Camden.

Odds of Preterm Births
As Figure 6 demonstrates, the odds of having a preterm birth in Trenton compared with the odds in Newark or Camden actually rose during CF's first two years. In 2002, Trenton women were 10 percent less likely to have a preterm birth than women in Newark and Camden. In 2004, they were 24 percent more likely to have a preterm birth.

Further analyses (see Appendix C) suggested why this might be happening. First, Trenton's negative showing appears to be an artifact of the comparison with Camden. Over several years, Camden's preterm birth rates improved, dropping almost two percentage points. Even when accounting for differences in populations, however, the odds of having a preterm birth were lower in Camden than in Trenton. Healthy Start in Camden, while less extensive than CF, may be positively affecting birth outcomes in that city.

Relationships Between Mothers with High-Risk Profiles and Birth Trends
Given the analyses above, we have no evidence that CF is effective. However, as we noted earlier, this report examines only the first two years of the initiative for which city-level data are available, and trends may not become evident for several years. When presenting information such as birth trends, researchers often use "three-year running averages" to flatten out random fluctuations and get a clearer picture of patterns and trends. This report does not take advantage of the strategy because we do not have data on enough years to do so.

Because CF will continue to operate for at least the next five years, however, it makes sense to ask whether the birth data can provide information about strategies that should be used moving forward. One strategy has already emerged: Increase outreach efforts to bring women into prenatal care earlier. In the following section, we examine the relationships between mothers' characteristics and birth outcomes to see if there may be other maternal factors that suggest options for intervention.

Several maternal characteristics (demographic, medical and social) are related to the number of prenatal visits in Trenton: Mothers with one or more medical risks, adolescent mothers, African American mothers and single mothers complete slightly fewer prenatal visits than their counterparts. For mothers with medical risks, the number of prenatal visits is on average 5.6 percent lower than for mothers without risks—probably because as a group, mothers with medical risks are poorer, have less access to medical care and are perhaps more distrustful of the medical system. For African American mothers, the number of prenatal visits is 5.9 percent lower (compared with white mothers), and for single mothers, the number of visits is 8.6 percent lower. The difference is greatest for adolescent mothers, who complete on average 13.8 percent fewer visits than nonadolescent mothers. First-time mothers and Hispanic and "other race" mothers, on the other hand, complete more prenatal visits than their counterparts. The difference is largest between first-time and previous mothers (first-time mothers complete 11.7 percent more visits), which can probably be explained by the fact that first-time mothers have no prior experience with pregnancy and are more likely to follow

recommended prenatal guidelines. They may also be more likely than experienced mothers to schedule visits for minor complications or concerns.

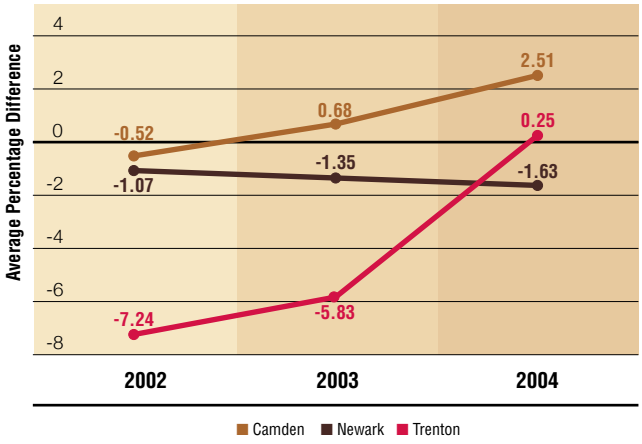
We also examined the influence of maternal characteristics on the other two outcomes related to CF's benchmarks: starting prenatal care during the first trimester and having no prenatal care. The effects of maternal characteristics on beginning care during the first trimester are similar to the effects on number of prenatal visits. In Trenton, women with at least one medical risk are 22 percent less likely to begin care during the first trimester compared with women with no medical risk. Across the cities, first-time mothers are more likely to begin prenatal care early in their pregnancy, while single and adolescent mothers are less likely to do so. Among Trenton women, single mothers are about 40 percent less likely than married mothers to begin care during the first trimester, and adolescents are 51 percent less likely than adults to do so. First-time parents, on the other hand, are 65 percent more likely to begin care early.

When we focus on women who do not receive prenatal care, we find that women with at least one medical risk are 150 percent less likely to receive any prenatal care than women without risk—again, this is probably related to women's economic and social circumstances. Adolescent and single mothers are less likely to receive any prenatal care in Trenton. And, as we saw in the other two analyses, being a first-time parent increases the odds of receiving prenatal care.

That the highest-risk women are least likely to receive prenatal care in the first trimester and most likely to receive no prenatal care at all is troubling and suggests that in addition to outreach efforts to improve first-trimester prenatal care use, the initiative might specifically target women with medical conditions that predispose them to adverse birth outcomes, such as diabetes or high blood pressure.[20]

This recommendation is supported by some hopeful indications in the data: The number of prenatal visits completed by women with medical risks (considering only women who enter prenatal care) has increased faster in Trenton than in the comparison cities (see Figure 7). One potential explanation

Figure 7
Percent Difference in Number of Prenatal Visits for Women with Medical Risk Compared with Women without Medical Risk, by City, 2002 to 2004



is that the extensive home visiting in Trenton has encouraged mothers to attend prenatal care visits more consistently.

The relationships between medical risks and preterm births shown in Figure 8 further support this recommendation. The effects of medical risk decrease in Trenton between 2002 and 2004, but this is not the case for other cities. This trend suggests that Trenton women with medical risks may be receiving more consistent care and learning how to better tend to themselves during pregnancy. In 2002, the odds of having a preterm birth were 150 percent higher for Trenton mothers with at least one medical risk compared with mothers with no medical risk, but by 2004, the odds were only 30 percent higher. The implication of this difference between Trenton and other cities is that CF's efforts may be reducing the effect of medical risk on adverse birth outcomes.

Figure 9 illustrates that preterm birth rates for women who receive late or no prenatal care are increasing in Trenton and Camden over time, but are not in Newark. These data support the idea that CF is affecting birth outcomes because the underlying analysis compares women who receive prenatal care late with those who receive it in the first or second trimester. If CF gets women to more

Figure 8
Odds Ratios for Preterm Births Given Presence of Medical Risk Factor by City, 2002 to 2004

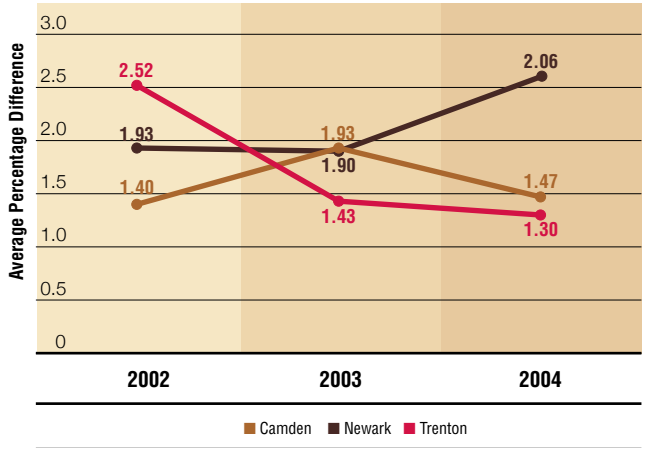
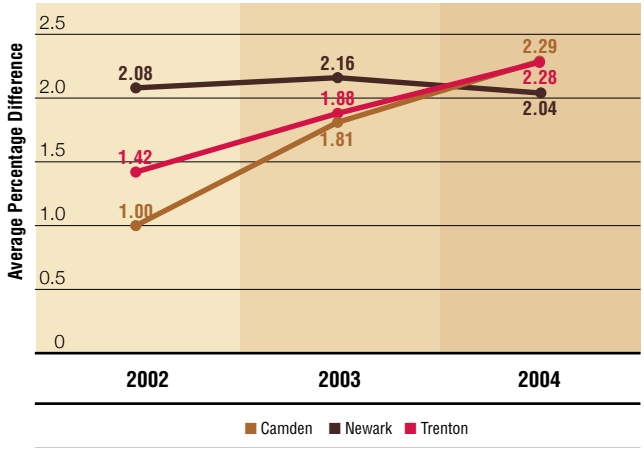


Figure 9
Odds Ratios for Preterm Birth Given Late or No Prenatal Care by City, 2002 to 2004



consistently attend their prenatal appointments and adhere to their physicians' directions than in previous years, that should result in fewer preterm births. We would then expect that the gap in preterm births between medically at-risk women receiving late prenatal care and those initiating in their first or second trimester would grow, which is what we see in Figure 9.

A second interpretation of Figure 9 could be that the proportion of women in Camden and Trenton who have medical risks rises compared with Newark over time. That dynamic would also produce the result we see, because as the proportion of women with medical risk rises, preterm births would likely rise. However, as Tables B2–B4 in Appendix B indicate, we do not see such a pattern of rising medical risk, and we think the first interpretation is therefore more likely.

Child Health Outcomes

The other area in which CF hoped to see health outcomes was among children, as the initiative has a number of goals and objectives related to child health. Among them are improved rates of on-time immunizations and lead screening, improved prevention and identification of child abuse and, for the second phase of the initiative, improved asthma management.

Measures of Child Health

Health researchers theorize that ensuring children have a medical "home" (a regular place for routine care) can reduce rates of emergency department (ED) visits and ambulatory care sensitive (ACS) hospitalizations. Indirect measures of child health include the proportion of preventable and avoidable ED visits and ACS hospitalizations (those in which timely and effective ambulatory care can help prevent the need for hospitalization).

The type of care that can prevent ED visits includes better asthma management to avoid acute attacks among patients with chronic asthma, parent education about how to improve home safety to reduce accidents, and child abuse prevention efforts. Similarly, some hospitalizations can be prevented through better asthma management, child abuse prevention and early intervention in treatable illnesses and conditions that can progress to serious infections.

At this point in the initiative, one would not expect to see major changes in children's health at the city level: Although CF began providing technical assistance in preventive healthcare measures in 2004, the first four modules of the practitioner training (on-time immunizations, child abuse identification, lead screening and child abuse prevention) were

not completed until 2005, with child abuse prevention efforts coming last. Thus, 2005 data would be unlikely to reflect any changes.

Emergency Department Use

As Table 4 demonstrates, the proportion of preventable or avoidable ED visits among Trenton's very young children was high and remained relatively stable over the course of the initiative's first three years, ranging from 71 to 82.6 percent, depending on the child's health insurance status. Visits are especially high among Medicaid patients and tend to be lower among patients with private or other types of insurance. A slight upward trend over several years may be a result of a decision within one of the hospitals to encourage ED use (instead of discouraging it) as a way of connecting people to primary care. The decision highlights the problems of using an indicator such as ED use to measure child health: Although ED use may reflect child health and the extent to which people use primary care providers as a usual source of care to some degree, it also reflects choices made by medical institutions and policymakers regarding how emergency departments should be used.

Hospitalizations

Figures 10 and 11 on the next page compare ACS admissions for New York and New Jersey cities that are similar with respect to population demographics and economic and social well-being. As shown in Figure 10, Trenton's ACS admissions (excluding asthma) have dropped quite dramatically over the past 13 years, from about 70 per 1,000 in 1992 to 40 per 1,000 in 2004.[21] Given the downward trend over time, it would be difficult to conclude whether CF had an effect on admissions. Camden and Newark also had significant drops (neither city is shown on Figure 10 because their patterns and asthma admission rates are similar to Trenton's). Rates in the New York cities are lower than those in New Jersey and fairly inconsistent (again, the figure shows Trenton compared with only Syracuse and Rochester, since Albany and Buffalo, the other two New York cities we examined, showed similar admission rates over time—full figures are presented in Appendix D). The comparison between Trenton and the New York cities indicates that there is room for significant improvement in ACS admissions in Trenton.

Table 4
Percent of Emergency Department Visits that Were Preventable or Avoidable Among Children 0–4 Years

Payment Type	2002	2003	2004
Medicaid	80.3%	82.3%	82.6%
Private Insurance	76.9%	79.7%	76.9%
Other	71.0%	76.1%	75.2%

Source: NYU's Robert F. Wagner Graduate School of Public Service. Data were collected from three Trenton hospitals and a hospital in a nearby suburb that serves many Trenton residents.

The patterns are slightly different when we examine asthma admissions. Again, there is an overall drop in the New Jersey cities, though Trenton's rate decreased from 13.4 percent in 1992 to 7.5 percent in 1999 before rising again to 11.2 percent in 2004. Rates in most of the New York cities dropped slightly over time, and, similar to the pattern seen in nonasthma admissions, the New York rates were substantially lower than the New Jersey rates. Rochester showed the most dramatic declines, perhaps due to various asthma-management interventions the city implemented during that time: A study conducted by Susan Yazdgerdi and Charles Homer confirmed that Rochester's primary care practices regarding asthma management differed from those in Boston and New Haven, CT, probably resulting in the better asthma admission rates.[22]

The drop in asthma admissions between the mid- to late 1990s and the early 2000s across cities reflects a national trend during the same time.[23] This drop may reflect effects of the founding of the State Children's Health Insurance Program, which has been related to a drop in asthma admissions in New York State.[24]

Although there is no evidence to suggest that CF has an effect on hospitalizations or ED use in Trenton, the data suggest that there is considerable room

Figure 10

ACS Admissions per 1,000 Children from Birth to Four Years, by City, Excluding Asthma Admissions

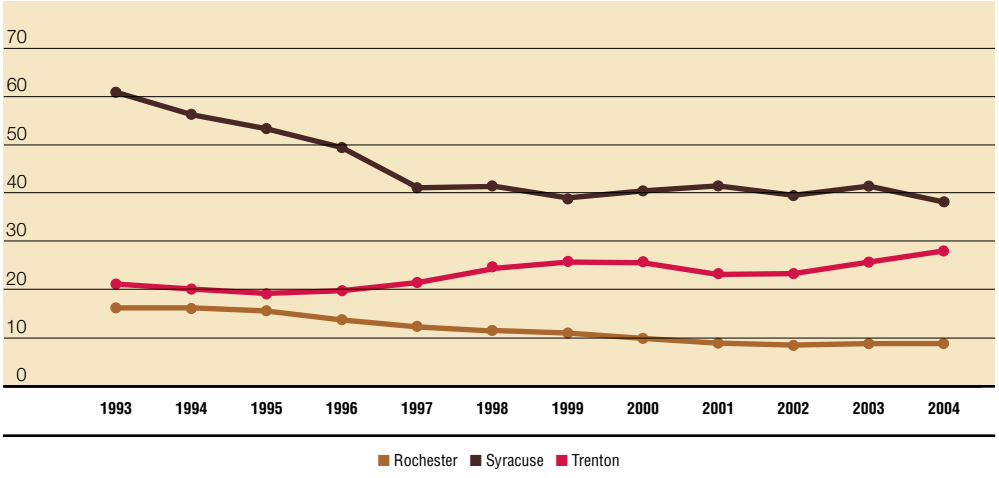
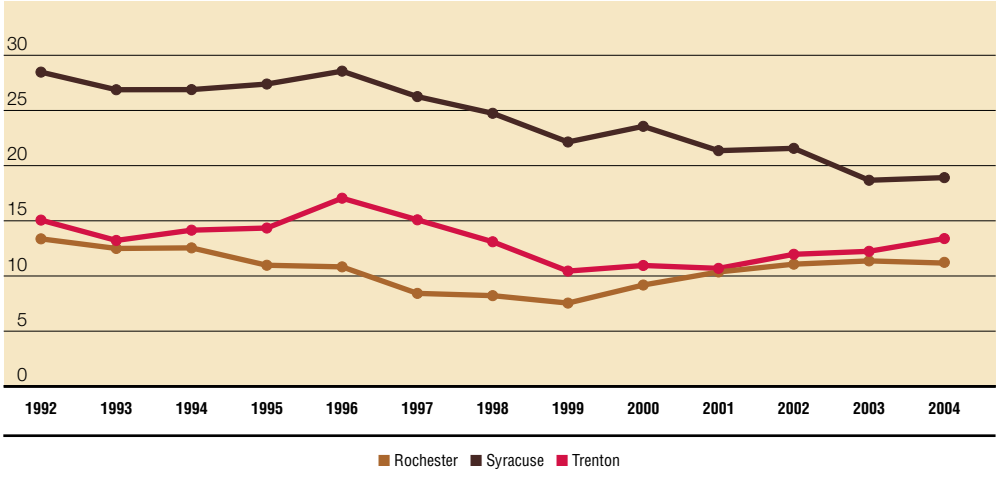


Figure 11

ACS Asthma Admissions per 1,000 Children from Birth to Four Years, by City



for improvement as the initiative refines its efforts during its second phase. When comparing city-level information, one cannot be sure that environmental differences are responsible for variations. However, many of the asthma initiatives implemented in Rochester during these years targeted clinical and patient practices. With a new focus on asthma management among clinicians and efforts to increase breastfeeding rates (breastfeeding is related to lower rates of asthma in children[25]) and to ensure children are enrolled in health insurance, the CF initiative may be able to affect both rates of asthma and ACS admissions related to the condition.

Summary

Overall, it is still too early to draw any solid conclusions about CF's impact on prenatal, birth and child health outcomes in Trenton. The initiative began in 2003, and two years of community-level data are insufficient to determine how CF may have influenced changes in outcomes.

However, with respect to births, preliminary evidence is moderately supportive of CF's efforts. Results from the birth outcomes analysis suggest that CF may be reducing the harmful effects of medical risk on preterm births. Medical risks are closely related to these outcomes across cities. Furthermore, the adverse impact of medical risk decreases substantially between 2002 and 2004 in Trenton, a pattern we do not see in other cities.

Preliminary findings from the prenatal analysis are also somewhat encouraging. Across cities, having at least one medical risk and being a single and/or adolescent mother increases the odds for adverse prenatal outcomes, while being a first-time mother decreases them. When city effects are broken down by year, however, we see some differences between Trenton and other cities. When we focus on the number of prenatal visits in Trenton, we see that over time the adverse effects of maternal risk factors decrease, but this pattern does not emerge in any of the other cities. Furthermore, when examining outcomes related to enrolling in prenatal care during the first trimester, we see the same pattern with respect to medical risk: The adverse effect of medical risk decreases over time in Trenton, and the decrease is more pronounced than in most other cities.

Unfortunately, it is still too early to attribute any changes in prenatal care or birth outcomes in Trenton to CF, especially considering that there has been a continued national emphasis on early and frequent prenatal care.[26] As data become available for additional years, it will be easier to determine whether the trends that seem to be developing are long-term trends or merely random fluctuations. Generally speaking, evidence at this point is moderately encouraging but too weak for us to draw solid conclusions about the impact of CF.

We saw no change in child health outcomes, which was expected: Efforts to improve the quality of preventive medical care began in 2004, too close to 2005 to expect to see changes in the 2005 data we had available. Activities that may ultimately affect health outcomes, such as hospitalizations and emergency department visits (child abuse identification, child abuse prevention and asthma management), got underway in 2005 and 2006.

In examining child health outcomes, however, we see much room for improvement in Trenton relative to comparable cities. Given some of the initiative's recent and planned activities, changes should be observable by the end of the second phase in 2011.

Sustaining Activities

Chapter IV

As an initiative designed to affect the amount and quality of services provided to Trenton's children and families, CF set out to garner resources over and above those provided by RWJF's $20-million Phase 1 grant. Although CF's initial five-year proposal did not include a formal plan for long-term sustainability, initiative leaders took a number of steps—some intentional, others serendipitous—that provide reason for cautious optimism that activities may be sustainable over the long term, especially since CF has committed itself to developing a sustainability plan during its second phase. This chapter examines how CF is supported across Trenton's human services agencies. Specifically, it addresses the following questions:

1. What resources went into CF activities at local agencies?
2. What proportion of the resources was provided by CF? By the local agencies?
3. How do local agencies perceive resource development and allocation by CF?
4. What challenges does CF face in resource development as it moves forward?

To answer these questions, we interviewed executive and financial staff from CF's primary partners and state and county officials, and examined both agency and state budgets. We wanted to know how much each partner organization contributed through in-kind contributions to its program operations.

Defining Resource Development

Before moving into the discussion about how CF developed resources during its first phase, it is important to define resource development. In conventional terms, resource development would usually mean finding additional funds to support specific CF activities. However, sustainability requires not only cash funds but also policies that enable and encourage agencies to spend resources in ways that further CF's goals. It also requires financial and other organizational strengths among partner agencies that could enable them to continue to provide services even if CF, Inc., could not provide the same level of funds. Thus, we define resource development as efforts on the part of CF, Inc., its partnering agencies and other supporters (including political leaders) to expand CF's activities, identify funds to sustain current activities and effect policy changes to help institutionalize CF features, goals and activities.

Resource Streams

There are three potential sources of funds to sustain CF's efforts: private, state and federal. Currently all three sources are being used, with the private grant from RWJF representing the initiative's largest source of funds. CF has also received state and federal funds for some of its home-visiting programs. The foundation funding will come to an end when CF concludes its second phase in 2011, and CF must replace it. Realistically, private funding will probably only pay for relatively small projects once the second phase ends. The state and federal governments will likely need to provide the major sources of funding.

State Funding

The state is the largest source of funding for social services in Trenton—and much of the state funds come from block grants or entitlement programs from the federal government. So far, the state has funded several of CF's efforts. At the beginning of the initiative, the city was awarded a grant from the New Jersey Department of Justice to finance the Nurse-Family Partnership for its first two years: CF's presence in the community provided the leverage the city needed to receive that funding. The state has also contributed to an initiative that aims to improve prenatal clinical practice by working with the managed-care plans that serve people enrolled in the state's health insurance program. A relatively small grant ($150,000) from the Department of Children's Services went to CF to enhance community services at the parent-child centers. The state also provided $209,000 in TANF funds to the city for additional prenatal services, which has enabled the Healthy Families programs to serve more clients.

Getting additional funds from the state will be a challenge: State personnel have indicated to CF, Inc., staff that they do not think Trenton's funding needs are as great as those of other New Jersey cities because the foundation funding is there. From the point of view of the staff at the state level, who must make difficult decisions about how to allocate funds, the foundation funds are taken into account when considering the city's need.

The initiative leaders may need to rely on changes in state policy to increase the city's funding levels. They have already done so in one important instance: CF, Inc., staff participated in drafting the New Jersey Family Health Care Coverage Act to expand the state health insurance plan to adults and change eligibility requirements to make it easier for families to maintain their coverage.[27] Prior to the passage of this legislation in July 2005, families were required to reenroll their children every six months, which led to families being dropped from the program when they did not return their renewals on time. CF, Inc.'s access to the group that wrote the new legislation was facilitated by one of its grantees, the New Jersey Academy of Pediatrics, demonstrating how initiative partners can successfully work together to achieve policy change.

CF also hopes to contribute to efforts to improve state policies and infrastructure around early-childhood learning through its work with BUILD-New Jersey, a statewide initiative. The vice president of CF, Inc., and the executive director of the local resource and referral agency charged with improving the quality of childcare were among the 25 state leaders who started the initiative, and CF, Inc., was one of the 30 partners who helped develop BUILD-New Jersey's two-year work plan.

Given that New Jersey already spends more than other states on early-childhood programming, BUILD-New Jersey is mainly interested in fostering better coordination among those responsible for early-learning policies and quality standards for childcare as well as freeing up additional funds for services through cost efficiencies and blending funding streams. In Year One, the group called for a cabinet-level cross-agency committee to coordinate state early-learning policy. It also endorsed an incentive-based professional development policy for early-learning educators and a parent outreach effort. In Year Two, the group developed a work plan to publicize and support its policy agenda.

The Federal Possibility

The other major funding source for activities that further CF's goals is the federal government. Two of CF's major direct-service components, Nurse-Family Partnership and Healthy Families, are directly funded by a federal Healthy Start grant. (As noted above, during its first two years, Nurse-Family Partnership was funded by the state.) In addition, a range of other local programs that may contribute to CF's goals are funded through federal sources. An Early Head Start center, which serves the CF population, opened in Trenton shortly after the initiative began; CF's father-involvement component cosponsored activities, such as father-child field trips, with the center in hopes of expanding CF's efforts and leveraging resources within the community.

Resource Contributions from Key Partners

CF's strategic partners are one of the largest sources of additional funds and have significant financial resources of their own (primarily funded by the state or federal government). The financial relationships between CF and its strategic partners are complex. As CF collects resources *for* its strategic partners, it also collects resources *from* those partners. In this section we examine that complexity and discuss key partners' perspectives. Some have positive or neutral assessments, while others have largely negative assessments: Partners with negative assessments may be disinterested in helping sustain the initiative.

"Strategic grant" awards are provided to partners implementing core evidence-based activities. The seven major partners[28] that received strategic grant awards include the four agencies that operate CF's parent-child centers and three organizations that provide supplemental services. Catholic Charities, Children's Home Society, Mercer Street Friends and St. Francis Medical Center host parent-child centers out of which they run Healthy Families home visiting. Union Industrial Home offers services for fathers. Greater Trenton Behavioral HealthCare works with mothers on mental health issues, and CCC supervises the organization of childcare centers participating in CF.

Between 2002 and 2005 (the first four years of the initiative), CF, Inc., awarded almost $10 million in foundation grant dollars. Awards fit into one of three portfolios—strategic grant, innovative approaches or capacity-building—and agencies received only one type of grant (see Table 5).

"Innovative approaches" awards are intended to provide the initiative with flexibility to address needs as they arise. The grants are not necessarily limited to evidence-based practices, though several are. Among the innovative approaches awards are the grants to the Center for Health Care Strategies for Best Clinical and Administrative Practices to improve prenatal health and the grant to the New Jersey chapter of the American Academy of Pediatrics to improve preventive healthcare to infants and toddlers.

Table 5
Children's Futures Grant Summary, 2002 to 2005

Type of Award	Number of Awards	Dollar Amount
Strategic Grant	16	$8,815,776
Innovative Approaches	19	$882,798
Capacity-Building	9	$120,000
Total	**44**	**$9,818,574**

"Capacity-building" awards are intended to strengthen local agencies' capacities to raise and manage additional funds. Agencies joined a grant-writing workshop prior to submitting proposals for funding. They were also invited to be part of an effort to improve nonprofit leadership, which provided training in organizational development.

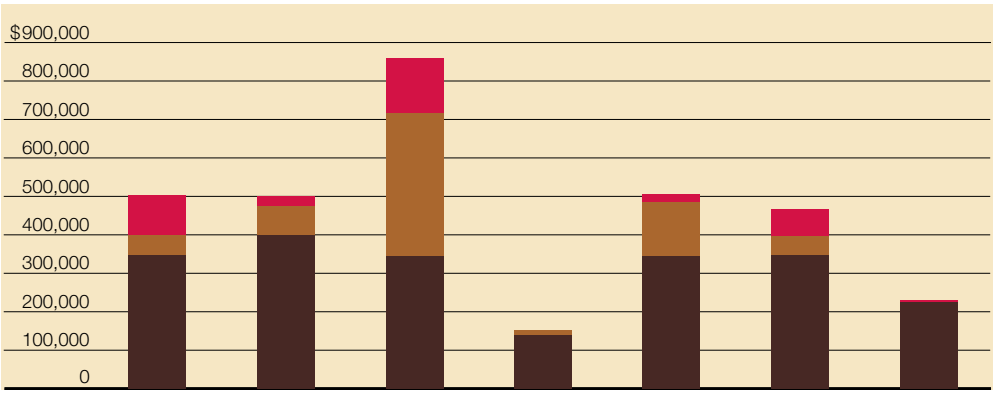
While CF gave 44 awards across all three types, we focus on agencies that received strategic grant and innovative approaches awards. The remaining nine capacity-building awards went to much smaller agencies that did not provide other funds to support their involvement with CF. Those agencies' participation in the initiative was brief, and they were not explicitly involved in efforts to sustain it, thus we do not discuss them in detail here.

Table 6 summarizes the average award by type, the average grantee revenues and the proportion of the agencies' budget that the award constituted. As a group, the strategic grant partners are fiscally strong, averaging $26 million[29] in grants, donations and government resources, excluding their CF awards. Union Industrial Home (see Appendix D), the smallest of the partners, received $2.1 million (FY 2004), and CCC attracted $2.3 million (FY 2005). Three agencies attracted funds in the $7 to $15 million range: Greater Trenton Behavioral HealthCare, $7.8 million (FY 2004); Mercer Street Friends, $11.5 million (FY 2003); and CHS, $12.3 million (FY 2004). Catholic Charities and St. Francis Medical Center, the partners with the largest budgets, secured $35.7 million (FY 2004) and $110.5 million (FY 2003), respectively.

Table 6
Average CF Awards and Grantee Revenues, by Award Type

Type of Award	Average Size of Award	Average Grantee Revenues (Excluding CF Awards)	Average Award Size as a Percentage of Total Grantee Revenues
Strategic Grant	$350,986	$26,049,310	2%
Innovative Approaches	$46,463	$8,331,153	0.5%
Capacity-Building	$13,333	$1,083,424	1%

Figure 12
Funding Sources for Strategic Partners, FY 2006



	Cathlic Charities	Child Care Connection	Children's Home Society of New Jersey	Greater Trenton Behavioral HealthCare	Mercer Street Friends	St. Francis Medical Center	Union Industrial Home for Children
Strategic partner share (in-kind)	105,000	25,392	145,248	0	22,873	68,800	4,324
Strategic partner share (cash)	50,218	74,150	370,153	13,444	139,795	50,218	0
Children's Futures share	347,642	400,000	345,000	139,201	344,407	347,624	225,000

By contrast, CF's 13[30] innovative grant recipients averaged $8.3 million in resources (in various years), excluding their CF awards. Two grantees, Trenton Public Schools and First-Book Mercer County, had particularly sizable revenue streams. Eight others had revenue streams above $1 million, and by this sole criterion might have the potential to play a major role in a future version of the partnership.

CF's seven[31] capacity-building grant recipients averaged $1.1 million in resources excluding their CF awards, but that figure obscures the considerable spread among the agencies. Median revenues for the recipients were $150,000.

Strategic Partners' Contributions to CF Programs

In addition to funds CF provides to its programs, the strategic partners invested their own funds directly, made in-kind contributions or did both. The grants CF awarded these partners ranged from $139,000 to $400,000. When the funds and in-kind contributions provided by strategic partners are added, those totals swell and range from $150,000 to $860,000. Greater Trenton Behavioral HealthCare reported its total budget was $152,645, with no estimated in-kind contributions. Union Industrial Home reported a total budget of $229,324, with no direct investments. With both types of contributions, CCC's total budget was $499,542. With similar dual investments, St. Francis Medical Center reported the smallest budget for a parent-child center, $466,642, followed by Catholic Charities, $502,860; Mercer Street Friends, $507,075; and CHS, $860,401 (see Figure 12).

Among the six partners who reported direct contributions in their budget audits, CCC and CHS included costs for supplies, training, services, printing and telecommunications. In two cases, partners paid for consultants and contract agreements. CCC was funded to train childcare providers, help providers create and implement quality improvement plans, and manage the acquisition of equipment or materials that would improve local environments. CCC put its own money into these services and consultants. (See Table 7 on the next page.)

An important source of in-kind contributions was staff time, as staff who were only partially funded by CF were "pulled away" on CF duties at rates

Table 7
All Program Contributions Reported to Children's Futures

	Catholic Charities	Child Care Connection	Children's Home Society	Greater Trenton Behavioral HealthCare	Mercer Street Friends	St. Francis Medical Center	Union Industrial Home
Personnel	$50,218	$33,270	$286,925	$13,444	$99,231	$50,218	$0
Other direct costs	$0	$3,090	$17,607	$0	$0	$0	$0
Consultants and contract agreements	$0	$13,007	$35,058	$0	$0	$0	$0
Indirect costs	$0	$24,783	$30,563	$0	$40,564	$0	$0
Totals	**$50,218**	**$74,150**	**$370,153**	**$13,444**	**$139,795**	**$50,218**	**$0**

Source: CF audit of agency budgets for July 1, 2005, through June 30, 2006.

Table 8
In-Kind Contributions from Strategic Partners

	Catholic Charities	Child Care Connection	Children's Home Society	Greater Trenton Behavioral HealthCare	Mercer Street Friends	St. Francis Medical Center	Union Industrial Home
Personnel "pull-away" contribution	$21,000	$25,392	$36,748	$0	$22,873	$57,000	$4,324
In-kind expenses	$19,000	$0	$60,000	$0	$0	$0	$0
Repairs, renovations	$65,000	$0	$0	$0	$0	$0	$0
Gifts/donations	$0	$0	$10,000	$0	$0	$11,800	$0
Rental subsidy	$0	$0	$38,500	$0	$0	$0	$0
Total	**$105,000**	**$25,392**	**$145,248**	**$0**	**$22,873**	**$68,800**	**$4,324**

Source: Interviews with agencies; budgets for July 1, 2005, through June 30, 2006.

greater than the portion of their time funded by CF. Greater Trenton Behavioral HealthCare made no in-kind claims, noting that its reporting requirements to other funders restrict it from staff "pull-aways" and other in-kind arrangements. Three organizations reported only personnel costs: Union Industrial Home, $4,324; Mercer Street Friends, $22,873; and CCC, $25,392. St. Francis Medical Center reported $57,000 in staff "pull-away" charges and $11,800 in gifts and donations. Catholic Charities claimed $21,000 in personnel charges, $19,000 in in-kind expenses and $65,000 in unreimbursed repairs and renovation, for a total of $105,000. CHS reported $36,748 in staff "pull-away" time, $60,000 in expenses, a $38,500 rent subsidy and $10,000 in gifts and donations, for a total in-kind contribution of $145,248.

The average strategic partner contributed a third of the estimated resources its CF programs required for operation, though the figures varied from 1.9 percent to 67 percent.

How Partners Assess In-Kind Contributions

There was considerable variation in how these partners assessed their resource relationship with CF. Analyzing these differences can inform approaches that may be valuable in future efforts to sustain the initiative. The two smallest programs, which provided the least in in-kind and other resources to support CF work, were most positive in their assessment of their financial arrangements with CF. These two agencies saw the partnership as an opportunity for their own resource development. The next three larger agencies perceived the partnership as more valuable to their partners than to them and saw their contributions as the routine costs of doing business in such a partnership. The largest partners—and those who reported the highest levels of in-kind and other support—were the most critical of their role in the partnership, in part because they reported that despite their investment they were limited in their decision-making opportunities.

Partnership as Opportunity

The two organizations that assessed the partnership most positively had little in common. Union Industrial Home put no money of its own into its fatherhood program but estimated that it contributed $4,000 in in-kind assets to its $225,000 grant. Greater Trenton Behavioral HealthCare put in 9 percent of its program's total budget but claimed no in-kind contributions.

The trait they shared was that both saw an opportunity to enhance their existing programs. Union Industrial Home said that CF involvement was helpful in securing a $120,000 grant from Mercer County intended to help 100 additional men become computer-literate and job-ready. Greater Trenton Behavioral HealthCare's reasoning and experience has been more complex. Agency executives and staff believed that CF initially missed an opportunity to provide a case manager model for the mothers, whom they saw as needing extensive services. But they also believed that a common problem among CF agencies—making and maintaining contact with hard-to-reach mothers—presented a common opportunity they could use to further their mission. From the initiative's early years, agency staff have called for greater use of case management techniques for mothers for whom behavioral health services are stigmatizing and those with what they term "situational depression"—depression that has its genesis in the difficulties mothers have in meeting their families' basic needs. By the end of the first phase of the initiative, they had developed a notion of a participatory relationship in CF's resource-development activities and noted that they sought funding on their own in the name of the partnership. In particular, they planned a proposal to the state that suggested that hard-to-recruit, treatment-resistant mothers be given the choice of enrolling in CF instead of remaining involved with the city's Department of Family Services and risking losing custody of their children.

Partnership as Routine Cost

Catholic Charities, CCC and St. Francis Medical Center saw their fiscal relationship with CF largely in neutral terms. They viewed their in-kind contributions as a routine cost of doing business. None in this group saw the partnership as an opportunity for resource-development either for themselves or any initiatives with which they were associated. For them, however, the partnership had the potential to better serve Trenton's families even if it did not directly advance their core mission.

Partnership as Burden

Mercer Street Friends and CHS saw significant and, in some cases, unexpected costs of participating in the partnership. Mercer Street Friends' downbeat appraisal of its contributions to CF rested on its perception that its participation was a risk to the organization's fiscal health, and it believed that the burden was not balanced by gains from the partnership.

The total cost to Mercer Street Friends was $484,795, an in-kind and direct matching rate of 40 percent. For example, beginning in 2005, the state allocated TANF dollars to Healthy Families programs in New Jersey. Typically, Healthy Families agencies received the funds. As the only Trenton agency that had a preexisting home-visiting program prior to CF, Mercer Street Friends would have been the receiving agency. However, the $208,000 allocated to Mercer County was split up among the home-visiting programs (Mercer Street Friends still received the bulk of the funds), and the agency's staff perceived that they had lost money.

CHS also saw CF as a burden, but it measured the cost of its participation in terms of roads not taken, initiatives not pursued, advice not heeded and structures not implemented. The cost or value of what it termed "missed opportunities" is difficult to measure. In impressionistic terms, staff pointed to things "done right" and encouraged a comparison between these things and things as they are as their measure of missed opportunities. For example, at the beginning of the initiative, CHS proposed to CF, Inc., that it run the four parent-child centers and partner with local agencies to run citywide programs that could be accessed through those centers. In part, that is how CHS ran its parent-child center. It partnered with a hospital that delivered most of Trenton's babies and created a program for pregnant Latinas, CUNA (meaning "crib" in Spanish). The program was designed to educate Spanish-only-speaking mothers about prenatal care and childbirth and to increase their comfort with the medical system. The program was open to women from across the city, but CHS's parent-child family support workers recruited some of their clients to participate. CF, Inc., in an attempt to make full use of the capacities of Trenton's agencies, preferred that each center have a different lead agency and turned down CHS's original proposal. Its staff requested that CHS apply to run only one of the parent-child centers, which it ultimately did.

There are major advantages and disadvantages to each approach, and it is difficult to know which is best: One that spreads the same function (e.g., running parent-child centers) across agencies has an inherent advantage in ensuring that the capacity to perform the function persists within the community. If one of the agencies that perform that function does not survive, the work can be continued. In addition, in a community in which competition for funds is strong, a funder, such as CF, Inc., runs the risk of alienating agencies if it directs all its funds toward one agency. Staff at CHS saw CF, Inc.'s decision to spread funds across agencies as based in politics and not an honest assessment of agency strengths. From CF, Inc.'s perspective, however, deciding how to distribute funds among area agencies was based on assessments of those agencies, the need to establish itself as impartial in Trenton and its desire to strengthen a variety of agencies.

An approach that focuses a function within an agency may ensure that the quality of work is high: One can select the agency that performs the function best. In addition, there may be efficiencies of scale if one agency is responsible for a function. On the other hand, nonprofit agencies' survival can be tenuous. During CF's first five years, for example, the agency that was initially responsible for screening women for substance abuse lost its contract with the state and closed, leaving a gap. A second program received funds from the county and city governments to assess children's development. That program provided technical assistance to childcare centers involved in CF in recognizing potential developmental delays. When that program lost its funding, CCC needed to find another technical assistance provider, which was challenging.

There are several reasons why two key agencies saw the CF partnership as burdensome and disappointing. First, in some cases, CF's presence may have altered state agencies' funding decisions. For example, without the initiative, the state might have decided to funnel more TANF funds for home visiting through Mercer Street Friends.

Second, CF, Inc.'s leadership has not always involved strategic partners in key decisions. CHS has contested the types of decisions that CF, Inc., reserved for itself (such as how foundation funds would be distributed across the city). As the

initiative moves into its second five-year phase, it is unclear to what extent CF, Inc., may alter its decision-making strategies.

Third, CF's partners and stakeholders only saw part of CF's larger resource-development picture. Integrating activities across the range of providers (such as medical, childcare, behavioral health, family support, etc.) who may not typically have relationships (such as physicians with childcare centers or home-visiting programs with efforts to improve the quality of childcare centers) has been an ongoing developmental challenge that requires conscious effort.[32] Given the superficial knowledge many agencies' staffs had about the initiative's broad scope, it was very difficult for them to understand how shared development might benefit both the agencies and the community.

CF seeks to integrate its operations as much as possible within existing Trenton area support services. One consequence is that CF, Inc.'s $4-million annual contribution to the initiative is spread so well that the organization's fiscal footprint within its areas of effort is usually surprisingly small. This means that when CF, Inc., and its partners think about sustaining CF, they only have to think about relatively small resource gaps in specific areas rather than one large, general one. Hence, they focus on thinking about CF's activity (or activities). But this strength is also a weakness. It makes it difficult for its partners to think in terms of sustaining CF and the initiative, or to see the larger resource-development picture.

Implications for Practice

CF has brought in new grants and redirected older funding sources. It has engaged partner agencies in fund development and financed their work in the initiative. Some of the initiative leaders' discussions with state officials have led to increased funding for subsidized health insurance for parents and changes in insurance regulations about presumptive eligibility.

Yet the initiative cannot yet sustain itself without the substantial funds provided by RWJF—one of its key goals. And it has struggled to raise state funds for CF's direct services—work in the parent-child centers, home-visiting programs and fatherhood services—which are expensive. The presence of RWJF money in Trenton makes fundraising for specific activities simultaneously easier and more challenging than it would be otherwise. It is easier because some grants have specifically been awarded as a result of matching RWJF funds. It is more difficult because some state agency personnel would rather distribute funds to locales that lack the range of services available to Trenton's families.

The challenges and advantages to fundraising presented by RWJF's funding level suggests that initiative leaders should employ a two-pronged strategy: They should seek existing state funding through competitive grant processes; they should also work to change state policies so that additional funds for CF services are allocated based on population size instead of on assessments made by state administrators who take into consideration the Foundation's funds, which tends to diminish their assessments of Trenton's needs. Such an approach would permit the initiative to capitalize on the leverage provided by the RWJF grant and benefit from improved service levels.

In addition, CF—and other community-change initiatives like it—should ensure the cooperation of the agencies involved in its work. That cooperation is not guaranteed if some agencies' staffs perceive that participating in the initiative will result in additional financial burdens. To address this, community-change initiatives should make development goals more transparent so partners can more thoroughly assess their potential gains and losses from collaboration.

Community-change initiatives should also make it easier for agency partners to rely on the initiatives' reputation for selective resource-development enterprises. In CF, the initiative's identity and reputation is becoming a valuable resource. Fundraising to date has focused on the initiative as a whole, which has helped forge a shared identity across the community, but that identity needs to coexist with the identities of individual agencies. For CF and other similar efforts to succeed, their partners will need to find ways to foster both initiative-wide and agency-specific development efforts.

Conclusion and Lessons Learned

Chapter V

CF has developed a culture of relying on evidence-based practices when they are available, assessing progress by using information provided by the agencies as well as this evaluation, and making changes to address challenges.

CF's Successes

At the end of the first five years, some important successes have been achieved in the following areas.

Improving the Quality of Childcare for Infants and Toddlers

The initiative works with the childcare centers that have approximately 27 percent[33] of the available infant or toddler slots in Trenton. In early 2003, these centers were assessed using a nationally recognized rating scale for infant and toddler classrooms; they scored an average of 2.86 (out of a possible 7), which meant that the centers were just about meeting minimal standards of quality. By Fall 2006, the average score was 4.86—a very large improvement—and years of experience and qualifications among infant-toddler teachers had risen slightly.

Attempts to boost the quality of family childcare homes have also been successful, after an early failure. In mid-2005, the initiative revamped its efforts to work with family childcare homes, which had failed primarily for three reasons: First, three childcare centers were initially tasked with providing technical assistance to family childcare providers in an attempt to create networks of centers and family childcare homes. Staff at the centers who were responsible for the efforts tended to be young, with little experience in providing technical assistance. Second, they were often called on to help with center operations, making it difficult for them to work with the family childcare providers. And third, they did little targeting in selecting family childcare providers; many of the providers in the initial groups had weak commitments to the work and few children in care.

Revised strategies for the family childcare quality improvement efforts included placing operational responsibility with the childcare resource and referral agency that was running the childcare-center quality improvement efforts. That agency has a long history of childcare training and technical assistance. The staff members hired for the effort were dedicated solely to recruiting providers and providing them with technical assistance. Finally, more care was taken in selecting providers who were more committed to their work.

Improvements in care were not nearly as large among family childcare providers as they were among the childcare centers. Most of the 17 providers rated showed an overall increase of about one point (on a seven-point scale, compared with two points for the childcare centers). Three showed very slight decreases. However, the family childcare effort had been in place half as long as the childcare-center effort when the follow-up ratings were completed. At the same time, the childcare-center efforts had shown similar increases,[34] suggesting that the family childcare ratings may also continue to increase.

Implementing Home-Visiting Programs

A central intake system is in place within the city of Trenton, and approximately 50 percent of all women who give birth in a given year are screened for possible inclusion in home-visiting programs or other services, such as behavioral health supports or substance abuse treatment. Four healthcare providers—two hospitals, a federally qualified health clinic and a Planned Parenthood clinic—refer pregnant women to Central Intake, and agreements have been put in place among those health providers and various other Trenton agencies to permit referrals and the release of women's screening data.

Home-visiting programs have succeeded in meeting many of their operational benchmarks. They have enrolled more than 800 women since late 2002, and very high proportions of the women in the programs meet program eligibility requirements. Their average retention is not as high as the benchmarks set by the programs' national offices, but women still participate for a little more than a year.

Improving the Quality of Preventive Healthcare

The initiative recruited 11 of 13 pediatric and family practices that serve Trenton residents to participate in efforts to improve the quality of preventive medical care. Through 2006, those efforts included several trainings delivered in practices' offices to all staff, including receptionists and other office personnel. Topics included: strategies to increase on-time immunizations, the use of New Jersey's mandatory (but unenforced and underutilized) electronic immunization registry, and lead screening rates; recognizing and preventing child abuse; and managing asthma. All practices now use the electronic registries, and 9 of 11 practices have changed their procedures to make infant lead screening more likely.

Importantly, the effort has also attempted to address challenges physicians face in serving their low-income populations. It was after discussions with physicians about the difficulty of keeping patients enrolled in medical insurance that the initiative began to seriously work on state legislation to improve insurance processes, which ultimately resulted in a bill being successfully passed and signed into law that provided presumptive eligibility for children already enrolled in the state children's health insurance program and Medicaid, preventing them from being dropped automatically from their insurance every six months if their parents did not return the paperwork on time.

Leveraging Considerable Resources from Partner Agencies

For the purposes of this report, resource development, which is critical to sustaining CF's future work, includes efforts to find the financial resources to expand activities in support of CF, identify funds to sustain current activities and effect policy changes to help institutionalize CF's features, goals and activities.

In general, the initiative had considerable successes in raising funds. Key strategic partners, who received the largest CF grants, provided an average of one third of all their CF program costs during FY 2006. Items partners paid for (or received non-CF grants or donations for) included salaries, materials, equipment, rent and facility repairs. In addition, the City Division of Health leveraged the CF grant to receive two consecutive federal Healthy Start grants in excess of $4,000,000. Additional grants came from the state to run the Nurse-Family Partnership for two years and improve service coordination for families.

In addition to supporting some of the CF efforts, the initiative's partners also facilitated relationships with state policymakers to affect policies pertaining to children and families. In its first phase, these efforts included providing advice to state legislators about legislation designed to improve families' access to health insurance and working on a statewide initiative to raise state standards for childcare. Although this work did not provide resources directly to CF, it served to further the initiative's mission.

CF's Impact on Community-Wide Prenatal, Birth and Child Health Outcomes

Collecting outcomes information on individual CF participants is important for assessing implementation, but it cannot tell us whether the initiative is having an effect on the community as a whole. Administrative records information, such as birth and hospital records, can provide some insight into questions about CF's potential benefits. However, it is crucial to understand that given the timing of initiative activities and the timetable for availability of public records data, there are, at best, two years of follow-up information available from the beginning of efforts to improve key outcomes. For reasons discussed in greater depth below, one would not expect to see much in the way of change at a community level at this stage, even if the initiative were very successful.

There are some early suggestions that CF services might be having an effect on a certain group of pregnant women—those with medical risks. Such risks are highly correlated with having preterm births. In Trenton, however, compared with other New Jersey cities, the relationship between medical risks and preterm births has been diminishing since the initiative began. This result could be explained if the home-visiting programs were recruiting sufficient numbers of mothers with medical risks and affecting their adherence to prenatal care, which they seem to be.

However, we also saw that preterm births in general have increased slightly over the years. The trend in Trenton reflects a national trend that is not well understood. We know from our analyses that there are many factors we cannot measure that could account for this finding.

There are no indications that child health—as measured by emergency department visits or hospital admissions—has improved. We expected that we would not see any change primarily because the child-abuse-prevention and asthma-management training for the pediatric and family care practices got off the ground in 2005 and 2006, and city-level data is only available through 2005.

Lessons for CF's Second Phase

Despite important successes, there have been challenges throughout the first five years, and initiative stakeholders are making specific efforts to address some of them as they move into the initiative's second five years.

Efforts and Outcomes Should Be Closely Aligned

At the end of the first phase, staff at CF, Inc., the Trenton Division of Health and RWJF agreed that CF's efforts should be more closely aligned to its outcomes. To that end, they revisited their desired outcomes and asked themselves again, "What types of efforts show evidence of leading to these outcomes?" Some of this work was done at the beginning of the initiative, but because the initiative refined its goals over time, further work remains.

For example, child health is one of the initiative's major outcome areas and includes a range of specific outcomes: higher on-time immunization rates, lower rates of child abuse and neglect, better asthma outcomes and higher lead screening rates. Two major efforts were in place to ensure that some of these outcomes were addressed: The home-visiting programs and the efforts to improve the quality of pediatric medical care both targeted immunization and child abuse and neglect. However, asthma was addressed only through working with physicians on improving asthma management, and that effort began relatively late in the initiative. Although some initiative leaders were interested in raising breastfeeding rates among Trenton's mothers, efforts to do so were not sustained enough to achieve changes. This lack of follow-through was likely due to the fact that while all agreed that breastfeeding might be good for children, there was no real recognition that it could prevent asthma if sustained for several months.

Participants Should Be Selected Carefully

Community-change initiatives must both be sensitive to the need to serve their entire communities and spend their resources effectively. The first imperative suggests that programs should be universal in nature, while the second suggests that efforts should target those who are neediest. CF struggled with these sometimes competing demands throughout its first five years.

One of the challenges to better targeting is that many different factors contribute to the birth, health and developmental outcomes of interest to the initiative. There are often several reasons why babies and children have adverse outcomes; as a result, the range and number of factors that contribute to those outcomes can often vary considerably across a population. Trenton, for example, is an ethnically and racially diverse city. In deciding whom to target, therefore, programs should ask a series of related questions: "What is the issue we would like to address, and what changes would we like to see? Among our population, who is most likely to have the adverse outcomes we want to change? If we target particular groups, what is the maximum number of people we could potentially affect?"

Evaluation of Community-Change Initiatives Must Draw on Multiple Sources of Information

Evaluating community-change initiatives experimentally is cost-prohibitive and still has many design challenges. Doing so is expensive because multiple communities need to be selected and assigned to either the initiative's treatment or control group. Even if that were feasible, the long timeframe for community-change initiatives would make it very likely that efforts (similar or different) to address the concerns that gave rise to the initiative in the first place would be undertaken in control communities, which could severely compromise the research and challenge its capacity to determine impact.

Quasi-experimental designs that rely on comparisons among communities face similar problems. Gathering data beyond those accessible in administrative or public records is very expensive. Without the type of individual information available through surveys, understanding the services and benefits people in comparison communities might be receiving and understanding results that show no—or even negative—outcomes becomes impossible. Unfortunately, studies that show limited or no effect and cannot explain why are all too common.

In an effort to address the problems of evaluating community-change initiatives, some researchers have advocated a "theory of change" approach.[35] This approach requires that initiative stakeholders identify the things they want to change (such as birth outcomes, educational outcomes and economic outcomes), the reasons they think their approach will work (based in both research and practice) and the specific steps that will lead to the desired changes.

While we employed this evaluation approach in this report, it is not without its detractors, who rightly point out that the lack of a strong comparison or control group poses serious challenges to conclusively proving the initiative had an effect.[36] As we saw in our analysis, birth outcomes for mothers involved in home-visiting programs were better than those in Trenton overall. The home-visiting programs were also well-implemented. Absent information about the home-visiting programs and their effective implementation, a straightforward theory of change approach might conclude that CF was effective. But this conclusion would be premature given the very real possibility that even in the absence of the programs the mothers who participated would have had lower likelihoods of having adverse birth outcomes compared with mothers who did not participate.

Triangulating information from multiple sources is perhaps the most practical (albeit imperfect) solution. It will not satisfy proponents of experimental studies, though, and until researchers better articulate the procedures for selecting and analyzing some of the data they use, there may be little consistency in how they conduct their analyses. However, this approach does provide additional information with which to evaluate a community-change initiative's potential effect. An initiative's theory of change can be used both to identify areas where observable changes might have occurred and to make comparisons with other cities. In CF, for example, the use of implementation information provided an early indication of whether any observable changes might result from its efforts. The use of time-series data provides information about trends in birth and health outcomes, allowing us to determine whether there is any evidence that changes in trends occurred after CF began. The use of comparison-city information permits us to examine the possibility that observed changes may be part of larger state or nationwide trends, which would not prevent us from concluding that CF was responsible for the changes, but would make us very cautious about doing so. Those comparisons also can be used to test hypotheses derived from the theory of change. We used both strategies in Chapter IV.

CF Will Move Forward with Systematic—and System-Wide—Data Collection

Systematic data collection is crucial for self-assessment, interagency collaboration, quality improvement and successful evaluation in community-change initiatives. One of the persistent challenges facing CF was the lack of systematic data collection across the agencies in the initiative—a common problem for community-change initiatives. The need for systematic information has become obvious to funders and practitioners over the past two decades; it is less obvious how to ensure that these data are methodically collected and analyzed. The problem has multiple causes that must be addressed, each of which were apparent in the CF initiative.

Agencies resist sharing information with other agencies.

At the beginning of the initiative, agencies involved in planning how clients would be allocated across multiple home-visiting programs were uneasy about data sharing. Concerns about the then newly implemented Health Insurance Portability and Accountability Act (HIPAA) rules about patient privacy were repeatedly brought up: The federal government required that CF's key behavioral health agency, Greater Trenton Behavioral Health Care, and the hospitals involved in sending prenatal screens to the city's Central Intake had to comply

with HIPAA. Pregnant women had to sign consent forms allowing the hospitals to send their screens, which constituted patient information, to Central Intake, and partner agreements were formally established among agencies. The behavioral health agency did not share specific information about clients referred to it by other initiative agencies because of HIPAA, which caused misunderstandings among agencies about the work that was being done.

Although this resistance has its roots in real concerns about confidentiality and privacy, the initiative had agreements in place to permit information sharing and standards for doing so among some of the agencies. Thus, it is not an insurmountable problem.

Funders, reluctant to impose their will on agencies, may skirt the issue of requiring strong data collection efforts.

CF, Inc., staff felt a strong need to establish credibility among the local agencies and were sensitive to the resistance expressed by the agencies' staff with respect to data sharing. CF, Inc., did not require that the agencies provide de-identified individual-level data, nor did it initially require that they provide specific information on client outcomes in their semiannual and annual reports. As a result, the reports' contents varied considerably; some agencies provided largely anecdotal evidence, others specific numbers.

In contrast to CF, Inc., the Trenton Division of Health required that the parent-child centers and all the home-visiting programs provide individual-level data to comply with its federal Healthy Start grant. To collect those data, Division of Health staff downloaded information from the two national home-visiting programs' data systems and required that the agencies collect additional information on an occasional basis. The amount of data collected was considerable, but it was only used for federal reports, which were then shared with agencies involved in the efforts.

As the initiative progressed, RWJF increasingly requested information from CF, Inc., about outcomes. When CF, Inc., passed these requests on to the agencies, they struggled to provide the information. Even though the home-visiting programs had sophisticated data systems, they were not configured in a way that allowed agency personnel to easily provide information.

Agencies have limited capacity to handle large amounts of data.

Social service agencies' first priority is to serve clients, which is appropriate. Their interest in analyzing information about their clients may be minimal. Even if the staff, particularly management, has a strong interest in data collection and analysis, that interest may be sporadic and surface primarily when the agency wants to apply for new grants or report on older grants.

Future Efforts to Collect Information

Given the increasing pressures placed on the initiative for outcomes information, CF, Inc., decided to put a community-wide data system in place for the initiative's second phase that will allow agencies to collect the information they need for their own internal quality control and reporting efforts and provide systematic information to CF for its reports. Many of the agencies appear to be interested in having such a system, since analyzing client-level information is generally more important now than it was 10 years ago.

In order to put the system in place, however, data-sharing agreements among agencies will need to be initiated or revised. The system must be useful for agencies in addition to funders. Some level of information standardization (such as using the same categories for race or ethnicity) is probably desirable across agencies. Most important, however: Staff at CF, Inc., and within the various agencies must ensure its use.

Final Thoughts

At the end of its first five years, evidence for CF's effectiveness within the city of Trenton has been mixed. Implementation of programs, such as home-visiting, and childcare and healthcare quality improvement have gone well. The efforts have not yet made much difference in the lives of Trenton residents overall, though they may have made a difference for specific clients served by the initiative. Given the time it takes for community-wide

impacts to become evident and the fact that some of the desired outcomes are only measurable in the long-term, these results were expected. Based on its experiences in reaching Trenton's residents during the first five years, the initiative has made some significant changes to its programs and practices, which the evaluation team will continue to monitor.

Endnotes

1. US Census Bureau. *DataFerrett, Current Population Survey, January-December 2005*. Data downloaded June 4, 2009.

2. *Children's Futures' First Five Years: Lessons and Early Outcomes of a Community Change Initiative* (2008) and *Collaboration and Community Change in the Children's Futures Initiatives* (2008) are available at www.ppv.org.

3. In late 2007, Union Industrial Home for Children changed its name to UIH Family Partners. We use the previous name throughout this report, since that was its formal name during the data-collection period covered in the report.

4. In January 2008, Mercer Street Friends contracted with CF, Inc., to run all home-visiting programs in Trenton, and the remaining centers expanded their center-based group programs. UIH Family Partners left the initiative in 2009.

5. New Jersey Family Health Care Coverage Act, PL 2005, Chapter 156. 2005.

6. Information on the use and interpretation of these scales is available from the Frank Porter Graham Child Development Institute at the University of North Carolina, http://www.fpg.unc.edu/~ECERS/.

7. Chasnoff, Ira J., Richard F. McGourty, Gregory W. Bailey, Ellen Hutchins, Saundra O. Lightfoot, Leslie Lynn Pawson, Cynthia Fahey, Barbara May, Paula Brodie, Larry McCulley and Jan Campbell. 2005. "The 4P's Plus© Screen for Substance Use in Pregnancy: Clinical Application and Outcomes." *Journal of Perinatology*, 25:365–374.

8. US Census Bureau. Sex by age by nativity (Hispanic or Latino): Hispanic or Latino population for Trenton, NJ. Data Set: 2005–2007 American Community Survey 3-Year Estimates. Survey: American Community Survey.

9. Olds, David L., JoAnn Robinson, Ruth O'Brien, Dennis W. Luckey, Lisa M. Pettitt, Charles R. Henderson, Jr., Rosanna K. Ng, Karen L. Sheff, Jon Korfmacher, Susan Hiatt and Ayelet Talmi. 2002. "Home Visiting by Paraprofessionals and by Nurses: A Randomized, Controlled Trial." *Pediatrics*, 110 (3), 486–496. It should be emphasized here that the study that compared paraprofessionals and nurses was conducted on the Nurse-Family Partnership model, and the results indicate that the curriculum was better delivered by nurses. This study does not indicate that nurses are more effective than paraprofessionals in general—just that they were more effective than paraprofessionals in a model originally designed for nurses.

10. Some information provided in the childcare section has been summarized from a previous P/PV report on CF, *Collaboration and Community Change in the Children's Futures Initiative* (2008).

11. Frank Porter Graham Child Development Institute.

12. More information on the High Scope Infant-Toddler Curriculum can be found on the High Scope website: www.highscope.org/Content.asp?ContentId=62.

13. A survey conducted by the New Jersey Association of Child Care Resource and Referral Agencies found in 2001 that the market cost for full-time care for an infant totals $1,682 a month. However, payments to providers for subsidized care are much lower. A CF project director at CCC detailed in a personal communication that the reimbursement rate from July 1, 2004, to June 30, 2005, was $152.20 per week for full-time infant or toddler care in licensed centers, or 39 percent of the market cost.

14. A CDA is a credential provided by the Council for Professional Accreditation that indicates that childcare providers have met specific competency goals with respect to providing children with an environment that "nurtures children's physical, social, emotional and intellectual growth in a child development framework." For more information on the CDA and the competency goals, see www.cdacouncil.org/cda_what.htm.

15. The hospitalization data is available by ZIP code, not by municipality. There are 11 ZIP codes in Mercer County. Of those, only one is completely within Trenton's boundaries and three are primarily within the city's boundaries. The remaining seven are either completely outside the city's boundaries (three) or primarily outside the city's boundaries (four). The comparison, therefore, is between the four ZIP codes that are either wholly or primarily within Trenton's boundaries and the other seven.

16. The state of New Jersey only releases birth data for research purposes when it has been cleaned and geocoded, and the lag time is about three years from the end of the data collection period to the data's release.

17. 2005 data were not available for this report, thus the analysis only covers the first two full years of implementation—another reason we expect modest to no changes.

18. US Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau. 2006. *Evidence of Trends, Risk Factors and Intervention Strategies: Racial and Ethnic Disparities in Infant Mortality. A Report from the Healthy Start National Evaluation.* Washington, DC: US Department of Health and Human Services.

19. The analyses on which this statement is made are not presented in this report.

20. Other medical conditions may be even more important as risks for adverse birth outcomes, but some of them are only identified during pregnancy. Thus, outreach efforts that target women with known medical risks, though important, are not sufficient, because they would not reach women with unidentified medical risks.

21. The figures use three-year running averages, which have the advantage of suppressing year-to-year fluctuations that make it difficult to see long-term trends. Tables presenting the actual yearly figures can be found in Appendix D.

22. Homer, C. J., P. Szilagyi, L. Rodewald, S.R. Bloom, P. Greenspan, S. Yazdgerdi, J.M. Leventhal, D. Finkelstein and J. M. Perrin. 1996. "Does Quality of Care Affect Rates of Hospitalization for Childhood Asthma?" *Pediatrics*, 98, 18–23.

23. Getahun, D., K. Demissie and G. G. Rhoads. 2005. "Recent Trends in Asthma Hospitalization and Mortality in the United States." *Journal of Asthma*, 42(5), 373–378.

24. Szilagyi, Peter G., Andrew W. Dick, Jonathan D. Klein, Laura P. Shone, Jack Zwanziger, Alina Bajorska and H. Lorrie Yoos. 2006. "Improved Asthma Care After Enrollment in the State Children's Health Insurance Program in New York." *Pediatrics*, 117(2), 486–496.

25. Kull, Inger, Catarina Almqvist, Gunnar Lilja, Goran Pershagen and Magnus Wickman. 2004. "Breast-feeding Reduces the Risk of Asthma During the First Four Years of Life." *J Allergy Clin Immunol*, 114, 755–760.

26. Committee on Understanding Premature Birth and Assuring Healthy Outcomes, Board on Health Sciences Policy. Richard E. Behrman. and Adrienne Stith Butler (eds.). 2006. *Preterm Births: Causes, Consequences and Prevention*. Washington, DC: National Academies Press.

27. New Jersey Family Health Care Coverage Act, PL 2005, Chapter 156 (2005).

28. CF awarded 16 strategic grants, including grants to New Jersey Chapter of the American Academy of Pediatrics and Mercer County Community College. For this exercise, we are limiting our interest to the seven grantees we consider major partners in terms of the scope of their activities.

29. Calculations are based on the 2005 fiscal year for each grantee. Years vary for each grantee as shown in the table.

30. CF made 19 innovative practice grants. This discussion is based on the 13 grantees about whom we received complete grant reports.

31. CF made nine capacity-building grants. This discussion is based on the seven grantees about whom we have complete grant reports.

32. Walker, Karen E., Amy Feldman with Margo Campbell. 2008. *Collaboration and Community Change in the Children's Futures Initiative*. Philadelphia, PA: Public/Private Ventures.

33. Beth Gardiner, CCC, personal communication.

34. Walker et al.

35. Connell, James P., Anne C. Kubisch, Lisbeth B. Schorr and Carole H. Weiss (eds.). 1995. *New Approaches to Evaluating Community Initiatives: Concepts, Methods and Contexts*. Roundtable on Comprehensive Community Initiatives for Children and Families. Washington, DC: Aspen Institute.

36. Ibid.

37. The reference category for getting prenatal care during the first trimester comprises mothers who began care after the first trimester or did not receive any care. The reference category for those who did not receive any prenatal care is mothers who began care at any point during their pregnancy.

38. The dichotomous variables of maternal characteristics are coded as one if the factor is present and zero if it is absent.

39. The variable representing Hispanic mothers is excluded from the preterm birth analysis because preliminary analyses indicated that, in contrast to their relationship to prenatal outcomes, there was no relationship between being Hispanic and having a preterm birth. Thus, for these models the reference category includes whites and Hispanics.

40. The reference category for the race and ethnicity variables (black, Hispanic, other race) is white.

41. Medical risk factors include anemia, cardiac disease, acute/chronic lung disease, diabetes, genital herpes, hydramnios/oligohydramnios, hemoglobinopathy, chronic hypertension, pregnancy-related hypertension, eclampsia, incompetent cervix, previous infant 4,000+ grams, previous preterm/small infant, renal disease, Rh sensitization, uterine bleeding or other medical risk factor.

42. Our hypothesis is that being a first-time parent has the potential to offset the presence of a combination of social risks rather than just one.

Appendices

Appendix A
Children's Futures' Theories of Change

A "theory of change" is a set of assumptions and hypotheses that explain why program operators think their activities will lead to improvements in individuals' lives. They are intended to be very specific about the types of outcomes the program hopes to see. Although CF did not create an explicit theory of change for the initiative prior to implementation, there were some well-articulated assumptions about why certain actions were being undertaken, which are presented in this appendix.

As this report has shown, CF worked to improve birth, health and cognitive outcomes for very young children using multiple approaches. Because there were a number of desired outcomes and several ways of achieving them, it is important to understand that there are multiple theories of change operating simultaneously.

At the most general level is the initiative-wide theory of change: If CF introduces or improves the quality of direct services shown to be effective in improving outcomes and facilitates access to and use of those services, then child and family outcomes should improve. Achieving these broad goals is a matter of identifying effective strategies and programs, ensuring staff have the qualifications and skills necessary to deliver them well, and identifying the Trenton residents who are likely to benefit most from the services.

In addition to this general theory of change, the key leaders across the initiative have articulated more specific theories of change pertaining to child health, cognition and other aspects of child well-being.

The final major child outcome toward which CF is working is improved cognitive development. To achieve this broadly inclusive outcome, CF has employed a range of strategies, from improving the quality of childcare to offering parenting programs that encourage parents to engage in stimulating and developmentally appropriate activities with their children. Although cognitive and physical development are intertwined (children with asthma, for example, tend to miss more days of school and have poorer academic records), CF's efforts to improve physical health were not directly related to efforts to improve cognitive development; those relationships are not part of CF's theory of change. In addition, as the diagram shows, in the initiative's first five years there were no formal links between the efforts to improve childcare and the efforts to develop parenting skills. This lack of interconnections has been addressed in the second phase of the initiative.

Figure A.1
Theory of Change, Improved Birth Outcomes

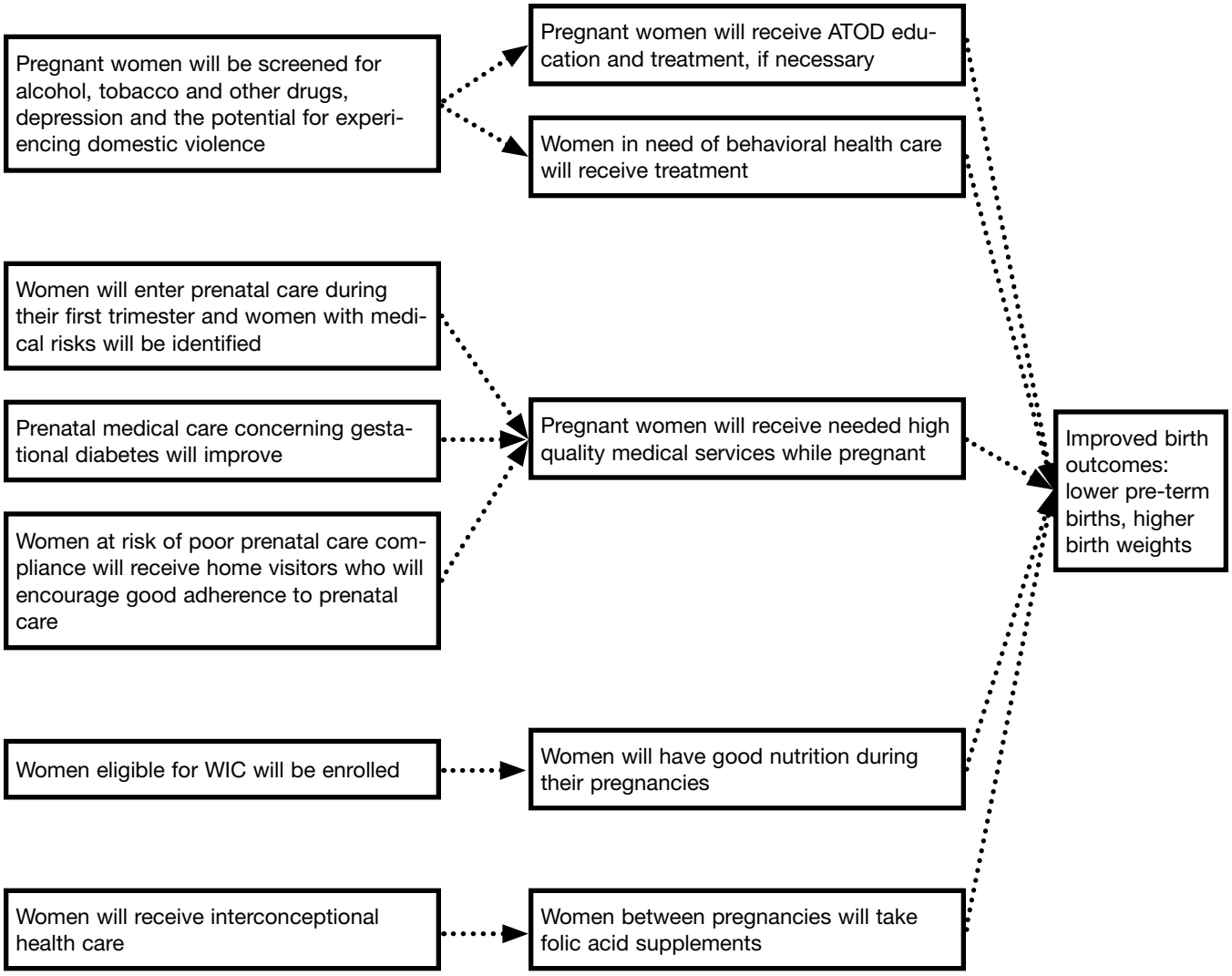
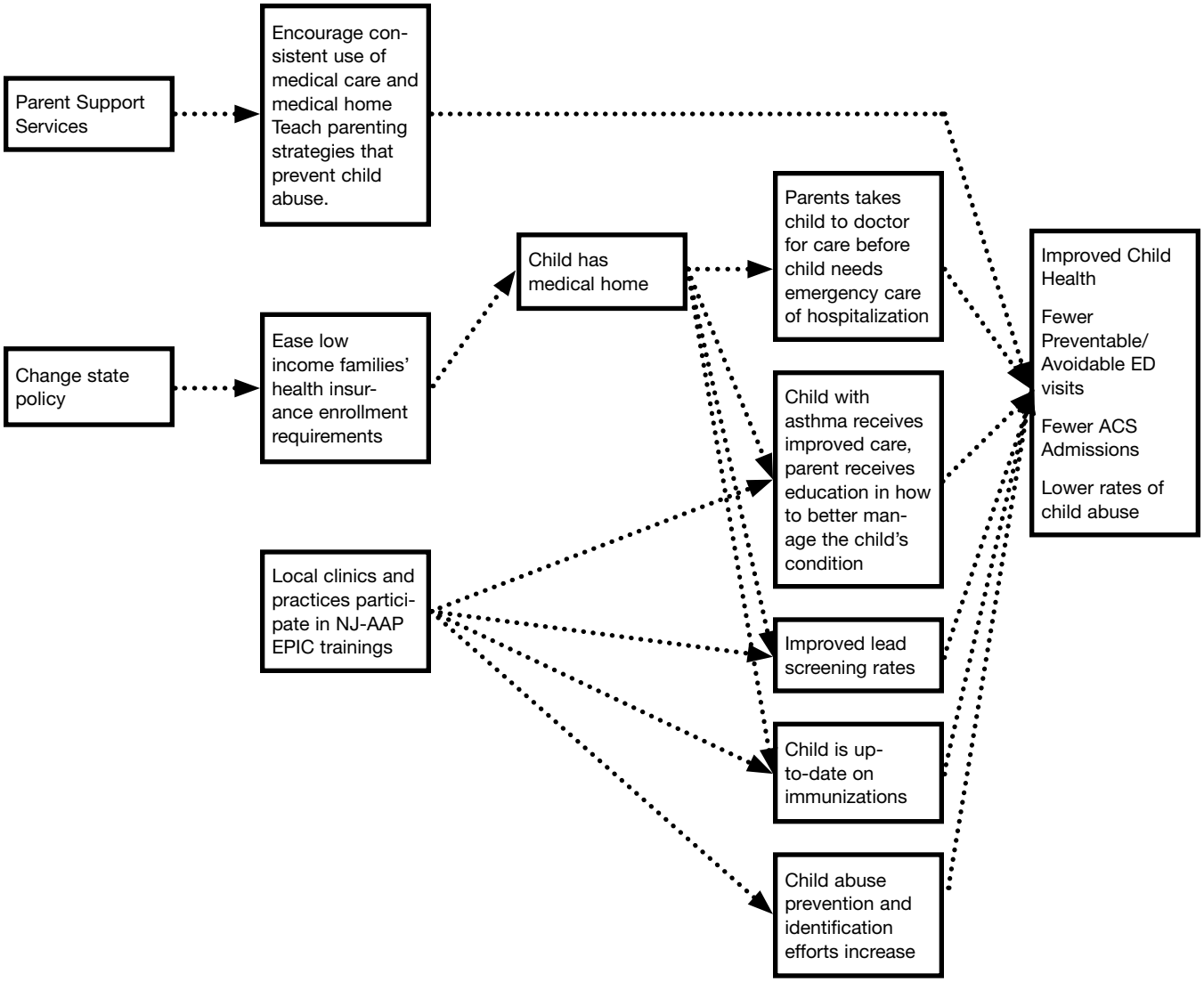
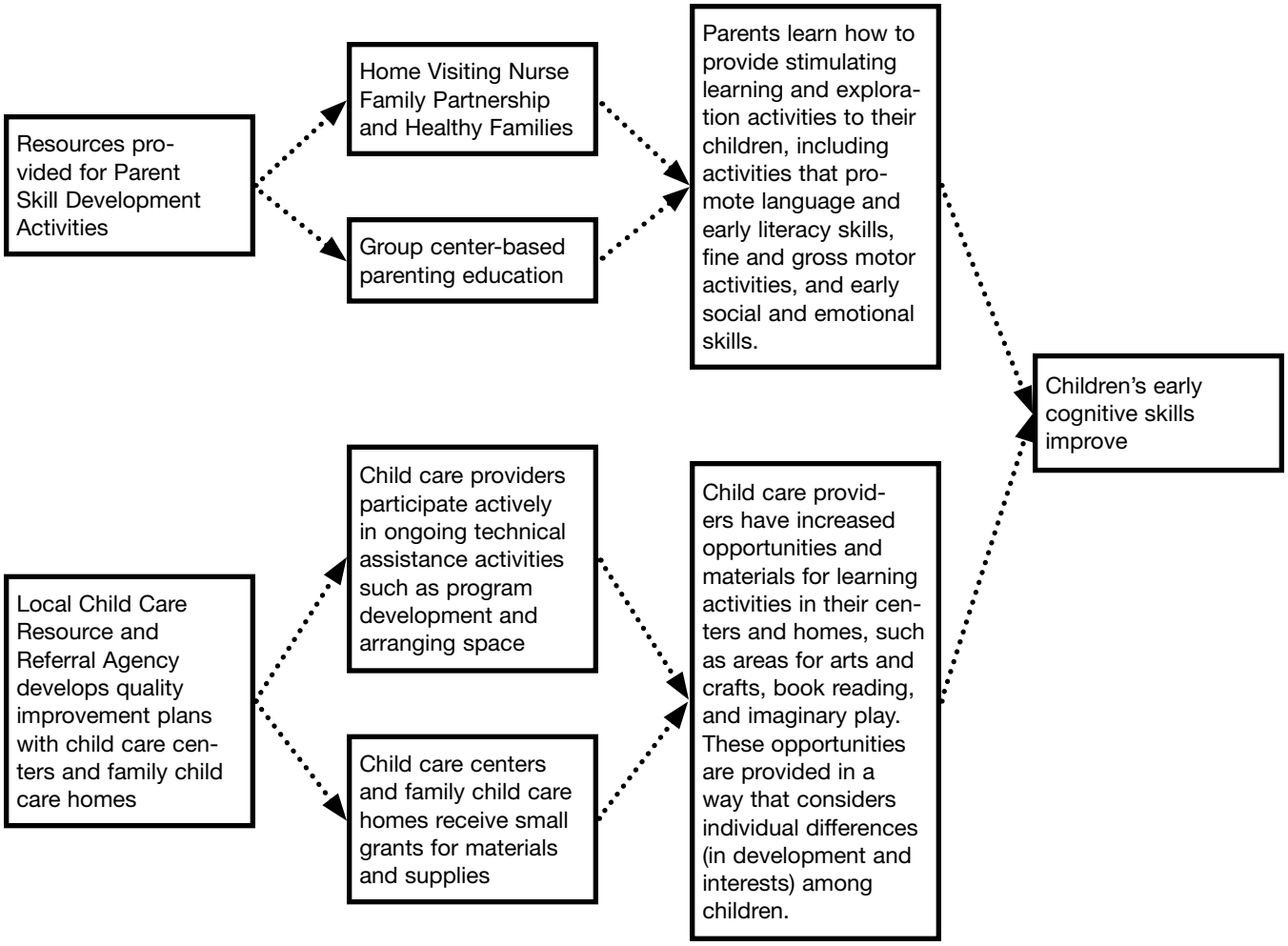


Figure A.2
Theory of Change, Improved Child-Health Outcomes



Key underlying assumptions of these efforts are that lack of access to medical care and knowledge about how to manage children and health (on the part of parents) and education about how better to deliver preventive services (on the part of the practitioner) are the key barriers to ensuring that children receive good primary preventive care.

Figure A.3
Theory of Change, Improved Cognitive Development



Appendix B
Public-Use Birth Data, Sample and Measures, 2001 to 2004

To examine how relationships between risk factors and prenatal and birth outcomes may have changed after the development of CF, several multivariate analyses were performed using data from the New Jersey Center for Health Statistics. Analyses are based on public-use birth data from 2001 to 2004. The public-use birth dataset contains information on all live births to women who reside in New Jersey, as well as these mothers' demographic information and medical history. This dataset enabled us to analyze change over time at the individual-birth level rather than at the city or county level, allowing for a much more detailed analysis. We used birth data from three New Jersey cities in this analysis. In addition to Trenton, where CF was implemented, we also included Camden and Newark. The two additional cities were chosen based on their similarity to Trenton—they both have large populations of minority and low-income residents. Table B.1 describes the percentage of Trenton mothers with particular characteristics and the change in those percentages between 2001 and 2004.

Birth data from 2001 to 2004 were pooled into one dataset for analysis. The total sample for all three cities across all four years includes 31,494 births (an average of 7,874 per year). The breakdown by city is as follows:

- Trenton: 5,941 births (an average of 1,485 per year)
- Camden: 6,697 births (an average of 1,674 per year)
- Newark: 18,856 births (an average of 4,714 per year)

We wanted to examine whether evidence existed that CF had an effect on four outcomes for mothers: three prenatal outcomes about the level of care mothers received during their pregnancies and one birth outcome. The three prenatal outcomes were: the number of prenatal visits mothers received, beginning prenatal care during their first trimester and not receiving any prenatal care.[37] The birth outcome examined was whether the birth was preterm; this was coded one if the birth was preterm and zero if it was not (the reference category).

We examine the impact of several maternal characteristics on these four outcomes. All are binary measures[38] (meaning that the characteristic is either present or absent—for example, one can either be a parent or not, but it is not possible to be half a parent). The measures include the following maternal characteristics: first-time parent, adolescent (under 20 years of age), single, black, Hispanic[39], other race[40], and at least one medical risk factor.[41] In the preterm birth analysis we also include a measure for whether the mother began prenatal care late (e.g., the third trimester or later, or not at all.

In addition to the individual risk factors listed above, we ran the preterm analysis using risk levels to explore their relationship with preterm birth. The rationale for doing so was to determine whether combinations of risk factors increased the overall risk for preterm birth beyond the effect due to each individual factor. Women were divided into three risk levels: low, medium and high. Categorization was based on three criteria: the number of social risks (being adolescent, single, black, other race and beginning prenatal care late), whether they have a medical risk and whether they are first-time parents. Women were considered low-risk if they have no medical risk and were either a previous parent with zero to one social risks or a first-time parent with zero to three social risks.[42] Women at medium risk also have no medical risk, and either have two to four social risks as a previous parent or have four social risks as a first-time parent. Finally, high-risk mothers have at least one medical risk and any other combination of characteristics. Medium-risk was left out of the model as the reference category. This allowed us to compare the likelihood of preterm birth for women with and without medical risks as well as to compare this likelihood for women with different levels of social risk.

Analyses also included control variables for years. Dummy variables were constructed for each year in the analysis. The year 2001 was used as the reference category in these analyses and was therefore excluded from the model. Using 2001, the first year of data included in the sample, as the reference category simplifies interpretation of the results by setting all impacts by year in relation to their level before the start of CF.

Finally, analyses included a control variable for city. A dummy variable was created for Trenton. Camden and Newark jointly serve as the reference category. The coefficients on the Trenton variable can therefore be interpreted as a comparison to the effect in Camden and Newark.

Tables B.2 through B.4 present descriptive statistics on these core risk factors for each city, broken down by year.

Table B.1
Change in Percentage of Trenton Mothers with Selected Characteristics, 2001 to 2004

Characteristic	2001 percentage	2004 percentage	Change
Medical risk	41.4	44.4	+3.0%
First-time parent	37.3	39.2	+1.9%
Adolescent	20.2	17.2	-3.0%
Black	56.3	52.2	-4.1%
Hispanic	21.5	25.4	+3.9%
Other race	10.3	12.6	+2.3%
Single	70.7	71.7	+1.0%

Table B.2
Percentage of Trenton Mothers with Selected Risk Factors, by Year

Risk Factor	Year			
	2001	2002	2003	2004
Black	56.3	55.5	54.8	52.2
Hispanic	21.5	23.0	22.9	25.4
Other race	10.3	11.1	10.6	12.6
Adolescent (under 20 years)	20.2	17.4	16.7	17.2
Single	70.7	71.7	71.4	71.7
Late prenatal care (month 7 or later)	8.8	9.0	10.0	9.6
Health risk (at least one)	41.4	45.3	49.3	44.4
Low risk	39.7	37.8	35.7	38.4
Medium risk	18.5	16.7	15.0	17.2
High risk	41.8	45.5	49.3	44.4

Table B.3
Percentage of Camden Mothers with Selected Risk Factors, by Year

Risk Factor	Year			
	2001	2002	2003	2004
Black	50.0	51.9	48.4	48.7
Hispanic	41.7	40.7	44.3	45.6
Other race	4.0	2.6	3.2	2.6
Adolescent (under 20 years)	26.1	24.2	22.8	22.7
Single	80.4	81.0	79.8	78.7
Late prenatal care (month 7 or later)	9.6	8.2	9.4	11.0
Health risk (at least one)	52.3	47.0	45.6	47.6
Low risk	31.2	35.8	37.3	35.7
Medium risk	13.4	16.2	16.4	16.4
High risk	55.5	48.0	46.3	47.8

Table B.4
Percentage of Newark Mothers with Selected Risk Factors, by Year

Risk Factor	Year			
	2001	2002	2003	2004
Black	55.1	54.6	54.3	53.7
Hispanic	39.9	34.0	34.0	34.8
Other race	2.4	2.3	2.5	2.4
Adolescent (under 20 years)	16.3	14.6	14.4	13.5
Single	70.9	69.0	68.8	67.9
Late prenatal care (month 7 or later)	15.3	14.9	13.7	12.9
Health risk (at least one)	43.6	45.7	43.4	45.8
Low risk	40.2	39.1	40.5	40.0
Medium risk	14.3	15.0	16.0	14.1
High risk	45.5	45.9	43.5	45.9

Appendix C
Analytic Strategies

Prenatal Care

As stated in Appendix B our prenatal care analysis focuses on three outcomes: a count measure of prenatal visits, and two categorical variables representing mothers who began prenatal care during their first trimester and mothers who received no prenatal care. Models were run separately for each city to allow for the comparison of temporal trends. Because the outcomes are different types of variables (count vs. binary), they require slightly different models. The former is estimated using negative binomial regression, a variation of Poisson regression that corrects for overdispersion. Overdispersion occurs when the variance of the dependent variable is not equal to the mean, and it violates an assumption of the Poisson model. Negative binomial regression corrects for this problem with the inclusion of a disturbance term. The model for number of prenatal visits takes the following form:

$$\log \lambda = \beta_0 + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 (y2002) + \beta_9 (y2003) + \beta_{10} (y2004) + \beta_{11} (\text{Trenton}) + \varepsilon$$

where λ is the expected value (mean) of y

y is the number of prenatal visits

β_0 is the intercept

β_k are the coefficients

x_1 through x_7 represent the following maternal factors: one or more medical risk factor, first-time parent, adolescent, single, black, Hispanic, other race

y2002, y2003, and y2004 are dummy variables for each year

Trenton is a dummy variable for city

and ε is the disturbance term

Interpretation of coefficients is similar to that in standard logistic regression. They are transformed using the function $100\ (e^{\beta}-1)$, and the resulting values indicate the percent increase or decrease in number of prenatal visits for mothers with each characteristic compared with those without it.

The models predicting if a mother will begin prenatal care during her first trimester and if she will receive no prenatal care are estimated using binary logistic regression:

$$\log [p/(1-p)] = a + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \beta_5 x_5 + \beta_6 x_6 + \beta_7 x_7 + \beta_8 (y2002) + \beta_9 (y2003) + \beta_{10} (y2004) + \beta_{11} (\text{Trenton})$$

where p is the probability that y=1

y is the outcome variable (beginning prenatal care during the first trimester or not receiving prenatal care)

a is the intercept

βk are the coefficients

x1 through x7 represent the following maternal factors: one or more medical risk factor, first-time parent, adolescent, single, black, Hispanic, other race

y2002, y2003, y2004 are dummy variables for each year

and Trenton is a dummy variable for city

The model predicts the log-odds of beginning prenatal during the first trimester vs. after the first trimester (or having no prenatal care vs. receiving prenatal care), but an alternative, and easier, interpretation can be obtained by exponentiating the coefficients (e^{β}). This transforms them into odds ratios and allows for the following interpretation: The odds of the outcome are X higher (or lower) for women with the factor compared with women without it.

To further explore the relationship between city and birth outcomes, modified versions of these models were also analyzed. They are the same as those listed above except that they include interaction terms for each city by year. Interaction terms were included to determine if any changes to the dependent variable over time in Trenton were more or less pronounced compared to the other two cities. Yearly odds ratios were calculated for city from the main effect and interaction term coefficients. The formula for doing this is:

$$OR_{T02} = e^{(\beta T + \beta T02)}$$

$$OR_{T03} = e^{(\beta T + \beta T03)}$$

$$OR_{T04} = e^{(\beta T + \beta T04)}$$

where OR_T is the odds ratio for a Trenton mother in a given year

B_T is the main coefficient for a Trenton mother

and β_{T02}, β_{T03}, β_{T04} are coefficients for the interaction terms Trenton*2002, Trenton*2003, Trenton*2004

Birth Outcomes

The analytical technique employed in the birth outcome models is binary logistic regression. Again, regressions were run separately for each city to allow for a comparison of period effects across cities.

This analysis consists of two main models. In the first model, risk factors were tested separately. The model takes the following form:

$$\log [(p/1\text{-}p)]=a + \beta_1x_1 + \beta x_2 + \beta_3x_3 + \beta_4x_4 + \beta_5x_5 + + \beta_6x_6 + \beta_7x_7 + \beta_8(y2002) + \beta_9(y2003) + \beta_{10}(y2004) + \beta_{11}(\text{Trenton})$$

where p is the probability that y=1

y is the outcome variable (preterm birth)

a is the intercept

β_k are the coefficients

x_1 through x_7 represent the following maternal factors: one or more medical risk factor, first-time parent, adolescent, single, black, Hispanic, other race

y2002, y2003, y2004 are dummy variables for each year

and Trenton is a dummy variable for city

Again, the estimates can be transformed into odds ratios with the function e^{β}, which is how we presented the data in this report.

The second model is similar to the first except that individual maternal characteristics are replaced with risk levels:

$$\log [p/(1\text{-}p)]=a + \beta_1x_1 + \beta_2x_2 + \beta_3(y2002) + \beta_4(y2003) + \beta_5(y2004) + \beta_5(\text{Trenton})$$

where p is the probability that y=1

y is the outcome variable (preterm birth)

a is the intercept

β_k are the coefficients

x_k are risk levels low and high

y2002, y2003, y2004 are dummy variables for each year

and Trenton is a dummy variable for city

The medium risk level is left out as the reference category so that we could examine the effect of both quantity of social risk factors and presence of a medical risk factor on birth outcomes.

Similar to the prenatal care analysis, alternative versions of these models were also run. In the alternative versions, interaction terms between Trenton and years were included to examine how the impact of city changed over time.

Full results tables for prenatal care and birth outcomes analyses are presented in the following pages.

Table C.1
Negative Binomial Regression of Number of Prenatal Visits on Maternal Factors, City and Year Effects

Variable[a]	Model 1		Model 2	
	β[b]	$100(e^{\beta}-1)$	β	$100(e^{\beta}-1)$
One or more medical risk factor (No medical risk factors)	-0.0044 (.0054)	-0.44	-0.0045 (.0054)	-0.45
First-time parent (Previous parent)	****0.1452 (.006)	15.63	****0.1452 (.006)	15.63
Adolescent mother (20 years of age or older)	****-0.144 (.008)	-13.41	****-0.144 (.008)	-13.41
Black mother (White mother)	****-0.0789 (.0099)	-7.59	****-0.0789 (.0099)	-7.59
Hispanic mother (White mother)	**0.0301 (.0101)	3.06	**0.0301 (.0101)	3.06
Other race mother (White mother)	-0.0219 (.0154)	-2.17	-0.022 (.0154)	-2.18
Single mother (Married mother)	****-0.1258 (.0061)	-11.82	****-0.1259 (.0061)	-11.83
Preterm birth (Full-term birth)	****-0.303 (.0085)	-26.14	****-0.3031 (.0085)	-26.15
Trenton (Camden and Newark)	****0.1891 (.0067)	20.82	****0.1803 (.013)	N/A
2002 (2001)	-0.0065 (.0076)	-0.65	-0.0094 (.0086)	N/A
2003 (2001)	*-0.0157 (.0075)	-1.56	*-0.018 (.0085)	N/A
2004 (2001)	****-0.0388 (.0076)	-3.81	****-0.0413 (.0085)	N/A
Trenton*2002	X	X	0.0133 (.0184)	N/A
Trenton*2003	X	X	0.0107 (.0185)	N/A
Trenton*2004	X	X	0.0114 (.0184)	N/A
N	29,991		29,991	

Source: State of New Jersey Department of Human Services, proprietary data for this study.

a Reference categories are listed in parentheses.

b Values represent coefficients, with standard errors in parentheses.

Table C.2
Percent Increase/Decrease in Number of Prenatal Visits for Trenton Mothers Relative to Camden and Newark Mothers, by Year

	2001	2002	2003	2004
Trenton	1.20	1.21	1.21	1.21

Table C.3

Binary Logistic Regression of Beginning Care During the First Trimester on Maternal Risk Factors, City and Year Effects

Variable[a]	Model 1		Model 2	
	β[b]	Odds ratio	β	Odds ratio
One or more medical risk factor (No medical risk factors)	**-0.0777 (.0241)	0.92	**-0.0762 (.0241)	0.93
First-time parent (Previous parent)	****0.4593 (.0276)	1.58	****0.4605 (.0276)	1.58
Adolescent mother (20 years of age or older)	****-0.631 (.0349)	0.53	****-0.632 (.0349)	0.53
Black mother (White mother)	****-0.5241 (.0485)	0.59	****-0.5249 (.0485)	0.59
Hispanic mother (White mother)	****-0.279 (.0498)	0.76	****-0.2794 (.0498)	0.76
Other race mother (White mother)	****-0.6197 (.0735)	0.54	****-0.6186 (.0735)	0.54
Single mother (Married mother)	****-0.5863 (.0287)	0.56	****-0.5856 (.0287)	0.56
Trenton (Camden and Newark)	****0.3275 (.0312)	1.39	****0.4311 (.0617)	???
2002 (2001)	-0.00794 (.0341)	0.99	-0.00038 (.0379)	N/A
2003 (2001)	-0.0204 (.0338)	0.98	0.0151 (.0375)	N/A
2004 (2001)	*-0.0686 (.0338)	0.93	-0.0331 (.0375)	N/A
Trenton*2002	X	X	-0.0371 (.087)	N/A
Trenton*2003	X	X	*-0.1904 (.0871)	N/A
Trenton*2004	X	X	*-0.1867 (.0861)	N/A
N	30,205		30,205	

Source: State of New Jersey Department of Human Services, proprietary data for this study.

a Reference categories are listed in parentheses.

b Values represent coefficients, with standard errors in parentheses.

Table C.4

Odds Ratios for Beginning Care During the First Trimester for Trenton Mothers Relative to Camden and Newark Mothers, by Year

	2001	2002	2003	2004
Trenton	1.54	1.48	1.27	1.28

Table C.5
Binary Logistic Regression of No Prenatal Care on Maternal Risk, City and Year Effects

Variable[a]	Model 1		Model 2	
	β[b]	Odds ratio	β	Odds ratio
One or more medical risk factor (No medical risk factors)	****0.3701 (.0596)	1.45	****0.3675 (.0597)	1.44
First-time parent (Previous parent)	****-1.3231 (.0869)	0.27	****-1.3245 (.087)	0.27
Adolescent mother (20 years of age or older)	0.0895 (.0928)	1.09	0.0912 (.0928)	1.10
Black mother (White mother)	0.2087 (.1262)	1.23	0.2091 (.1263)	1.23
Hispanic mother (White mother)	****-0.9061 (.1421)	0.40	****-0.9068 (.1422)	0.40
Other race mother (White mother)	***-0.951 (.2881)	0.39	***-0.9535 (.2881)	0.38
Single mother (Married mother)	****1.4216 (.1031)	4.14	****1.4198 (.1031)	4.14
Trenton (Camden and Newark)	****-0.5196 (0.0865)	0.60	****-0.766 (.177)	N/A
2002 (2001)	-0.1304 (.082)	0.88	-0.1706 (.0881)	N/A
2003 (2001)	-0.138 (.0816)	0.87	*-0.1819 (.0875)	N/A
2004 (2001)	*-0.1639 (.0825)	0.85	*-0.2099 (.0884)	N/A
Trenton*2002	X	X	0.3058 (.2436)	N/A
Trenton*2003	X	X	0.3366 (.2446)	N/A
Trenton*2004	X	X	0.3536 (.2471)	N/A
N	30,205		30,205	

Source: State of New Jersey Department of Human Services, proprietary data for this study.

a Reference categories are listed in parentheses.

b Values represent coefficients, with standard errors in parentheses.

Table C.6
Odds Ratios for No Prenatal Care for Trenton Mothers Relative to Camden and Newark Mothers, by Year

	2001	2002	2003	2004
Trenton	0.46	0.63	0.65	0.66

Table C.7
Logistic Regressions of Preterm Birth on Maternal Characteristics, City and Year Effects

Variable[a]	Model 1		Model 2	
	β[b]	Odds ratio	β	Odds ratio
One or more medical risk factor (No medical risk factors)	****0.6576 (.0349)	1.93	****0.6555 (.0349)	1.93
Adolescent mother (20 years of age or older)	-0.0885 (.051)	0.92	-0.0871 (.051)	0.92
Single mother (Married mother)	****0.2651 (.0424)	1.30	****0.2636 (.0424)	1.30
Late prenatal care (Before third trimester)	****0.6859 (.0447)	1.99	****0.6847 (.0447)	1.98
First-time parent (Previous parent)	****-0.1871 (.04)	0.83	****-0.1888 (.04)	0.83
Black mother (White/Hispanic mother)	****0.4401 (.0375)	1.55	****0.4407 (.0375)	1.55
Other race mother (White/Hispanic mother)	0.0886 (.0986)	1.09	0.0857 (.0986)	1.09
Trenton (Camden and Newark)	-0.0497 (.0444)	0.95	**-0.2389 (.0917)	N/A
2002 (2001)	-0.0641 (.0491)	0.94	-0.0938 (.0543)	N/A
2003 (2001)	0.0224 (.0482)	1.02	-0.0317 (.0533)	N/A
2004 (2001)	0.0128 (.0482)	1.01	-0.0398 (.0533)	N/A
Trenton*2002	X	X	0.1631 (.128)	N/A
Trenton*2003	X	X	*0.2934 (.1249)	N/A
Trenton*2004	X	X	*0.2845 (.1248)	N/A
N	30,160		30,160	

Source: State of New Jersey Department of Human Services, proprietary data for this study.

a Reference categories are listed in parentheses.

b Values represent coefficients, with standard errors in parentheses.

Table C.8
Odds Ratios for Preterm Birth for Trenton Mothers Relative to Camden and Newark Mothers, by Year, from Maternal Characteristics Regression

	2001	2002	2003	2004
Trenton	0.79	0.93	1.06	1.05

Should this just be the β -pm

Table C.9
Logistic Regressions of Preterm Birth on Risk Levels, City and Year Effects

Variablea	Model 1		Model 2	
	β[b]	Odds ratio	β[b]	Odds ratio
Low-risk mother (Medium-risk mother)	****-0.7477 (.0537)	0.47	****-0.7492 (.0537)	0.47
High-risk mother (Medium-risk mother)	****0.2833 (.0464)	1.33	****0.2796 (.0464)	1.32
Trenton (Camden and Newark)	*-0.087 (.0432)	0.92	***-0.3061 (.0895)	N/A
2002 (2001)	*-0.096 (.0478)	0.91	*-0.1303 (.0526)	N/A
2003 (2001)	-0.0165 (.0468)	0.98	-0.0805 (.0517)	N/A
2004 (2001)	-0.0393 (.0469)	0.96	-0.0951 (.0518)	N/A
Trenton*2002	X	X	0.1966 (.126)	N/A
Trenton*2003	X	X	**0.3565 (.1227)	N/A
Trenton*2004	X	X	*0.3117 (.123)	N/A
N	30,511		30,511	

Source: State of New Jersey Department of Human Services, proprietary data for this study.

a Reference categories are listed in parentheses.

b Values represent coefficients, with standard errors in parentheses.

Table C.10
Odds Ratios for Preterm Birth for Trenton Mothers Relative to Camden and Newark Mothers, by Year, from Risk Level Regression

	2001	2002	2003	2004
Trenton	0.74	0.9	1.05	1.24

Appendix D
Health Data Cluster Analysis

To identify cities for the comparisons of hospital discharge and birth data, John Billings and his colleagues at the Robert F. Wagner School of Public Service at New York University conducted a cluster analysis using census data for cities in New Jersey, New York, Michigan and California. These four states were selected because hospitalization data were available as a result of other projects currently underway by Professor Billings.

Variables used in the cluster analysis

- Total population (this variable was entered in the algorithm twice to double its weight),
- Percentage of the population 25 and over with educational attainment less than or equal to high school,
- Percentage of the total population with foreign nativity,
- Percentage of the civilian labor force unemployed,
- Percentage of the population (for whom poverty status is determined) who are below poverty,
- Housing vacancy rate,
- Percentage of home ownership,
- Percentage of employed civilian labor force in manufacturing industry and
- Percentage of employed civilian labor force in public administration/government industry.

Using these criteria, no California cities were identified as similar to Trenton. Three cities in Michigan were identified (Detroit, Kalamazoo and Flint), but we did not present this information, primarily because the comparisons between Trenton and comparable New Jersey and New York cities looked very similar to those between Trenton and the Michigan cities. The additional information did not add appreciably to the findings. Also, the Michigan data were available only through 2003, compared with 2004 for New Jersey and New York.

The results of the cluster analysis (excluding California) are presented in Tables D.1 and D.2 below.

Table D.1
Demographic Characteristics of Comparison Cities Identified in Cluster Analysis

	Demographic Characteristics					
	Total Population	**Percentage of Households with Incomes Less than $15,000/year**	**Percentage White**	**Percentage Black**	**Percentage Hispanic**	**Percentage Other**
Camden, NJ	77,422	29.8%	6.6%	49.5%	40.1%	3.7%
Newark, NJ	271,895	23.0%	15.9%	51.7%	30.1%	2.3%
Trenton, NJ	87,515	15.3%	27.4%	49.4%	21.2%	2.0%
Albany, NY	95,398	17.0%	62.1%	26.8%	6.1%	5.0%
Buffalo, NY	299,558	28.0%	52.8%	36.3%	8.0%	2.9%
Rochester, NY	256,774	22.3%	49.4%	34.4%	12.3%	3.9%
Syracuse, NY	142,844	26.5%	61.4%	26.5%	6.0%	6.1%

Table D.1 *Continued*
Demographic Characteristics of Comparison Cities Identified in Cluster Analysis

	Demographic Characteristics							
	Percentage Foreign-Born	**Percentage with Less than High School Education**	**Percentage Unemployed**	**Percentage Living in Poverty**	**Vacancy Rate**	**Percentage Who Own Home**	**Percentage Employed in Manufacturing**	**Percentage Employed in Government**
Camden, NJ	8.9%	77.6%	15.9%	35.5%	18.7%	46.1%	15.1%	5.2%
Newark, NJ	24.1%	72.5%	16.1%	28.4%	8.6%	23.8%	12.9%	4.7%
Trenton, NJ	14.1%	69.6%	10.5%	21.1%	12.9%	45.5%	9.2%	13.4%
Albany, NY	8.6%	43.2%	12.7%	21.7%	9.9%	37.6%	4.0%	15.3%
Buffalo, NY	4.4%	54.5%	12.5%	26.6%	15.5%	43.5%	13.1%	5.3%
Rochester, NY	7.3%	55.6%	10.2%	25.9%	10.6%	40.2%	18.2%	2.8%
Syracuse, NY	7.6%	52.9%	9.3%	27.3%	12.5%	40.3%	11.3%	3.6%

Appendix E
Total Revenues of CF Partners by Year

The following tables present the total revenues of CF's partners by grant award type (strategic grant, innovative approaches or capacity-building) for fiscal years in which data were available. Wherever possible, we used the most recent year for which the data were available.

Table E.1
Total Revenues of Strategic Grant Award Recipients

Agency	Total Revenues	Fiscal Year
St. Francis Medical Center	$110,449,810	2003
Catholic Charities	$35,700,000	2004
Children's Home Society	$12,380,908	2004
Mercer Street Friends	$11,500,000	2003
Greater Trenton Behavioral HealthCare	$7,849,500	2004
Child Care Connection	$2,350,000	2005
Union Industrial Home	$2,114,952	2004
Average	**$26,049,310**	
Median	**$11,500,000**	

Table E.2
Total Revenues of Innovative Approaches Award Recipients

Agency	Total Revenues	Fiscal Year
Trenton Public Schools	$48,700,000	2004
First-Book Mercer	$33,722,546	2001
Henry J. Austin	$8,343,959	2004
HomeFront	$3,976,320	2004
March of Dimes	$2,438,839	2004
Womanspace	$2,438,839	2004
Prevent Child Abuse	$2,192,724	2004
New Horizons	$2,066,000	2003
Mill Hill	$2,049,440	2002
Support Center of Trenton	$1,596,590	2004
Trenton Community Music	$390,154	2004
Campfire USA	$297,293	2003
Coalition of Infant/Toddler Ed. -2003	$92,288	2004
Average	**$8,331,153**	
Median	**2,192,724**	

Table E.3
Total Revenues of Capacity-Building Award Recipients

Agency	Total Revenues	Fiscal Year
Trenton Head Start	$4,432,757	2002
Thomas Edison State College	$600,000	2002
Interfaith Caregivers	$146,252	2001
Princeton Deliverance	$132,569	2003
True Servant	$105,544	2000
Average	**$1,083,424**	
Median	**146,252**	

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