Evaluation of a Collaborative Community-Based Child Maltreatment Prevention Initiative

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In recent years, there has been a growing awareness that reducing the child maltreatment rate in a community requires more than just a loose collection of individual interventions. Factors that influence maltreatment are varied and complex. The ecological model (Belsky, 1993; Belsky & Jaffee, 2006; Bronfenbrenner & Morris, 2006) posits a reciprocal interaction of multiple spheres of influence on parenting behaviors, including child maltreatment. Factors at the child, family, community, and societal levels all interact, either accumulating or ameliorating family risk for maltreatment. To alter community rates of child maltreatment, interventions must address risk and protective factors at all levels of the system.

At the broader societal or systems level, lack of coordination among social service agencies may result in disjointed services that are hard

to access, difficult to navigate, and inconsistent in their messages (Melton, Thompson, & Small, 2002). Providers may operate in isolation, with multiple agencies providing overlapping services to the same families, and none seeing the full picture of family challenges. This disarray can increase the stress levels of families struggling to obtain piecemeal services from disparate locations, and can hinder the receipt of effective interventions that may prevent maltreatment.

At the community level, poor social support networks result in social isolation for families, reducing opportunities for respite care and reciprocal monitoring and feedback on parenting behaviors (Daro, 1998; Kotch et al., 1997). Isolated parents may lack the resources they need to remove themselves from volatile parent-child interactions and learn alternate forms of discipline. Similarly, social disorder and low collective efficacy (e.g., community activism, willingness to act for one another's benefit) are associated with decreased social engagement and increased stress, which in turn can negatively influence parent-child interactions (Sampson, Morenoff, & Gannon-Rowley, 2002).

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At the family level, stressors can accumulate to further maltreatment risk. Poverty, intimate partner violence, and marital stress may all contribute to an increased risk for child abuse and neglect (Renner & Slack, 2006; Sidebotham & Heron, 2006).

At the individual level, characteristics of both parents and children may increase child maltreatment risk. Parent risk factors include young age (e.g., Brown, Cohen, Johnson, & Salzinger, 1998); history of childhood maltreatment (e.g., Egeland, 1993); history of psychiatric concerns, including substance abuse (e.g., Chaffin, Kelleher, & Hollenberg, 1996); and negative attributions about child intentions (Bugental et al., 2002). Children with medical concerns, including preterm delivery and developmental disabilities, are also at increased risk for maltreatment, as are children with behavioral and emotional challenges (Bugental & Happaney, 2004).

Prevention efforts at any of these levels may diminish maltreatment risk. In an effort to substantially reduce communitywide maltreatment, we, the implementers of the Durham Family Initiative (DFI), sought to target interventions to simultaneously address risk at all levels of the system.

The DFI is a community-level child maltreatment prevention initiative targeting early parenting through a comprehensive approach that addresses multiple levels of the social ecology. Since 2002, we have used a four-part plan for a preventive system of care in Durham, North Carolina. First, community leaders and agency directors have been engaged to collaboratively align and enhance services for at-risk families. Agency partners include private and public health systems, public mental health agencies, child protection agencies, elected and appointed government officials, and nonprofit providers of parenting and family preventive services. Second, social capital has been promoted in high-risk neighborhoods to build the social norms and trust necessary to cultivate collective responsibility for protecting children. Networks of formal and informal support for families with infants and young children have been developed or strengthened (e.g., volunteer mentors and parent support through

neighborhood residents and faith communities). Third, screening and referral mechanisms have been enhanced for high-risk groups (e.g., low-income pregnant women and unsubstantiated child welfare cases). Fourth, evidence-based professional services have been directed to high-risk families and promising practices have been tested through randomized trials. This article describes the DFI and its initial outcomes for child maltreatment prevention.

Durham, North Carolina: The Context

Durham is a growing community of 263,000 people, encompassing a major university and world-class medical center as well as an impoverished urban core. An estimated 16% of Durham residents live below the poverty line. The Durham population is predominantly White and African American, but the Latino population has grown rapidly over the last decade, currently estimated at 12.3%.

With generous funding by The Duke Endowment, Durham was targeted for comprehensive maltreatment prevention efforts because of its high rates of reported child abuse and neglect. In 2002, prior to the start of the DFI, Durham's official child maltreatment rate was 56 per 1,000 children (North Carolina Child Advocacy Institute, 2002), in contrast to North Carolina's maltreatment rate of 19 per 1,000 children and the national rate of 12 per 1,000 children (U.S. Department of Health and Human Services, 2001). With the initiation of the DFI, we stated a goal to reduce the rate of child maltreatment in Durham by 50% over 10 years. With support of funders, we elected to focus prevention efforts on early childhood from birth to 6 years. The DFI began operations on July 1, 2002.

DFI: The Model

Drawing on system-of-care principles, which have been central to service reform for high-risk children and families (Hodges, Ferreira, Israel, & Mazza, 2010), we developed a comprehensive preventive system of care (Dodge et al., 2004; Tolan & Dodge, 2005) aimed at lowering the communitywide maltreatment rate for children aged 0-6. Tenets of this approach include services that are strengths-based, child-centered, family-focused, community-based, and responsive to cultural differences. Moreover, a preventive system of care incorporates a comprehensive array of services that can provide coordinated support in the least restrictive environment appropriate, with wraparound services to support generalization of treatment successes to everyday life.

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The use of child and family teams is a core component, allowing families to be active participants in case planning. Families can invite informal and formal support persons to attend team planning meetings, and act as full partners in identifying their own strengths, needs, and treatment goals. These comprehensive planning meetings help avoid overlap or conflict between and among the goals and services of multiple agencies, and aid in a more seamless provision of family support.

Systems-Level Intervention

For child and family teams to succeed, agencies must have the capacity to collaborate effectively. This collaboration requires that providers and administrators from multiple agencies work to reach philosophical and procedural consensus. For the DFI, one essential component at the systems level has been the creation of

collaborative bodies at different levels of authority that span the public and private agencies. These bodies include the Durham Directors, the System of Care Council, and the Community Collaborative.

- The Durham Directors group comprises the key decision makers from local agencies. At the behest of and staffed by DFI staff members, the group, including agency directors from child protective services, the juvenile justice system, public schools, public health agencies, courts, mental health agencies, and county government, met and signed a memorandum of agreement in August 2002 that endorsed a system-of-care approach to service delivery for Durham children and families. The Durham Directors have since met monthly to solve problems, collaborate, and assert leadership in policy and senior-management concerns related to Durham's system of care.

- A second-level group, the System of Care Council, comprises operational managers from each of the previously named agencies. This group holds the responsibility for effectively implementing the system of care. They meet monthly to address operational concerns and develop procedures to ensure the successful implementation of the system of care, both within their organizations and in the community.

- Finally, the Durham Community Collaborative is a diverse group of individuals (including service professionals, advocates, and citizens) whose purpose is to work together as full and equal partners to create community environments that empower and support children and their families to reach their full potential as responsible, productive, and caring individuals. This group combines the perspectives of professionals and citizens, including parents, to act as the community voice and hold the vision of Durham's preventive system of care.

The "layered" structure of these collaborative bodies has been a key to their success. Agency leaders and managers have found great value in meeting with their peers at other agencies, strengthening their investment in the ongoing collaboration. When key decision makers are all in one room, discussion can result in rapid action, with practice and policy changes agreed on and implemented quickly. Separately, front-line professionals and citizens with direct involvement in community efforts can join forces to voice concerns and address practical implementation issues.

The work of these collaborative groups has helped smooth access to and navigation of community services. Professionals across agencies work directly with one another and with family members and informal support systems to understand family strengths and struggles. Comprehensive, integrated service plans then maximize service efficiency and effectiveness. Likewise, communication among service professionals enhances the monitoring of family progress, allowing more effective service plan revisions as needed. This effort has led to consistent theory-to-practice training across a diverse set of local agencies and community professionals, as well as the creation of a cross-agency manual.

Community-Level Intervention

As discussed by Daro and Dodge (2009), there is growing recognition that environmental factors have a significant effect on parenting behaviors. Disadvantaged neighborhoods can add to parental stress, increasing feelings of isolation, distrust, and concern for personal safety. In contrast, close-knit communities can provide support in child rearing, with neighbors looking after one another's children and providing emotional and physical respite.

To address community-level collective efficacy and social interaction, we designed a neighborhood development intervention. We identified the six highest risk neighborhoods in Durham County, based on poverty levels and official rates for child maltreatment. Three of these neighborhoods were randomly selected to receive intervention. Each intervention neighborhood was assigned a full-time community partner, who first spent considerable time gathering information about neighborhood residents, building trust, and learning about the complex strengths and challenges of each community. Community partners then worked closely with natural leaders in the neighborhood to build neighborhood associations, identify areas of need, and prioritize goals, with the ultimate aim of promoting community cohesion and building sustainable community capacity. Tangible outcomes of the neighborhood development intervention included:

- Creation of resource centers with community day activities and language classes;
- Organization of neighborhood watch programs;
- Creation of emergency food and clothing distribution centers;
- Organization of communitywide celebrations to promote healthy parent-child interactions, including back-to-school celebrations and Latino cultural events;
- Hosting of annual events to honor active community members;
- Coordination of neighborhood leadership teams, with gradual transition from DFI to community member leadership;
- Creation of a leadership training program to empower residents to act as informal leaders, establish a resident council in each of Durham's public housing communities, and advocate for community needs; and
- Creation of a grandparent network, which links struggling young parents with older community mentors who provide informal support and parenting assistance.

> Disadvantaged neighborhoods can add to parental stress, increasing feelings of isolation, distrust, and concern for personal safety.

These neighborhood interventions have sought to improve social capital in Durham's most at-risk neighborhoods, support community members in their efforts to improve their neighborhoods, and build community relationships.

Family- and Individual-Level Interventions

At the level most proximal to the child, multiple individual and family characteristics have been identified as risk factors for child maltreatment. A growing number of interventions have been developed to address these risk factors, but success relies on at least two implementation facets: effective screening and referral for services, and ongoing evaluation and improvement of services.

Screening

Preventing child maltreatment depends in part on improving methods for identifying families at risk for child abuse and neglect and, subsequently, matching services accordingly. We adopted a two-tiered approach to screening. At an ad hoc level, all professionals who interact with children were encouraged to identify early

signs of risk of maltreatment and to refer families to the Center for Child and Family Health (the primary local service agency providing evidence-based maltreatment programs) for preventive intervention. At a more systematic level, an early (i.e., prenatal) scientifically based collection of risk information was used to identify families that might benefit from prevention services.

To this end, we developed a research-informed screening instrument to be administered to pregnant women in Durham County, with subsequent service referrals for women with identified risk factors. DFI staff collaborated with directors and front-line staff members at obstetrics clinics to develop and implement the prenatal screen, which includes standardized questions on seven risk factors that predict healthy child development and child maltreatment: maternal mental health, maternal youth (under age 17), social support, intimate partner violence, maternal history of childhood maltreatment, maternal substance abuse history, and maternal history of involvement with child protective services.

Mothers with identified risk factors are referred to relevant services in the community.

The DFI prenatal screen ensures that a systematic and comprehensive set of screening questions is administered as a component of routine prenatal care and social service delivery. This screen is currently being administered to all pregnant women who seek obstetrics services at the local public health clinic or at the university hospital-based high-risk obstetrics clinic. These two providers serve close to half of the county's expectant mothers and almost all of the low-income or high-risk women.

Mothers with identified risk factors are referred to relevant services in the community. This referral process occurs within the context of maternity care coordination, a North Carolina case management program that helps expectant mothers access the health care and social services systems to maximize opportunities for healthy pregnancies and healthy babies. This context maximizes maternal engagement in services for several reasons. First, maternity care coordination is offered to all low-income expectant mothers as a part of their health care, and is thus perceived as normative and nonthreatening. Second, maternity care coordination begins as soon as women begin their prenatal care, when mothers are more receptive to help and more likely to enroll in services (McCurdy & Daro, 2001). Third, maternity care coordinators work directly with women throughout their pregnancy and the first few months of their child's life, building a relationship and seeking to engage expectant mothers in maximizing their child's healthy development, both pre- and postnatally. Service needs are discussed collaboratively, referrals are voluntary, and services are framed within the context of enhancing parenting skills and capacity.

Service delivery

To address individual- and family-level risk factors, direct service provision has been enhanced through both increased capacity and the adoption of evidence-based treatment models or promising practices (with accompanying rigorous evaluation). These services are delivered to two key populations. The first population is new parents with risk factors for child maltreatment, with the rationale that appropriate support services may result in primary prevention. The second population is parents who are involved with child protective services and found to be in need of intervention. Parenting interventions with this population may prevent recurrence of problematic parenting or maltreatment (i.e., secondary prevention).

For primary prevention, families identified through the prenatal screen were offered the

opportunity to participate in a randomized trial evaluating a home visiting intervention. This intervention is based on the Healthy Families America model, with Parents as Teachers as the core curriculum. It is delivered solely by professional social workers and counselors. In addition, curriculum-based modules for prenatal health, parent-child attachment, maternal depression, substance use, and intimate partner violence were developed to enhance the service model and are incorporated as needed.

For secondary prevention, Durham County child protective services workers referred families when their cases were substantiated or, under the North Carolina Multiple Response System, when they had findings of "services needed" or "services recommended." Referred parents of children under 2 were randomly assigned to either an attachment-based intervention or health and safety components of Lutzker's SafeCare model (Gershater-Molko, Lutzker, & Wesch, 2003). Parents of children 2 to 6 were randomly assigned to either parent-child interaction therapy (Zisser & Eyberg, 2010) or health and safety components of the SafeCare model.

For both levels of prevention, families who declined participation in a randomized trial were offered alternative clinic-based services or parenting groups within the department of social services.

Evaluation of impact

The DFI is a comprehensive initiative that has been implemented in a predesignated community with no opportunity for random assignment of communities to intervention or control groups. The most rigorous evaluation design that could be employed is a comparison in outcome variables between Durham County and the average of five matched counties in North Carolina (not receiving DFI interventions) across time, using relevant time-varying covariates to control for county differences as much as possible. This design allows for a robust test of whether Durham's outcomes change relative to comparison counties but precludes strong conclusions about whether the DFI is causally responsible for those effects. This article does not evaluate the subcomponents being subjected to randomized trials or examine which component within the multicomponent initiative might be responsible for effects; separate evaluations and manuscripts will examine these subcomponents. The purpose of this article is to examine the effects of the DFI as a whole.

Method

Evaluation Design

Administrative data pertaining to maltreatment rates in Durham County and five demographically matched comparison counties were compared across time. Comparison counties were selected from the pool of 100 counties in North Carolina by matching to Durham County as closely as possible on the basis of child population, child maltreatment substantiation rates, and poverty level for the 5-year period prior to the beginning of the DFI. Data collection and analysis for each data source are described below.

Intervention

The DFI was implemented on July 1, 2002, and continues through today. No restraint was placed on interventions being implemented in the five comparison counties. One intervention called the Multiple Response System was introduced to each of the six counties on varying dates and is accounted for in the analyses.

Outcome Measures

Child protective services investigation, substantiation, and recidivism

Child protective services records for Durham and the five comparison counties were obtained from the North Carolina Department of Health and Human Services for the period from January 1997 to December 2006. Data for children ages

0 to 6 were processed to calculate unduplicated quarterly rates for three key outcomes: (1) maltreatment investigation rates per 1,000 children, (2) substantiated maltreatment rates per 1,000 children,[1] and (3) recidivism rates (i.e., unduplicated proportions of children investigated in a particular quarter who returned to child protective services within 12 months for another investigation of a new alleged event).

Hospital and emergency department diagnoses

Hospital and emergency department records for all hospitals in Durham and one comparison county were obtained for the period from July 2000 to June 2007. Records were unavailable for other counties and for dates prior to 2000. Data were used to calculate unduplicated rates of diagnostic codes demonstrated to be associated with probable or possible maltreatment (Schnitzer, Slusher, Tarleton, & Van Tuinen, 2005)[2] for children ages 0 to 6. These rates depict the number of children per 1,000 who were seen in the hospital for an illness or injury that may have been caused by maltreatment. Codes associated with sexual abuse were excluded in these analyses, as DFI interventions did not target sexual abuse.

Analysis Plan

Regression-based interrupted time series analyses were used to analyze the administrative child protective services and hospital data (Lewis-Beck, 1986). These models test for intercept change immediately after an interruption and overall slope change following an interruption. For example, an inspiring speech on community activism may be followed by an immediate jump in volunteer hours, which would appear as an intercept change at the point of the intervention; the level of volunteer hours shifted up immediately following the intervention. On the other hand, a new reading intervention may take awhile to improve reading, so instead of a sudden jump in reading scores, one might see a shift in the slope of reading level over time; reading begins improving at a faster rate following the intervention.

> Less severe allegations of neglect are handled in a family assessment track, which incorporates strengths-based, family-centered principles in a more collaborative assessment.

Because the DFI is an ongoing intervention, the slope change parameter is the outcome of focus. County condition (intervention or control) was also included in the model to allow comparisons of slope and slope change between Durham and the comparison counties. If the DFI is effective, Durham should show an improvement in slope following the initiation of the intervention relative to the slope change of comparison counties. Thus, the interaction term for county-by-slope change is the key test of the effectiveness of the intervention.[3]

Follow-up tests were conducted to determine whether potential covariates might provide alternative explanations to the DFI's effect

[1] After implementation of the Multiple Response System child welfare reform in North Carolina, substantiation rates also included findings of "services needed."

[2] Schnitzer's codes included external cause-of-injury codes (E-codes), which identify the incident that resulted in the diagnostic code, and which could be used to exclude a diagnostic code from being considered suggestive of maltreatment (e.g., a traumatic subdural hemorrhage resulting from a car accident would be excluded). These E-codes were unavailable for our dataset. Thus, our rates may be inflated as compared with Schnitzer's, and rates by codes will not be comparable to Schnitzer's reported rates.

[3] Consistent with Lewis-Beck's approach, an original, full interrupted time series model was tested, followed by examination of more parsimonious, reduced models as appropriate (based on chi-square difference test results). Only reduced models are presented here.

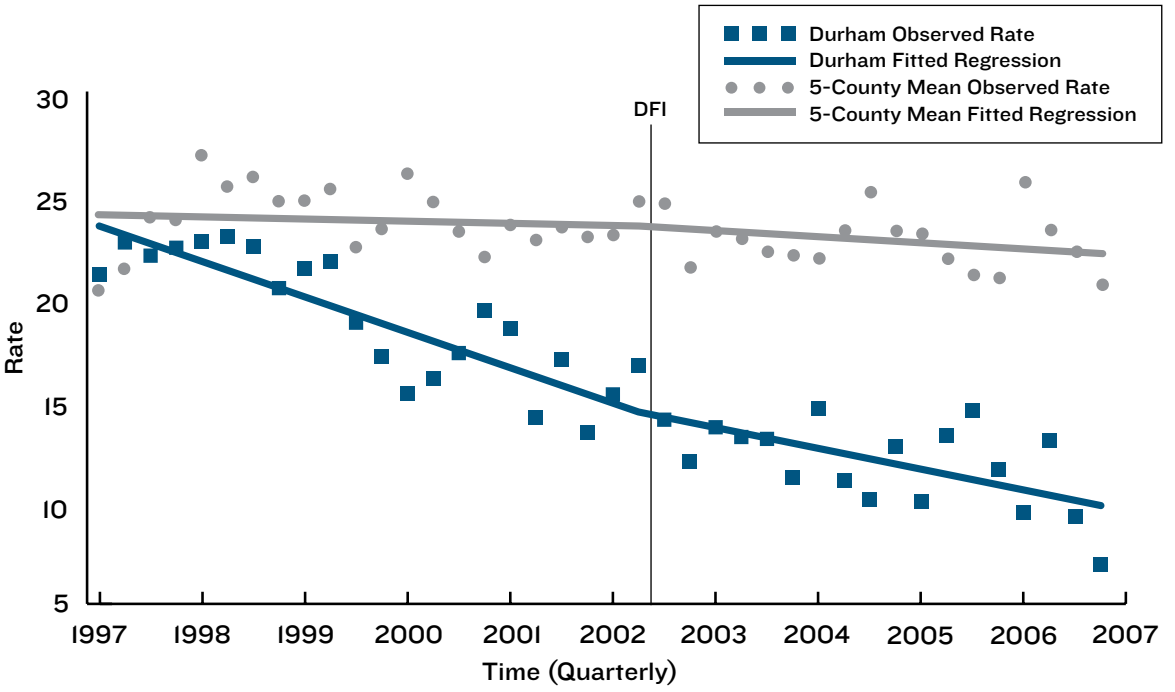
on the outcomes and to test if the addition of covariates to the model would change the overall influence of the DFI. Selected covariates included Hispanic population rates, violent crime rates, and unemployment rates. These rates changed in local communities during the DFI period, and changes could explain any apparent DFI effects on maltreatment rates. In addition, since the DFI's initiation, a systematic, statewide change in response to child maltreatment reports was launched, which also might have affected the rates of maltreatment. Called the Multiple Response System, it was a systemwide change in how child welfare workers approach families with maltreatment allegations. It is a dual-track system, with traditional investigations for abuse and severe neglect allegations. Less severe allegations of neglect are handled in a family assessment track, which incorporates strengths-based, family-centered principles in a more collaborative assessment. This system was introduced in Durham County in 2004, and in comparison counties between 2002 and 2006. It was examined in a multiple interrupted time series model, in which two interruptions were entered and intercept and slope changes at each interruption were examined.

Results

Child Protective Services

The overall interrupted time series model of investigation rates for young children was significant (see Figure 1).[4] The interaction effect between county and slope change was not significant but revealed a marginal trend ($p = 0.08$). Results indicate that, despite attempting to control for pretreatment county characteristics, investigation rates for children aged 0-6 in Durham County decreased in the 5-year pretreatment period, relative to change in control counties; however, this decline leveled off

Figure 1. Interrupted Time Series Regression for Investigation Rates per 1,000 Children Ages 0 to 6: Durham Versus Mean of Five Comparison Counties



[4] Further statistical detail is available on request from the first author.

slightly after 2002, relative to control counties. This finding suggests that the DFI had no effect, or a slightly adverse effect, on decreasing investigation rates for young children. That is, the onset of the DFI coincided with less of a decline in investigation rates for Durham compared with previous periods and control counties.

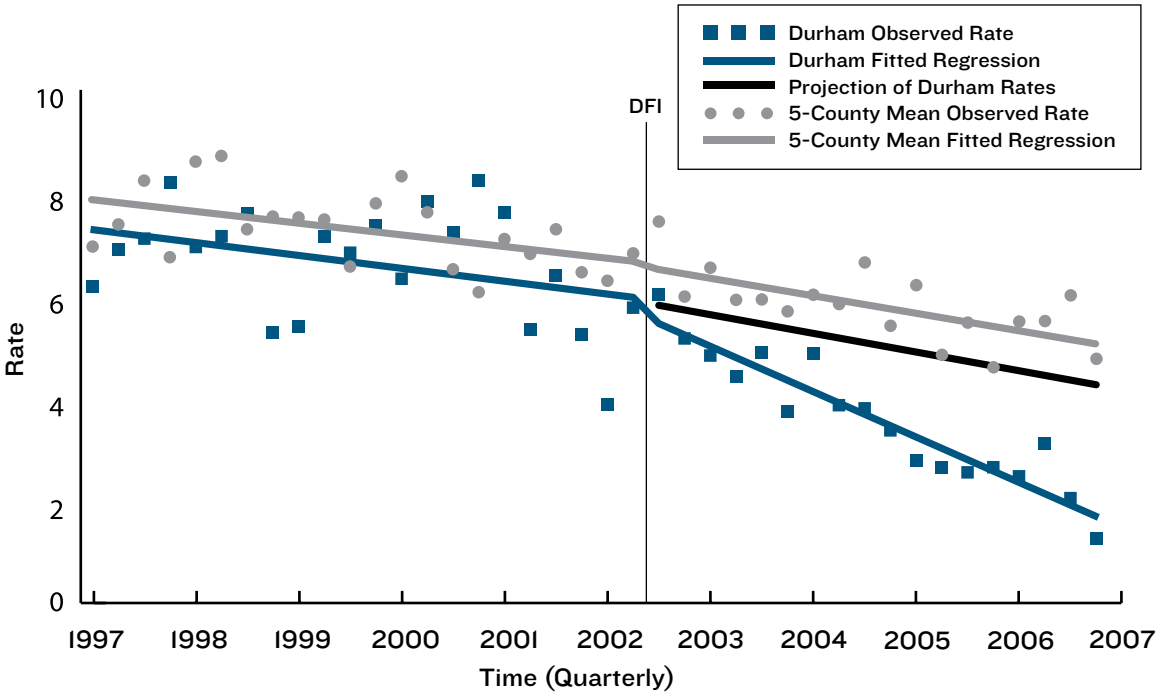
For substantiation rates, however, a significant positive interaction effect of county-by-slope change was evident ($p < 0.001$, see Figure 2). Whereas Durham and the five comparison counties showed parallel downward trends in substantiation rates in the 5-year period prior to the initiation of the DFI, following the initiation of the DFI, these rates dropped much more steeply in Durham County than they did in the five comparison counties. Overall, rates of substantiated maltreatment fell 63.2% in Durham County in the 5 years after July 1, 2002, while they fell only 24.8% on average in the five comparison counties.

No significant intervention effects were evident for repeated investigations of possible maltreatment.

Tests of covariates

The effect of county on the slope of substantiation rates remained significant after controlling for Hispanic population, violent crime, and unemployment rates ($p < .05$). Likewise, the county effect on the slope of substantiation rates remained significant ($p < 0.04$) when the multiple interrupted time series model incorporating the Multiple Response System was examined. Similarly, the patterns of findings for investigation rates and recidivism (i.e., repeat investigation) were not altered by the inclusion of covariates. Specifically, a marginal effect for county-by-slope change remained for investigation rates, and no significant effects were seen for recidivism rate.

Figure 2. Interrupted Time Series Regression for Substantiation Rates per 1,000 Children Ages 0 to 6: Durham Versus Mean of Five Comparison Counties



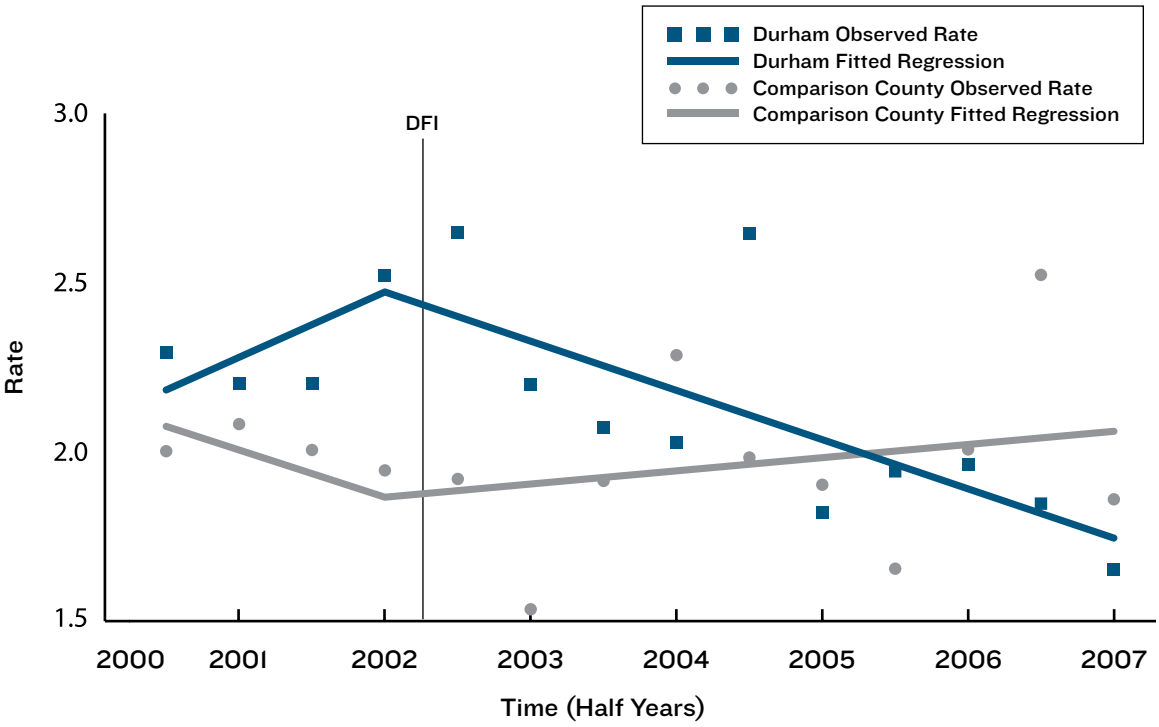
Estimating the size of the benefit

To understand the size of the impact of county on maltreatment substantiation, one must first estimate what substantiation levels in Durham would have been without the DFI. This calculation assumes that in the absence of the DFI, Durham rates would have shown changes over time similar to those seen in comparison counties, adjusted for Durham's prior rates. Using the regression equation generated by the interrupted time series model, Durham's pre-DFI trajectory was adjusted to show post-DFI changes equivalent to those in the comparison counties. The black line in Figure 2 shows this calculated trajectory estimate, which remains parallel to the trajectory for the comparisons. By comparing this estimated trajectory with the actual substantiation rates in Durham following the DFI's initiation, one can calculate the potential number of substantiations "prevented." The shift in substantiation rates seen in Durham relative to the comparison counties yielded a net prevention of approximately 468 substantiations in young children from 2002 to 2006.

Hospital and Emergency Department Diagnoses

The overall interrupted time series model for rates of maltreatment-related diagnostic codes for young children was significant (see Figures 1 and 3), and the interaction between county and slope change was marginally significant ($p < 0.07$). Findings indicate that maltreatment-related diagnostic codes in Durham declined since the DFI started, whereas they increased in the comparison county. Durham's rate of maltreatment-related diagnostic codes decreased by 28.1% since July 1, 2002, whereas the comparison county's rate increased by 9.5%.

Figure 3. Interrupted Time Series Regression for Unduplicated Maltreatment-Related Diagnostic Codes per 1,000 Children Ages 0 to 6: Durham Versus Comparison Counties



Tests of covariates

After controlling for Hispanic population, violent crime, and unemployment rates, the interaction effect between county and slope change was significant ($p < .05$), such that Durham's maltreatment-related diagnostic code rate decreased more following the DFI's initiation than did the comparison county rate. The multiple interrupted time series model examining effects of the Multiple Response System was not significant.

Discussion

The major finding of this study is that, compared with trends for matched counties, the onset of the DFI coincided with a significant decrease in the rate of substantiated child maltreatment and in child hospital visits with diagnostic codes known to be associated with probable or possible maltreatment, for children ages 0-6. These effects hold even when other possible attributable factors such as changing populations and the introduction of other systemwide changes are taken into account. These effects are estimated to equate to the prevention of 486 cases of substantiated maltreatment over 5 years in Durham County. The estimated long-term economic impact is striking. Wang and Holton (2007) estimated that the long-term cost of maltreatment, incorporating outcomes in education, health, mental health, substance use, and criminal behavior, is an average of $66,774 per maltreated child. Based on this figure, the post-DFI prevention of maltreatment substantiations would equate to a savings of $31,250,232.

Because of the limits of the nonrandomized evaluation design, it cannot be strongly concluded that these results indicate a causal effect of the implementation of the DFI. The effects of a decline in substantiated child maltreatment and maltreatment-related injuries in Durham are large in magnitude and statistically robust. We tested and rejected the possibilities that these effects were due to changing population characteristics or the introduction of other interventions such as the Multiple Response System. It remains possible that these effects have been caused by unmeasured variables, however.

It is plausible that the Durham County Division of Social Services changed its staffing and practices in the way it investigated and substantiated child maltreatment during this period (implying that the effect reflects a change in administrative practice rather than in actual maltreatment); however, two other findings render this explanation as insufficient. First, the onset of the DFI did not coincide with a reduction in the rate at which maltreatment was investigated or the rate at which re-reporting for maltreatment was investigated. If anything, the introduction of the DFI coincided with a marginal increase in the rate of investigations (computed relative to the otherwise expected continuing decline that previous patterns and control county trends suggested). It may be that DFI prevention efforts served to enhance community awareness of child maltreatment and risk factors, thus increasing maltreatment reporting by community members and professionals for concerns that previously would have gone unreported. Second, the parallel finding of declines in hospital-based, maltreatment-related injuries cannot easily be dismissed as due to a change in child protective services' administrative practice.

The most plausible remaining alternative explanation for the findings is that during the period of implementation of the DFI, other, unmeasured changes occurred in Durham, such as a change in the local economy, political leadership, or other local social interventions. If such changes did occur, interpreting such a pattern would be difficult because, on the one hand, the theoretical model guiding the DFI

posits a synergistic effect of implementing the preventive system of care. That is, DFI leaders actively tried to cultivate community support for the prevention of maltreatment, and so other, unmeasured and coincident efforts could reasonably be attributed to the implementation of the DFI.

On the other hand, it is not plausible for the DFI to be credited for every change in community intervention that occurred in Durham after July 1, 2002. Furthermore, if we are not able to measure these correspondent changes, it may be difficult to replicate them in future disseminations. We are thus left to conclude that the impact of the DFI seems very promising but needs replication or evaluation with a stronger design before wide-scale dissemination can be recommended. Given the limits of interpretation, we even contemplated whether publication of this report was advisable. We concluded, however, that a desired outcome could be encouragement of similar efforts, with rigorous evaluation, in other communities.

Toward the goal of replication with rigorous evaluation, we considered the components of the DFI as it was implemented. The DFI is composed of multiple components which may have contributed to maltreatment reduction in Durham County. From a systems perspective, the DFI facilitated the collaboration of child- and family-serving agencies at all levels, from the top decision makers to the front-line staff members, to coordinate and streamline services. Cross-agency training and ongoing communication has led to consistency in goals and procedures, smoother transition of families between agencies, and easier identification of families with a high level of service needs across domains. Consistent with system-of-care standards, child and family teams are formed for families with multiagency involvement so that all relevant professionals can attend a single case planning meeting along with family members and their self-selected informal support persons. This plan ensures that family goals are relevant, coordinated, and meeting direct family needs, which enhances family engagement.

At the community level, several maltreatment risk factors have been targeted, with particular emphasis on building a sense of community and social capital. Community partners have scaffolded natural leaders in impoverished communities, empowering them to organize neighborhood associations and actively tackle community concerns. These associations in turn build community engagement and social interactions among neighbors. In addition to tangible benefits such as community centers and food pantries, the community aspects of the DFI have served to build social networks in impoverished inner-city neighborhoods, thereby increasing informal support and investment in caring for neighborhood children.

A survey of neighborhood residents was conducted to assess the effects of the DFI community activities. More than three quarters of residents surveyed reported that following the DFI's involvement, neighborhoods were safer and had more resources and residents knew each other better, supported one another more, and knew more ways to get services for their families. For example, one resident reported that, "[residents] now have the resources and the ability to find other resources." A second noted, "[the community partners] taught us how to speak for ourselves. Don't take no for an answer. How to be a better person. Look at life differently." At least half said that the DFI helped residents be better parents and reduced the incidence of child maltreatment. Moreover, respondents noted that residents cared more about their community and felt more trust for their neighbors. In addition, those who became involved in community leadership roles universally reported that they learned new skills, gained confidence, improved their relationships with others, and gained trust in community members and agency workers.

They developed feelings of responsibility for their communities, and they felt more comfortable both giving and receiving support.

Finally, at the individual level, screening and intervention services informed by maltreatment research have been systematically implemented for families with risk factors or maltreatment histories. Systematic screening has been implemented to ensure that maltreatment risk factors are addressed. This effort has been targeted most directly toward expectant mothers to provide true primary prevention, with the goal of intervening before negative parenting patterns can begin. Some families with identified risk factors have been served using an intensive home visiting program delivered by professional social workers. Parents of young children who were already involved with child protective services for maltreatment concerns have received evidence-based services at a maltreatment-focused clinic. All of these interventions are being studied within the DFI using ongoing randomized trials to examine effects on family functioning, mental health, and long-term maltreatment reports.

Although prevention components at each level of the DFI are targeted to specific maltreatment risk factors and may play some part in Durham's overall maltreatment reduction, it is plausible that the true power of the DFI lies in the synergy of these complementary parts coming together into a cohesive whole: a comprehensive preventive system of care. This systemic change has the power to shift policies, attitudes, values, and actions of the community as a whole.

The DFI has evolved recently into a new program called Durham Connects, which more clearly articulates the specific intervention characteristics in a manual and is being implemented and evaluated through a within-county randomized controlled trial. Specifically, within the context of a preventive system of care, which continues countywide today, a program of universal brief intervention, screening, and referral for services to address identified risk factors is being delivered to a randomly selected half of the population of births countywide. Evaluation of this adaptation and extension of the DFI will be completed in coming years. The current findings speak to the significant role of comprehensive maltreatment prevention strategies in community settings. Future research to examine the specific components within such efforts may reveal critical components of large-scale, systemwide changes in maltreatment prevention practice.

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