Family to Family

TOOLS FOR Rebuilding Foster Care

The Need for Self-Evaluation

Using Data to Guide Policy and Practice

A Project of the Annie E. Casey Foundation
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ACKNOWLEDGMENTS

This tool was developed by the evaluation team and other technical assistance providers who have helped ***Family to Family*** grantees develop and enhance their capacity for self-evaluation. The evaluation team is based at the Jordan Institute for Families at the University of North Carolina at Chapel Hill and has included colleagues at the Research Triangle Institute. The technical assistance team from Metis Associates, Inc., contributed sections dealing with population profiles, mapping, statistical forecasting, and systems design. Colleagues from the Center for Social Services Research of the University of California at Berkeley, who have been involved in more recent technical assistance efforts, also provided suggestions concerning this document. Finally, the development of the self-evaluation tool owes as much or more to the insight, effort, and expertise of self-evaluation teams and key individuals in each of the grantee states and communities.

Family to Family publications designed by Sharon Ogburn

INTRODUCTION TO *FAMILY TO FAMILY*

The Annie E. Casey Foundation

The Annie E. Casey Foundation was established in 1948 by Jim Casey, a founder of United Parcel Service, and his sister and brothers, who named the Foundation in honor of their mother. The primary mission of the Foundation is to foster public policies, human-service reforms and community supports that more effectively meet the needs of today's vulnerable children and families.

The grantmaking of the Annie E. Casey Foundation is grounded in two fundamental convictions. First, there is no substitute for strong families to ensure that children grow up to be capable adults. Second, the ability of families to raise their children is often inextricably linked to conditions in communities where they live. We believe that community-centered responses can better protect children, support families and strengthen neighborhoods.

Helping distressed neighborhoods become environments that foster strong, capable families is a complex challenge that will require progress in many areas, including changes in the public systems designed to serve disadvantaged children and their families. In most states these systems:

- ❒ Are remote from the communities and families they serve;
- ❒ Focus narrowly on individual problems when families in crisis generally have multiple needs;
- ❒ Tend to intervene only when problems become so severe that serious and expensive responses are the only options; and
- ❒ Hold themselves accountable by the quantity of services offered rather than the effectiveness of the help provided.

In states and cities across the country, public child-welfare systems are frequently in need of major change in each of these areas.

Background: The Current Challenges of Public Child Welfare

The nation's child-welfare system is struggling:

1. The numbers of children in the care of the child-welfare system has continued to grow, from 260,000 children in out-of-home care in the 1980s to more than 500,000 in recent years. This growth was driven by increases in the number of children at risk of abuse and neglect, as well as by the inability of child-welfare systems to respond to the significantly higher level of need.
2. As these systems become overloaded, they are unable to safely return children to their families or to find permanent homes for them. Children are therefore experiencing much longer stays in temporary settings.
3. Concurrently, the number of foster families nationally has dropped so that fewer than 50 percent of the children needing temporary care are now placed with

foster families. As a result of this shortage, child-welfare agencies in many urban communities have placed large numbers of children in group care or with relatives who may have great difficulty caring for them. An infant coming into care in some of our largest cities has a good chance of being placed in group care and being without a permanent family for more than four years.

4. Finally, children of color are strongly overrepresented in this group of children placed in out-of-home care.

The good news is that during the past several years, a number of state and local child-welfare systems have been able to reduce the number of children coming into care and to increase the number of children placed for adoption. However, the duration and severity of the challenges facing child welfare makes this an opportune time for states and communities to again challenge themselves to rethink the fundamental role of family foster care and to consider very basic changes.

The primary mission of the Foundation is to foster public policies, human-service reforms and community supports that more effectively meet the needs of today's vulnerable children and families.

The Foundation's interest in helping communities and public agencies confront these challenges is built upon the belief that smarter and more effective responses are available to prevent child maltreatment and to respond more effectively when there is abuse or neglect. Often families can be helped to safely care for their children in their own communities and in their own homes—if appropriate support, guidance and help is provided to them early enough. However, there are emergency situations that require the separation of a child from his or her family. At such times, every effort should be made to have the child live with caring and capable relatives or with another family within the child's own community—rather than in a restrictive institutional setting. Family foster care should be the next best alternative to a child's own home or to kinship care.

National leaders in family foster care and child welfare have come to realize, however, that without major restructuring, the family foster-care system in the United States is not in a position to meet the needs of children who must be separated from their families. One indicator of the deterioration of the system has been the steady decline in the pool of available foster families while the number of children coming into care has increased. Furthermore, there has been an alarming increase in the percentage of children in placement who have special and exceptional needs. If the family foster-care system is not significantly reconstructed, the combination of these factors may result in more disrupted placements, longer lengths of stay, fewer successful family reunifications and more damage done to children by the very system that the state has put in place to protect them.

A Response to the Challenge: The *Family to Family* Initiative

With the appropriate changes in policy, in the use of resources and in programs, family foster care can respond to the challenges of out-of-home placement and be a less expensive and more humane choice for children and youth than are institutions or other group settings. Family foster-care reform, in and of itself, can yield important benefits for families and children—although such a rebuilding effort is only one part of a larger agenda designed to address the overall well-being of children and families currently in need of child protective services.

Family to Family was designed in 1992 and has now been field tested in communities across the country, including Alabama, New Mexico, Pennsylvania, Ohio and Maryland. Los Angeles County is in the early stages of implementation of the initiative. New York City has also adopted the neighborhood and family-centered principles of ***Family to Family*** as an integral part of its reform effort.

The ***Family to Family*** initiative has been an opportunity for states and communities to reconceptualize, redesign and reconstruct their foster-care system to achieve the following new systemwide goals:

1. To develop a network of family foster care that is more neighborhood-based, culturally sensitive and located primarily in the communities in which the children live.
2. To assure that scarce family foster-home resources are provided to all those children (but to only those children) who in fact must be removed from their homes.
3. To reduce reliance on institutional or congregate care (in shelters, hospitals, psychiatric centers, correctional facilities, residential treatment programs and group homes) by meeting the needs of many more of the children currently in those settings through relative or family foster care.
4. To increase the number and quality of foster families to meet projected needs.
5. To reunify children with their families as soon as that can safely be accomplished, based on the family's and children's needs—not simply the system's time frames.
6. To reduce the lengths of stay of children in out-of-home care.
7. To better screen children being considered for removal from the home to determine what services might be provided to safely preserve the family and to assess the needs of the children.
8. To decrease the overall rate of children coming into out-of-home care.
9. To involve foster families as team members in family reunification efforts.
10. To become a neighborhood resource for children and families and invest in the capacity of communities from which the foster-care population comes.

The new system envisioned by ***Family to Family*** is designed to:

- ❒ Better screen children being considered for removal from home to determine what services might be provided to safely preserve the family and to assess the needs of the children;
- ❒ Be targeted to routinely place children with families in their own neighborhoods;
- ❒ Involve foster families as team members in family-reunification efforts;
- ❒ Become a neighborhood resource for children and families and invest in the capacity of communities from which the foster-care population comes; and
- ❒ Provide permanent families for children in a timely manner.

The Foundation's role has been to assist states and communities with a portion of the costs involved in both planning and implementing innovations in their service systems for children and families and to make available technical assistance and consultation throughout the process. The Foundation has also provided funds for development and for transitional costs that accelerate system change. The states, however, have been expected to maintain the dollar base of their own investment and sustain the changes they implement when Foundation funding comes to an end. The Foundation is also committed to accumulating and disseminating both lessons from states' experiences and information on the achievement of improved outcomes for children. We will, therefore, play a major role in seeing that the results of the ***Family to Family*** initiative are actively communicated to all the states and the federal government.

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Family to Family is now showing that good foster families can be recruited and supported in the communities from which children are coming into placement.

The states selected to participate in the planning process are being funded to create major innovations in their family foster-care system to reconstruct rather than merely supplement current operations. Such changes are certain to have major effects on the broader systems of services for children, including other services within the mental-health, mental-retardation/developmental-disabilities, education and juvenile-justice systems, as well as the rest of the child-welfare system. In most states, the foster-care system serves children who are also the responsibility of other program domains. In order for the initiative to be successful (to ensure, for example, that children are not inadvertently "bumped" from one system into another), representatives from each of these service systems were expected to be involved in planning and implementation at both the state and local level. These systems were expected to commit to the goals of the initiative, as well as redeploy resources (or priorities in the use of resources) and, if necessary, alter policies and practices within their own systems.

Current Status of *Family to Family*

At the outset of the initiative in 1992, the accepted wisdom among child-welfare professionals was that a continuing decline in the numbers of foster families was unavoidable; that large, centralized, public agencies could not effectively partner with neighborhoods; that communities which have large numbers of children in care could not produce good foster families in any numbers; and that substantial increases in congregate care were inevitable. ***Family to Family*** is now showing that good foster families can be recruited and supported in the communities from which children are coming into placement. Further, dramatic increases in the overall number of foster families are possible, with corresponding decreases in the numbers of children placed in institutions as well as in the resources allocated to such placements. Initial evaluation results are now available from the Foundation. Perhaps most important, ***Family to Family*** is showing that child-welfare agencies can effectively partner with disadvantaged communities to provide better care for children who have been abused or neglected. Child-welfare practitioners and leaders—along with neighborhood residents and leaders—are beginning to develop models, tools and specific examples (all built from experience) that can be passed on to other neighborhoods and agencies interested in such partnerships.

The Four Key Strategies of *Family to Family*

There are four core strategies at the heart of ***Family to Family***:

- ***Recruitment, Training and Support of Resource Families (Foster and Relative)***—Finding and maintaining local resources who can support children and families in their own neighborhoods by recruiting, training and supporting foster parents and relative caregivers.
- ***Building Community Partnerships***—Partnering with a wide range of community organizations—beyond public and private agencies—in neighborhoods that are the source of high referral rates to work together toward creating an environment that supports families involved in the child-welfare system and helps to build stronger neighborhoods and thereby stronger families.
- ***Team Decisionmaking***—Involving not just foster parents and caseworkers but also birth families and community members in all placement decisions to ensure a network of support for the child and the adults who care for them.

❒ ***Self-Evaluation***—Using hard data linked to child and family outcomes to drive decisionmaking and to show where change is needed and where progress has been made.

The Outcomes of *Family to Family*

States participating in the ***Family to Family*** initiative are asked to commit themselves to achieving the following outcomes:

1. A reduction in the number/proportion of children served in institutional and congregate care.
2. A shift of resources from congregate and institutional care to family foster care and family-centered services across all child- and family-serving systems.
3. A decrease in the lengths of stay in out-of-home placement.
4. An increase in the number/proportion of planned reunifications.
5. A decrease in the number/proportion of re-entries into care.
6. A reduction in the number of placement moves experienced by children in care.
7. An increase in the number/proportion of siblings placed together.
8. A reduction in the total number/rate of children served away from their own families.

In sum, ***Family to Family*** is not a pilot, nor a fad, nor the latest new "model" for child-welfare work. Rather, it is a set of value-driven principles that guide a tested group of strategies that, in turn, are implemented by a practical set of tools for everyday use by administrators, managers, field workers and families.

*In sum, **Family to Family** is not a pilot, nor a fad, nor the latest new "model" for child welfare work.*

OVERVIEW

An explicit premise of ***Family to Family*** is that its planning, implementation, and evaluation have to be guided by clear and specific goals, and that grantees need good performance data to guide them toward those goals. Unfortunately, in spite of the volume of data collected about children in out-of-home care, child welfare managers often are unable to provide quick and reliable responses to questions posed by policymakers and the public. The only information usually available is a monthly or quarterly snapshot of the caseload of children in care on a given day, information that is essential to maintaining basic management accountability, but that does not capture the experience of *all* children served by the child welfare system. In fact, caseload snapshots are biased toward the experience of children who have the *worst* experiences in out-of-home care. As a result, such data present the child welfare system in a persistently bad light that undermines the confidence of policymakers and the public.

Given this premise, the Foundation sought to build capacity for "self-evaluation" among ***Family to Family*** states and communities. The thrust of this capacity-building effort was threefold: first, to build databases that tracked children through their experiences in out-of-home care by drawing on data already being collected in routine program operations; second, to compile information about children in out-of-home care from a variety of agencies other than child welfare that served families and children (mental health, special education, juvenile justice, etc.); and third, to build self-evaluation teams that would pull together information on an ongoing basis, and more importantly, use it to improve child welfare policy and practice.

With support from the evaluation team and other technical assistance providers, and due to their own diligent efforts, ***Family to Family*** grantees developed a variety of tools that helped them plan, manage, and evaluate the initiative. The first set of tools described below includes the basic structure and process of self-evaluation by which information was gathered, interpreted, and applied to changes in policy and practice. The second set of tools includes the specific approaches to analysis that were used in many sites, including longitudinal analysis, population profiles, caseload forecasting, and desktop mapping. The third set of tools includes adaptations to child welfare information systems that produced more useful information and yielded insights into designing new systems to maximize their usefulness for planning and evaluation.

THE STRUCTURE AND PROCESS OF SELF-EVALUATION

It is ironic that ***Family to Family*** seeks to be "data-driven" because the feeling among many child welfare managers is that they are overwhelmed by data. Yet, many of them also feel that the data coming across their desks are not very useful for planning or evaluation. More often than not, their experience has been that the information systems used to keep track of children are quite inflexible and the lack of programmers and analysts *not* devoted to producing routine reports makes it very difficult to get information concerning pressing policy issues. Therefore, *the first step in building a capacity for self-evaluation is to overcome skepticism that data actually can be useful.*

To make better use of data in ***Family to Family***, it was necessary to create new structures and processes for handling information. This involved:

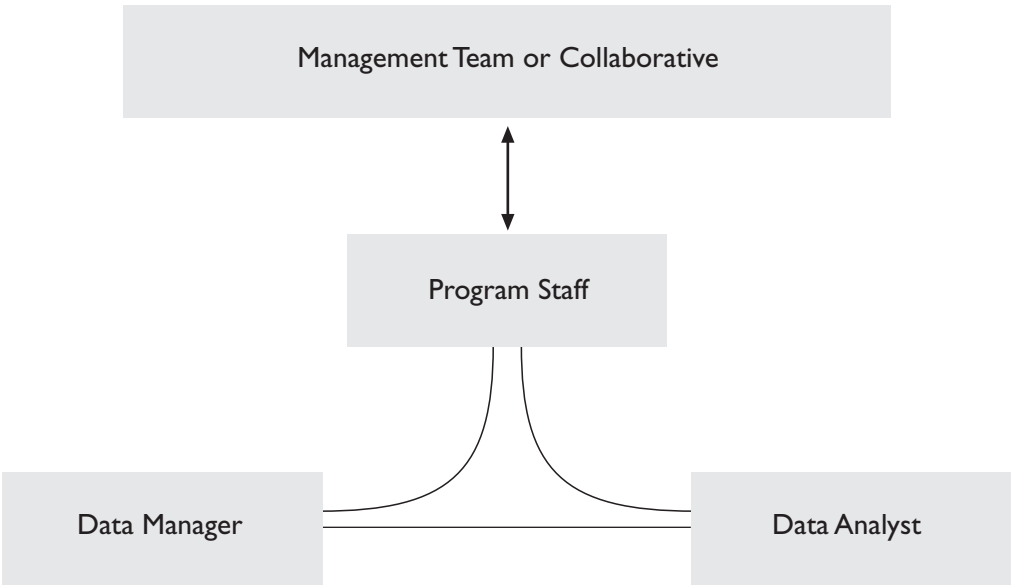
- consolidating and expanding staff resources devoted to generating and disseminating information, and making better use of that information by creating "self-evaluation teams" that included program staff, analysts, and data managers;
- building a performance baseline that showed each grantee state and community its history and current status with regard to key ***Family to Family*** outcomes; and
- using this baseline as a point of departure in each grantee's effort to assess its own progress and adjust policies and practices to bring them closer to their goals.

Putting this process in place required two sets of activities. One set focused on developing a structure for self-evaluation by creating a self-evaluation team. The other set of activities concerned the work of the team—compiling data, conducting analyses, presenting results, and linking data to planning, management, and evaluation. These activities are described below.

The Structure of Self-Evaluation

As shown in Figure 1, the team model recommended to ***Family to Family*** grantees included staff representing three distinct perspectives: frontline program staff who had face-to-face interaction with families and children; data managers who helped maintain the information systems supporting the child welfare agency; and analysts who compiled data for routine reporting and for special analyses. In some cases, these roles overlapped. For example, some "analysts" were also involved in data management or served as the agency's public information officer. Most persons filling the program staff role were supervisors or managers who were asked to devote 15 percent of their time to this work. However, taking on this role became problematic for program staff in many sites because their workloads were not adjusted to accommodate this new responsibility. So, while program staff usually were able to find the time to attend regularly scheduled team meetings, it was difficult for them to commit time to other self-evaluation activities because it competed with their "real" job responsibilities.

FIGURE 1
Model for Family to Family Self-Evaluation Teams



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All of the state child welfare agencies involved in ***Family to Family*** and most of the local agencies had at least one staff person whose work was consistent with the analyst role. In almost every case, however, the existing staff already had routine analysis and reporting responsibilities that precluded a significant commitment of time to the initiative. With encouragement from the Foundation, therefore, most grantees included in their implementation plans a request for funds to hire additional staff and to acquire a computer and analysis software.[1] By providing this support, the Foundation hoped to show that it would be a worthwhile investment of limited resources.

The purpose of creating these teams was to improve the quality and usefulness of data used for planning, managing, and evaluating child welfare policies, programs, and practices. The teaming of staff was an attempt to meld three distinct perspectives to: 1) establish data collection and analysis priorities that were informed by the experience of frontline staff; 2) to produce a better informed and more reliable interpretation of data; and 3) to link data to program management and policymaking by overcoming the detachment of analysts and data managers from program staff that commonly exists in child welfare agencies.

Most local grantees required a year or more to organize a complete self-evaluation team, while state-level teams required even more time. These unexpected delays were attributable first, to the time required to recruit and hire new analysts and second, to getting firm commitments of time from program staff whose primary responsibilities made it difficult to allocate time to the team. Nevertheless, nearly all grantees were able to put teams into place, although they varied in size and composition. In fact, there were as many different self-evaluation team structures as there were sites.

This variation was probably predictable because the structure of the child welfare agency and its collaborative history with other agencies influenced the size and composition of each site's team. For example, in

[1] This section draws on Charles L. Usher, *From social experiments to reform initiatives: implications for designing and conducting evaluations,* paper presented at the annual meeting of the American Evaluation Association, November 1995.

one state that was in the midst of implementing a consent decree the self-evaluation team became an integral component of the quality assurance (QA) efforts required by the consent decree. The QA coordinator assumed responsibility for leading the self-evaluation effort and other QA staff members were included in the self-evaluation team.

In another state that had several child welfare districts, the self-evaluation team members were the district office managers supported by state data management and analysis staff. In yet another site, the self-evaluation team included all members of the planning and evaluation unit, supervisors, social workers, legal staff, administrative staff, and occasionally, representatives from other agencies—a total membership that ranged from 20 to 30.

Some grantees attempted to create self-evaluation teams that included representatives from other agencies and organizations that served families and children. In these cases, these persons often served as analysts or data managers in their respective organizations and their contributions focused on an effort by the team to assemble data that compared the use of out-of-home care by different agencies and organizations. The state-level self-evaluation team in Ohio, described in relation to its work on population profiles, provides an example of this model.

The participation of program staff provided a stronger linkage between the self-evaluation team and agency managers than sometimes existed between managers and analysts or data managers. Program staff served as a filter, both in setting the agenda for the work of the self-evaluation team and in sharing findings with managers. Again, team members from the frontline must be attuned to current issues facing the agency's clientele as well as the political pressures facing management. In turn, analysts and data managers can apply their skills more effectively to issues that reflect greater awareness of and sensitivity to the social and political environment within which the agency operates.

Two factors that had a significant bearing on the success of these efforts emerged after formation of the team. These were 1) the selection of the chairperson for the team and 2) whether agency leaders participated in and gave attention to the work of the team. In most places, the first impulse was to have the data analyst chair the team. However, this approach failed to recognize the critical importance of program staff to self-evaluation by tending to revert, once again, to the traditional view that data really "belong" to analysts. Teams that selected program staff or administrative staff as their leaders were able more quickly to engage *all* participants in the self-evaluation effort. Some self-evaluation teams that chose to have co-chairpersons, one a data analyst and the other program staff, were particularly effective.

Sites in which a representative from the agency's leadership participated in the team's work seemed to have a higher probability of sustaining the efforts. For example, participation by an agency deputy director was a signal that this was important and worth the investment of resources that was required for success.

A final aspect of the structure of self-evaluation concerns state and local relations. In most ***Family to Family*** states, staff in the state child welfare agency maintained a statewide information system that represented a significant *potential* resource for planning and evaluation. This made it possible to build a single data file that could be analyzed for the state as a whole or for any single locality or group of localities, thereby avoiding duplication of analytical effort. In addition, as we discuss below, the ability to make comparisons across localities provided grantees a basis for assessing their progress relative to localities that historically had been

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similar to them. Capitalizing on this opportunity, however, requires a commitment by the state to support self-evaluation by localities and inevitably raises issues pertaining to how the state plays its monitoring role with localities. The range of data to be produced for each locality and the specific performance measures that would be developed for them (or with them) are matters that must be negotiated explicitly to ensure that the state can and will honor its commitment.

The Process of Self-Evaluation

The self-evaluation process in ***Family to Family*** was based on three premises. First, as we noted above, a traditional evaluation approach based exclusively on an independent assessment by a detached third party was judged inappropriate for such an initiative.[2] Second, to achieve a degree of evaluative control that would enhance the credibility of claims of success, grantees needed baseline performance data as well as data that would allow them to compare their progress to that of localities they deemed to be comparable, but that were not involved in the initiative. Third, given grantees' skepticism about the usefulness of data, it was necessary to convince participants that they actually had useful information at their disposal and that it could be made available relatively quickly. Each of these aspects of the self-evaluation process is described below.

External evaluation vs. self-evaluation

The notion of self-evaluation had intrinsic appeal for most participants, although a number felt that legislators and other policymakers would continue to insist on external evaluations. Yet, even among those who expressed this opinion, the capability to anticipate questions and to respond more effectively to inquiries was appealing in that it might deflect demands for investigations or special third-party evaluations. Thus, on an abstract level, participants were cautiously enthusiastic about this approach.

In some cases, the greatest reservations about self-evaluation were expressed by analysts and staff not in frontline roles who had been trained in conventional evaluation approaches and whose work was relatively detached from frontline concerns. This lack of experience, and especially the lack of *positive* interactions between these persons and frontline program staff, existed in many sites and was a primary reason for creating self-evaluation teams. The sharing of information and perspectives among team members provided an opportunity for such persons to expand their conception of their role and to see how information available through them might contribute to improved policy and practice, and ultimately, better outcomes for families and children.

Evaluative controls[3]

It is tempting for child welfare program managers to assess their agencies' performance by comparing current outcomes to those in earlier years. However, this simple assessment tends to produce information in a vacuum, a vacuum that leaves the manager vulnerable to attack from agency critics. It ignores a variety of factors that could account for the changes in outcomes, such as new federal or state policy or the emergence of a new social problem, such as crack cocaine. Thus, the only statement that can be made on the basis of such a "trend analysis" is, "We're doing better (or worse) than we were."

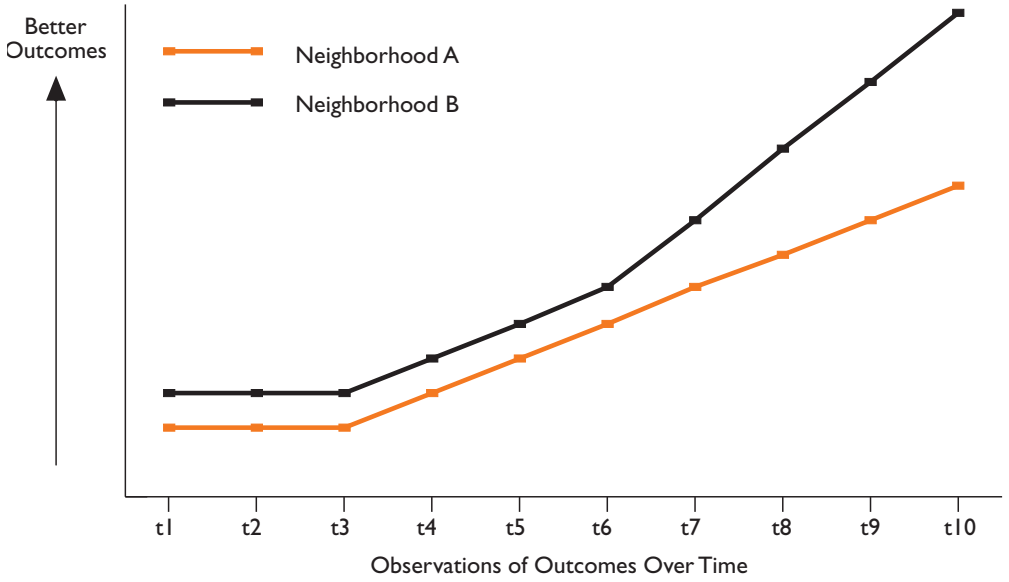
Stronger claims of success can be made by basing them on a comparison of changes in outcomes across localities, neighborhoods, agency units, etc. that historically were

[2] See Charles L. Usher, Deborah A. Gibbs & Judith B. Wildfire, "A framework for planning, implementing and evaluating child welfare reforms," *Child Welfare,* 74: 859-875.

[3] This section draws on Usher, *From social experiments to reform initiatives.*

FIGURE 2

Improvements in Outcomes for Families in Two Neighborhoods



similar with regard to those outcomes and other characteristics. This establishes a higher standard by which child welfare managers can "keep themselves honest." Indeed, this sort of "common-sense" evaluation actually incorporates key aspects of formal evaluations.

By tracking outcomes across comparable units or neighborhoods, some of which serve as pilot sites while others serve as comparison sites, managers can significantly strengthen any claims to success they ultimately make.

Figure 2 illustrates this framework in a comparison of changes in outcomes for two neighborhoods, one of which might be a pilot site for neighborhood-based foster care and the other a neighborhood scheduled for later implementation. The first three timepoints (t1 – t3) provide an historical baseline that suggests comparability between Neighborhoods A and B with regard to the outcome of interest. Timepoints t4 through t6 reveal a period when families in both neighborhoods experienced a significant improvement in outcomes, perhaps as a result of a factor that had community-wide impact (e.g., an improvement in the economy or a change in policy). The last four timepoints (t7 – t10) show a difference suggesting that something done in Neighborhood B produced a marked improvement in outcomes, exceeding what was accomplished in Neighborhood A.

This inherently stronger design produces more compelling information than either a simple pre- and post-implementation comparison of matched agencies or a time-series (trend) analysis of a single neighborhood. In the former case, the one-shot pre-implementation observation of outcomes used to match neighborhoods may not be reliable. This design, in contrast, bases pre-implementation comparability on matched time-series or trend data such as those used for caseload forecasting (see the section that follows). Similarly, an isolated analysis of timepoints t1 – t6 for Neighborhood A might have led to the conclusion that efforts to improve outcomes during the period encompassing timepoints t4 – t6 had been uniquely effective. By making the comparison with Neighborhood B, however, it becomes apparent that the improvement could have been part of a county-wide trend and that neighborhood-level improvements were simply part of that broader pattern of improvement.

Stronger claims of success can be made by basing [performance] on a comparison of changes in outcomes across localities, neighborhoods, agency units, etc. that historically were similar with regard to those outcomes and other characteristics.

In stressing the need for this type of data, the evaluation team recognized that grantees had little experience with it and that results from it were likely to be different from data then being used by the grantees.

The "analysis" associated with this approach to evaluation will often be qualitative, drawing on the insight and perspective of participants who, depending on the level of comparisons being made, know the history and current status of their locality and neighborhood. Indeed, it is this intimate knowledge of what an evaluator might term "mediating variables" that enhances the strength of conclusions about improvements in outcomes. Therefore, while evaluative efforts in ***Family to Family*** sometimes entailed sophisticated statistical analysis, the objective was to create a framework within which the self-evaluation teams—including many participants who lacked analytical expertise—could make more informed judgments about whether progress was being made.

Since this process of using data for planning, implementation, and evaluation was so new to child welfare agencies, it was critical to establish a pattern of regular and frequent meetings. These meetings not only provided a venue for the presentation and discussion of analysis results and their implications for the agency but also encouraged staff to keep the work going between meeting times with informal discussions and new analyses. ***Family to Family*** sites varied on their scheduling of meetings. In almost every site, meetings were held at least monthly. However, one site found that monthly meetings were inadequate to keep the work going and elected to meet bi-weekly. Another site established a pattern of meeting bi-weekly with the entire self-evaluation group with the co-chairpersons and the data analysts meeting in the off weeks.

Gaining experience with data

The evaluation activities in ***Family to Family*** emphasized the use of longitudinal data to track children who entered out-of-home care from their initial placement through permanent placement, and in some cases, into one or more subsequent re-entries to care.[4] The emphasis on this type of data is discussed in more detail in our description of longitudinal analysis in a later section. In short, it offered three advantages:

- ❒ it permitted generalization to all children served in out-of-home care, not just those who were "stuck in care";
- ❒ it provided the earliest indication of the effect of changes in policy and practice because those changes tended to have the greatest impact on children just coming into care or children who were diverted from out-of-home care; and
- ❒ it made it possible to identify specific groups of children, such as those who came into care for very brief periods and returned home, to whom specific responses could be targeted.

In stressing the need for this type of data, the evaluation team recognized that grantees had little experience with it and that results from it were likely to be different from data then being used by the grantees. It was necessary, therefore, to build such databases quickly and to share the results in a series of briefings. In all but one state, it was possible to build a longitudinal database within six to nine months of initial contacts. As results became available, the evaluation team used briefings to disseminate results, but deliberately delayed producing a written report of baseline findings. This approach helped avoid the finality often associated with the publication of "an evaluation." It also encouraged grantees to engage in a dialogue about the validity and reliability of the data, to help the evaluation team make refinements in the database, and

[4] See Charles L. Usher, Deborah A. Gibbs & Judith B. Wildfire, "A framework for planning, implementing and evaluating child welfare reforms," *Child Welfare*. 74: 859-875.

eventually, to focus on the findings and their implications. This helped build trust within the self-evaluation team and allowed them time to deal with information from the analysis.

Generally, the results of the longitudinal analysis provided a more balanced picture of performance—*some* children were, as is often depicted, very poorly served based on the seven outcomes stressed in ***Family to Family***. However, most children did not have very long lengths of stay or highly disruptive care, and were unlikely to return to care after achieving a permanent placement. One director, for example, said that the data were a cause for optimism in that they made it possible to identify children who might be targeted for special support and attention (in this case, the one in five children who had more than two placements). This stood in sharp contrast to previous caseload snapshots that tended to portray outcomes in a uniformly negative light.

The results of initial analyses generally encouraged grantees to pursue seriously the self-evaluation process. In most states and localities involved in the initiative, analysts were recruited and trained, computers and software were purchased, and program staff were assigned to the teams. The teams also invested significant effort in defining a wider array of outcome indicators and collecting data from other sources (for example, case record narratives). The next challenge was to communicate their findings to the management team and other key policymakers. This task is ongoing in all sites and represents the greatest challenge of self-evaluation.

Grantees varied in how they ultimately made self-evaluation a routine feature of planning and management. In one state, the initiative's evaluation framework and approaches to analysis became an integral part of the quality assurance process. Using skills and experience developed in the initial phase of ***Family to Family***, two other state child welfare agencies are providing analytical support to second-stage sites. The following sections describe specific forms of analysis and information-system adaptations that grantees have used in the initiative.

The results of initial analyses generally encouraged grantees to pursue seriously the self-evaluation process.

THE FOCUS OF SELF-EVALUATION: CHILD WELFARE OUTCOMES

There is growing recognition that the performance of the child welfare system should be measured in terms of its impact on the lives of families and children and not simply by its compliance with procedural requirements. However, achieving this shift in perspective is not a simple matter because the information systems designed to provide one type of data cannot readily supply data of the other type. Perhaps even more challenging is the reorientation of policymakers, program managers and staff, child advocates, and consumers to child and family outcomes that can be difficult to measure and record.

Types of Outcomes

A consensus is emerging that outcomes in three broad areas—safety, permanence, and well-being—should be considered in evaluating performance in the child welfare system.[5] The first area concerns the ***safety*** of children, traditionally the focal point of child protective services. A more expansive definition now includes helping children remain safely with their families in situations that pose some degree of risk. This may entail efforts to prevent out-of-home placement or to promote reunification and to support families following reunification.

The second set of outcomes has to do with ***permanence***. This outcome emerged in the early 1980s as a result of federal legislation and has been reinforced by the Adoption and Safe Families Act of 1997. Early emphasis on the reunification of children with their families is now balanced against greater attention to adoption and assisted guardianship as permanency options. Long-term foster care is generally no longer accepted as an appropriate option for children in child welfare custody. Instead, the emphasis is on providing stable out-of-home care and moving children as rapidly as possible to permanent homes in which they will be nurtured and safe.

The third outcome area involves the ***well-being*** of children. This area is significant because it exceeds traditional boundaries of responsibility for child welfare agencies. Only through partnerships with families, communities, and other service providers can the child welfare agency help promote the well-being of children who are at risk of being removed from their homes or who are being reunified with families that at one time posed a risk to their safety and well-being. Since well-being cannot be attained without a community-wide commitment of effort and resources, standards in this area vary widely across states and communities.

Measuring Performance

It is important to recognize that current efforts to measure child welfare outcomes are actually directed toward assessing the performance of state or local child welfare systems with regard to the types of outcomes outlined above. Consistent with the

[5]See Robert M. Goerge, *Data Necessary To Better Understand The Permanency, Safety, And Well-Being Of Children In Out-Of-Home Care*. Presented at a workshop of the Board on Children, Youth and Families, Commission on Behavioral and Social Sciences and Education, National Research Council, Washington, DC, 1999.

aims of ***Family to Family***, it is necessary to consider: 1) the rate at which children come to the attention of the child welfare agency because their needs or those of their families cannot otherwise be met; 2) the extent to which children must be removed from their homes to ensure their safety and well-being; 3) the quality of care while children are in the custody of the child welfare agency; 4) the success of the agency and community in finding a home for each child, whether through reunification, guardianship, or adoption; and 5) the continuing safety and well-being of children and youth who leave child welfare custody.

A key premise of this perspective is that child welfare outcomes are the responsibility of state and local child welfare agencies and the communities in which they operate. If a state or community fails to provide supports and services that might help families protect their children and enhance their well-being, it is the child welfare agency that must intervene in crisis situations. By the same token, if the child welfare agency does not make sound decisions about removing children or reunifying families, the community will ultimately judge the validity of those decisions and hold the agency accountable for its decisions and actions.

In addition to acknowledging the accountability of both the child welfare agency and the community, this perspective also encourages a view of the child welfare system that encompasses the following operating principles:

- ❒ avoiding out-of-home care while keeping children safe;
- ❒ providing good quality care to children for whom out-of-home care is unavoidable;
- ❒ providing a permanent home for all children who enter care; and
- ❒ ensuring the safety and well-being of children after they are released from child welfare custody.

Figure 3 summarizes a set of measures that captures this perspective. Underlying this perspective are several assumptions about how data will be collected and measured, assumptions that are critical to the validity and reliability of the measures, and therefore, to assessments of performance based on them. For example, the only data available for many child welfare professionals and policymakers have been snapshots of the caseload of children in custody on a given day. It is now widely understood that such profiles include disproportionate numbers of children who have the longest lengths of stay and the most disruptive care. As a result, such data should not be used to portray the performance of a child welfare system. Unfortunately, most state and local child welfare information systems are designed to produce reports of this type, and therefore, many states and the federal government rely on them for performance data.

The alternative to the caseload snapshot is longitudinal tracking of the experiences of each and every child who comes into contact with the child welfare system. By following cohorts of children, such as all children with an initial substantiated report of abuse or neglect during a given year or all the children entering out-of-home care for the first time in a given year, states and communities involved in ***Family to Family*** have shown that it is possible to create performance baselines and to monitor future performance against those baselines. This information provides a baseline for establishing performance targets and for assessing progress toward those targets.[6]

The Adoption and Safe Families Act required the Children's Bureau to "develop a set of outcome measures . . . to assess the performance of States in operating child protection and child welfare programs"

A key premise of this perspective is that child welfare outcomes are the responsibility of state and local child welfare agencies and the communities in which they operate.

[6] See Charles L. Usher, Judith B. Wildfire & Deborah A. Gibbs, "Measuring Performance In Child Welfare: Secondary Effects Of Success," *Child Welfare*, 78, (1999), 31-52.

The federal outcome measures are very similar in label and tone to those outlined in Figure 3.

(see *Federal Register*, Vol. 64, No. 161, August 20, 1999, pp. 45552-45554). The product of that effort, summarized in Figure 4, specifies seven outcomes.

The federal outcome measures are very similar in label and tone to those outlined in Figure 3. Unfortunately, the operational limitations of state data systems resulted in continued reliance on caseload snapshots or analyses of children exiting care, which incorporate bias of a different type. Therefore, the similarity of the two frameworks is somewhat superficial because results for a given state are likely to differ considerably because of important differences in how data are compiled and analyzed under the two approaches.

Although federal officials acknowledge some of the problems of using cross-sectional data rather than longitudinal data, the measures being reported to Congress are geared to data provided by the states under the Adoption and Foster Care Analysis and Reporting System (AFCARS)[7]. Thus, the limitations of existing information systems, reinforced by AFCARS reporting requirements, are incorporated into the federal outcome measures by which state performance is being judged. As a result, states and communities cannot rely solely on federal data, but must continue in their efforts to establish and maintain a capability for self-evaluation that addresses the full range of outcomes described above.

[7] See Marianne Rufty, *Child Welfare Outcome Measures: Status Of The Final Report To Congress.* Presented at the Fourth Annual Child Welfare Demonstration Projects Meeting. Washington, DC: February 16, 2000.

FIGURE 3
Measuring Child Welfare Outcomes

Outcome Dimensions		Measures
Safety	Prior to entering out-of-home care	Rate of substantiated reports in child population
	Following an initial substantiated report	Rate of subsequent reports following termination of child protective services
	Following reunification or other permanent placement	Rate of subsequent substantiated reports
		Rate of re-entry to care
Progress Toward Permanence	Use of out-of-home care	Probability of entering out-of-home care
	Use of least restrictive setting	Rate of initial and subsequent placements in congregate care as opposed to family-like settings
	Providing stable care	Rate of multiple placements in initial and subsequent spells
		Placement patterns by initial placement
	Length of stay	Length of stay in initial and subsequent spells (by age, initial placement, etc.)
Permanence	Reunification	Rates of reunification, guardianship, and adoption relative to rate of children remaining in care after 30 days, 6 months, 12 months, 15 months, 18 months, 2 years, 3 years, 4 years, 5 years
	Guardianship	
	Adoption	
	Independent living	Rate of youth aging out of foster care without having achieved a permanent placement

FIGURE 4
Federal Child Welfare Outcomes

Outcomes	Measures
Reduce recurrence of child abuse and/or neglect.	Of all children who were victims of abuse and/or neglect during the reporting period, what percentage had another substantiated report within a 12-month period?
Reduce the incidence of child abuse and/or neglect in foster care	Of all children who were in foster care during the reporting period, what percentage was due to the maltreatment by a foster parent or facility staff?
Increase permanency for children in foster care	For all children who exited the child welfare system, what percentage left either to reunification, adoption, or legal guardianship? Analysis by disability, age 12 or older, race and ethnicity, age at entry
Reduce time in foster care to reunification without increasing re-entry	Of all children who were reunified, what percentage was reunified in: < 12 months, 12-24 months, 24-36 months, 36-48 months, > 48 months? Of all children who entered foster care during the reporting period, what percentage re-entered care within 12 months of a prior foster care episode?
Reduce time in foster care to adoption	Of all children who exited care in a finalized adoption, what percentage exited care in: < 12 months, 12-24 months, 24-36 months, 36-48 months, > 48 months? Special analysis for children age 3 or older at entry to care
Increase placement stability	Of children in care for the following periods, what percentage had no more than two placement settings during that time period? < 12 months, 12-24 months, 24-36 months, 36-48 months, > 48 months
Reduce placements of young children in group homes or institutions	Percentage of children age 12 or younger who entered care during the reporting period and were placed in such settings.

ANALYTIC TOOLS

Family to Family self-evaluation teams demonstrated the usefulness of four specific analytic tools—longitudinal analysis; population profiles; caseload projections; and desktop mapping. The following discussion provides an overview of each.

Performance Management in *Family to Family*: The Use of Longitudinal Data

The *Family to Family* Initiative was one of three significant efforts in the early 1990s that sought to build longitudinal databases to describe the experience of children in out-of-home care. One project involved the construction of the Multistate Foster Care Data Archive by the Chapin Hall Center for Children at the University of Chicago, which began with data for California, Illinois, Michigan, New York, and Texas. The other project focused specifically on California and was based at the Child Welfare Research Center at the University of California at Berkeley. These efforts are complementary to one another and to *Family to Family* in that the only overlap of effort involves analysis of data for children entering care in Los Angeles. Collectively, these databases have significantly advanced our understanding of contemporary experiences in out-of-home care.

With technical assistance from the evaluation team, states and localities involved in *Family to Family* have been able to develop the capacity to measure and track changes in the outcomes described in Figure 3. Through the joint efforts of state and local evaluation teams and technical assistance providers, grantees have been able to reconfigure data from their child welfare information systems so that they yield new perspectives on the experiences of children entering their care. Table 1 is an example of how one state uses longitudinal data to help monitor changes in some key outcomes.

The format of this report, which is produced for each county in the state, permits local teams to compare outcomes in their community over time and against patterns in similar counties and for the state as a whole. The report is updated every three to six months, extending the follow-up period for each annual cohort. Once each year, a new cohort is added and tracking of the oldest cohort is discontinued.

Why longitudinal data should be used

Reinforced by federal reporting requirements, the vast majority of child welfare agencies have historically used the experiences of the children who are in care on a given day (such as the last day of the year) to describe key characteristics of all children in out-of-home care and their experiences while in agency custody. Unfortunately, such caseload profiles (also termed "cross-sectional" or "point-in-time" data) do not adequately capture the experience of children who enter and leave custody relatively quickly and thus reflect the experience of children who have the longest lengths of stay and the most disruptive care. Even though these limitations are well known, the use of cross-sectional data solely to depict experiences of children in out-of-home care still persists and has led to the overwhelming conviction that the "typical" child's experience in out-of-home care involves many placements and several years in care.

TABLE 1

Experiences of Children Entering Child Welfare Custody: 1996 – 2000*

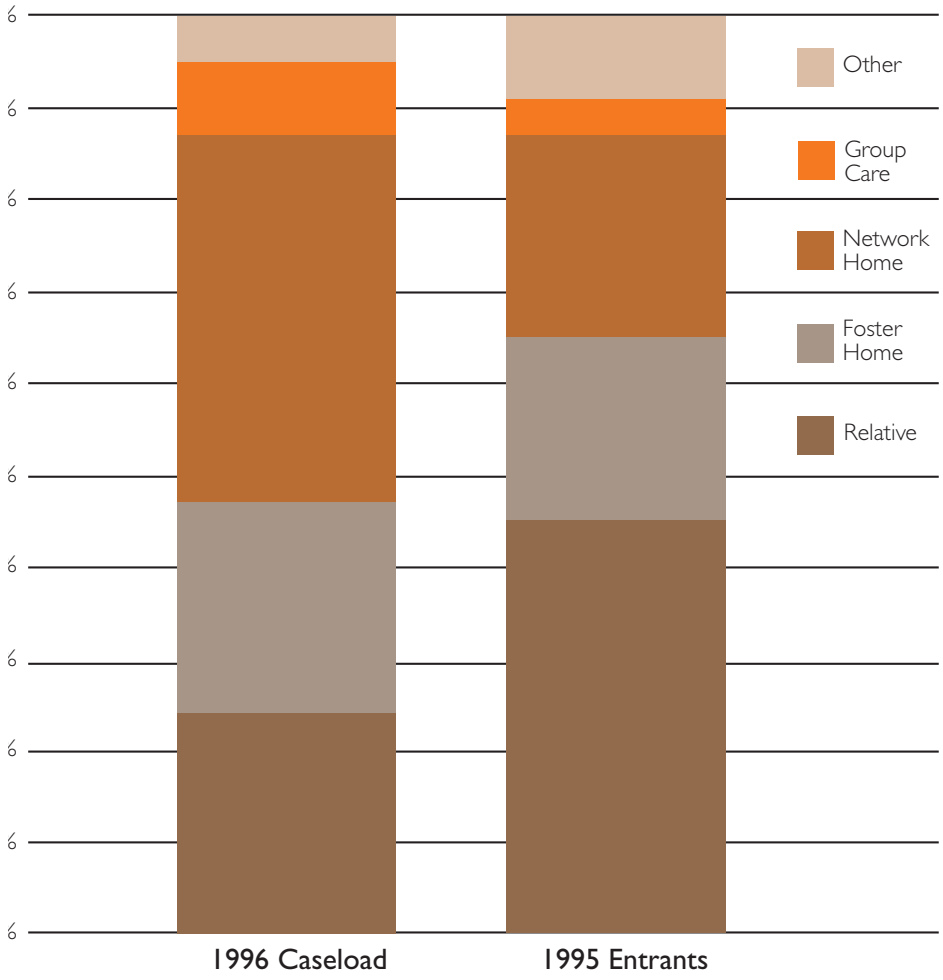
	Statewide					Level 3 Counties					Sample County				
	FY96	**FY97**	**FY98**	**FY99**	**FY00**	**FY96**	**FY97**	**FY98**	**FY99**	**FY00**	**FY96**	**FY97**	**FY98**	**FY99**	**FY00**
Pattern of Initial Placements															
Own Home	5%	5%	5%	6%	5%	5%	5%	5%	6%	4%	0%	0%	2%	2%	2%
Relative	14%	15%	18%	19%	19%	14%	16%	16%	19%	16%	13%	9%	16%	10%	9%
Foster Home	41%	40%	42%	40%	44%	39%	36%	41%	35%	43%	42%	35%	42%	31%	45%
Group Homes	4%	4%	6%	5%	6%	5%	4%	6%	5%	8%	5%	10%	7%	7%	13%
Other	16%	14%	12%	14%	14%	18%	16%	14%	16%	16%	23%	25%	8%	10%	8%
Unknown/Missing	19%	22%	17%	16%	11%	17%	22%	19%	18%	13%	17%	20%	25%	40%	23%
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Number of children	5155	5274	5294	5266	5109	2252	2235	2264	2170	1973	221	232	212	214	191
Length of Time in Custody/Placement Authority															
Median Number of Days	425	401	391	369	NA	460	473	499	509	NA	539	788	679	644	NA
% remaining in custody/pa after 3 months	84%	82%	84%	82%	83%	87%	88%	88%	86%	86%	94%	93%	90%	91%	91%
% remaining in custody/pa after 6 months	74%	73%	74%	70%	72%	78%	79%	81%	78%	77%	89%	82%	85%	84%	87%
% remaining in custody/pa after 12 months	56%	54%	53%	51%	NA	60%	59%	62%	60%	NA	74%	69%	72%	67%	NA
% remaining in custody/pa after 15 months	42%	40%	39%	38%	NA	45%	46%	48%	47%	NA	59%	64%	64%	61%	NA
% remaining in custody/pa after 24 months	33%	31%	31%	NA	NA	36%	37%	39%	NA	NA	41%	52%	48%	NA	NA
% remaining in custody/pa after 36 months	20%	20%	NA	NA	NA	23%	24%	NA	NA	NA	32%	37%	NA	NA	NA
% in custody when record checked 9/30/00	11%	15%	22%	34%	64%	14%	19%	30%	43%	70%	18%	26%	33%	48%	83%
Experiences of Children Ever Placed in Non-Family Settings															
Number of children	1061	1034	1159	1177	1031	504	469	580	520	470	36	46	48	40	48
Proportion of children	21%	20%	22%	22%	20%	22%	21%	26%	24%	24%	16%	20%	23%	19%	25%
Median # of days in non-family settings	116	140	151	118	87	123	151	142	125	88	225	208	190	125	110
Median # of days in custody/pa	618	631	594	518	NA	763	770	649	578	NA	1132	908	792	NA	NA
Placement Stability															
% children with 1 placement as of 9/30/00	29%	32%	31%	34%	39%	29%	30%	26%	30%	35%	38%	36%	28%	27%	32%
% children with 2 placements as of 9/30/00	26%	25%	28%	27%	31%	26%	24%	26%	27%	32%	26%	27%	31%	31%	44%
% children with 3 placements as of 9/30/00	16%	16%	15%	16%	16%	15%	16%	16%	17%	17%	15%	17%	16%	29%	17%
% children with 4+ placements as of 9/30/00	29%	27%	26%	22%	14%	31%	30%	33%	26%	16%	20%	20%	25%	14%	6%
Re-entry to Custody/Placement Authority															
# of children who left custody/pa	4666	4525	4130	3457	NA	1978	1820	1583	1238	NA	181	171	141	111	NA
# of children who re-entered custody/pa	415	375	264	NA	NA	170	125	79	NA	NA	11	3	3	NA	NA
Re-entry rate	9%	8%	6%	NA	NA	9%	7%	5%	NA	NA	6%	2%	2%	NA	NA

*This report tracks the experiences of children each fiscal year who entered DSS custody/placement authority for the first time in their lives.
NA = data not available due to insufficient follow-up time
Note: Percentage totals may be slightly greater than or less than 100% due to rounding.

Data from SIS on 09/30/00

FIGURE 5

Comparison of Longitudinal and Caseload Perspectives



The only way to depict accurately the experience of all children who are placed in out-of-home care is to track the experience of children entering out-of-home care for the first time during successive time periods. Longitudinal data follow children from the initial date of custody to their initial placement in out-of-home care through all subsequent placements and finally to exit from the child welfare system. These data also describe re-entries into custody following permanent placement at the end of an initial period of out-of-home care, in essence creating a statistical case history for individual children. Figure 5 uses data from a ***Family to Family*** site to illustrate the different perspectives afforded by the use of longitudinal data versus a point-in-time look.

Figure 5 compares two groups of children in one ***Family to Family*** site. One column describes the initial placements of children who entered out-of-home care for the first time in 1995 (the longitudinal perspective), the other summarizes the current placements of children who were in care on a given day in 1996 (the caseload perspective). The most obvious differences in the two distributions concern placements in private network foster homes and with relatives. Whereas about one-fourth of the 1996 caseload were children living with relatives, they represented nearly half of all the children who entered care during 1995.

The differences in these data result from the dynamics of out-of-home care. For example, the number of children in the caseload

*The **Family to Family** Initiative was one of three significant efforts in the early 1990s that sought to build longitudinal databases to describe the experience of children in out-of-home care.*

is a function of three factors: 1) the number of children entering care for the first time; 2) the length of stay children experience; and 3) the rate at which children who attain a permanent placement (e.g., reunification) subsequently re-enter out-of-home care. In this ***Family to Family*** site (but not everywhere) children placed with relatives tend to experience shorter lengths of stay than children placed in other settings. As a result, the proportion of children in this type of care declines over time and comes to constitute a proportionately smaller share of the caseload. In contrast, children placed in network homes have longer lengths of stay, with the result that the percentage of children placed in these settings grows to represent a larger percentage of the caseload.

In assessing the restrictiveness of care for children in out-of-home care in this site, the two sets of information (i.e., caseload vs. longitudinal) would lead to different

FIGURE 6

Longitudinal Data Analysis Terms as Used in *Family to Family*

- *Cohort*—a group of children in out-of-home care who are followed or tracked over a period of time
- *Cross-sectional, point-in-time, caseload data*—information on all children who are in care at a specified time point such as the last day of the year
- *Entry cohort*—a group of children who entered out-of-home care for the first time during a designated time period
- *Exit cohort*—a group of children who left out-of-home care during a designated time period
- *Longitudinal data*—data that follow a selected group of children through calendar time until the point at which either a specified event occurs or the data become unavailable
- *Median length of stay*—time point at which 50 percent of children in an entry cohort are no longer in out-of-home care
- *Spell*—a continuous period of out-of-home care
- *Survival*—children who are still in out-of-home custody at any given number of days after entering custody
- *Survival analysis, event history analysis, life table analysis*—a class of statistical procedures for estimating the probability of remaining in out-of-home care at specified time points
- *Survival curve*—a graphical presentation of the probability of children remaining in out-of-home care at varying time points

conclusions. Based on the caseload profile describing current placements, it would be reasonable to conclude that the majority of children in care were placed in network homes, and therefore, that the system relied on more restrictive forms of care. Yet, the data describing initial placements for children entering care for the first time in their lives, indicate that half were placed with relatives. Both types of information are critical to program administrators in understanding the caseload and its dynamics in their system and determining at which point it is most effective to intervene to reduce caseload sizes and to improve services to families and children.

Using Longitudinal Data

What are longitudinal data?

Longitudinal data follow a selected group of individuals through calendar time until the point at which a specified event occurs or the data become unavailable. Since the terminology of longitudinal data and survival analysis is unfamiliar to child welfare professionals, Figure 6 lists some frequently used terms and their definitions. These terms are explained in more detail in the following paragraphs.

A longitudinal data file often comprises data for several cohorts. A cohort is a designated group of persons usually with a common characteristic who are followed over time. ***Family to Family*** used entry cohorts to assess changes in key outcomes over time. The entry cohort was defined as the group of children who entered out-of-home care for the first time in their lives during a defined period of time, typically a calendar or fiscal year. By following a series of entry cohorts of children one can observe the changes in the experience of all children in out-of-home care from one year to another. Periodically updating the database extends the follow-up time for earlier cohort years and adds successive entry cohorts each year.

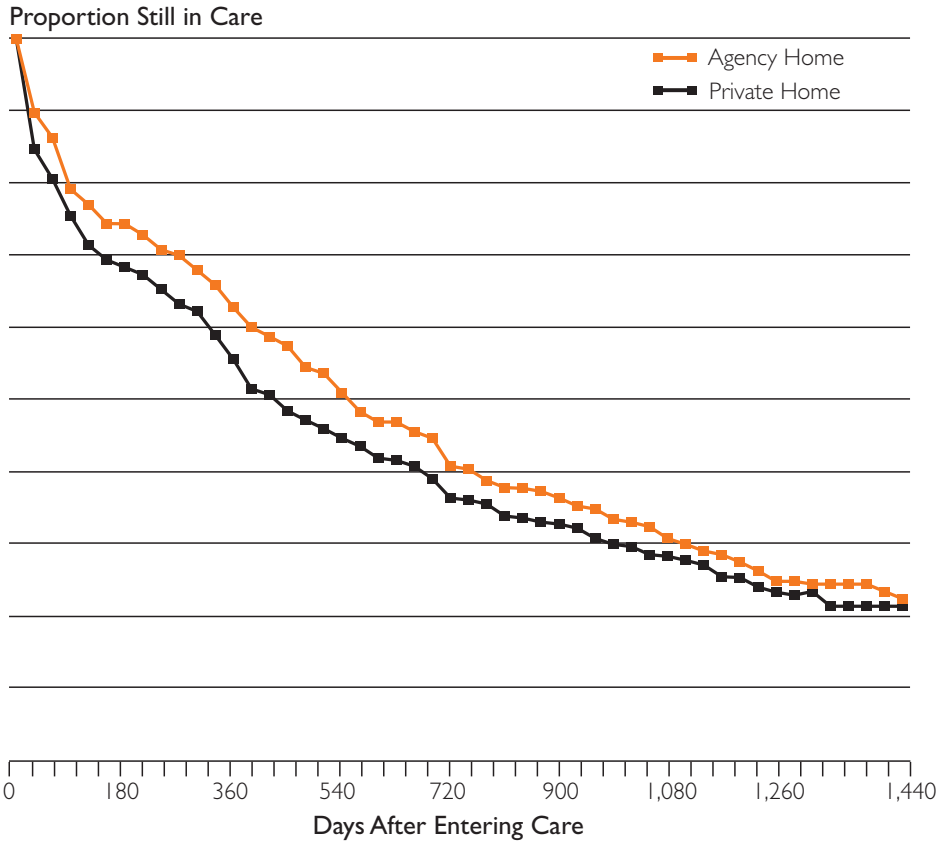
Survival analysis. Survival analysis refers to a set of statistical techniques used to estimate the length of time to the occurrence of a specific event. In ***Family to Family***, survival analysis was used to estimate the length of time to a child's exit from out-of-home care, or conversely the amount of time a child remained in out-of-home care. Survival analysis techniques make maximum use of all information available. These techniques avoid the bias resulting from deleting from the analysis out-of-home placements that are still in progress at the time of data collection (i.e., "right censored"). The analyses include both children who are still in care and children who have completed custody experiences (e.g., where family reunification or guardianship to a relative has occurred). Survival analysis estimates the probability that the event of interest (in ***Family to Family*** the event of interest was leaving out-of-home care) will occur thus summarizing the experiences of the cohort as they progress towards the defined event of interest. (For an in-depth discussion of survival analysis techniques consult one of the statistical textbooks listed in "How to Get Started and Learn More.")

One product of a life table analysis is a survival curve. Survival curves present a clear graphical picture of the differences in experiences for selected groups of children. The curve starts at 100 percent of children and shows the proportion of the population still in care (in life table terminology "surviving") at successive times for as long as follow-up information is available. Survival curves can be plotted to represent the experiences of one group of children or to summarize and compare the experiences of several subgroups of children based upon demographic characteristics or characteristics of the system of care that the children experience. In addition, survival curves that represent the experiences of children who entered care in different time periods (i.e., for different entry cohorts of children) present a summary of

Longitudinal data follow a selected group of individuals through calendar time until the point at which a specified event occurs or the data become unavailable.

FIGURE 7

Length of Stay for Children Entering Care in 1993



The insights gained from the analysis of longitudinal data are not restricted to length of stay analyses with survival analysis.

the changes in outcomes achieved over the years in that site.

Figure 7 presents a survival curve from a life table analysis of the lengths of stay in out-of-home care for children in one ***Family to Family*** county. This analysis examined the differences in length of time children remained in out-of-home care by the initial placement setting. Each curve (called a survival curve) represents the proportion of children still in custody after a given number of days. The Y-axis shows the proportion of children who are still in care ranging from 0 to 1; the X-axis represents the number of days in out-of-home care. In this example the values on the X-axis range from 0 to 1,440 days; however, the range on the X-axis varies depending on the length of time children in the cohort were followed.

Several types of questions can be answered using the data presented in a survival curve. For example, if an administrator wants to have a summary measure for the length of time children spend in out-of-home care, he/she may choose to use a median (i.e., the point at which 50 percent of the group have left care). To estimate the median from a survival curve, one moves up the Y-axis to .5 then proceeds horizontally across the graph to the point of intersection with the survival curve. At the intersection point, change direction and move vertically down the graph until intersecting with the X-axis. The value on the X-axis at this point of intersection is the median number of days children in this group remain in out-of-home care. Conversely, if there is interest in the proportion of children who are still in care at one year (360 days in the current example), the process would be the reverse.

One of the curves in Figure 7 depicts the experiences of children who were initially placed in a foster home licensed and supervised directly by the public child welfare agency. For this group of children, 50 percent were still in care at around 390 days (i.e., the median length of time in care is 390 days) and slightly more than 40 percent of children remained in care at 720 days. The other curve, in contrast, pertains to children initially placed in a foster home operated by a private agency. This group's median length of stay was almost 720 days.

From the example above, it is easy to see that survival curves provide not only a summary measure of the length of stay experience (the median), but also gives information about critical points in the process by which a group of children leaves out-of-home care. This is evident at points where the curves flatten out (indicating a slower rate of exit) or drop sharply (indicating a rapid rate of exit). The issue raised by such information is whether decisions to move children out of custody tend to be driven by the circumstances of families and children or by the schedule established by permanency planning guidelines.

Another outcome of interest for child welfare agencies concerns the exit of children from out-of-home placement and the possibility of re-entry at some subsequent time. By following children through time and accumulating their experiences in entry cohort databases, we can determine whether a child experienced more than one episode of out-of-home placement and calculate the percentage of children in each entry cohort who re-entered out-of-home placement.

Survival analyses also provide a means for analyzing rates of re-entry to care following permanent placements. Re-entry analysis is completed for each entry cohort of children, but is restricted to children who actually completed their initial spell of custody by achieving a permanent placement. The time modeled in this type of survival analysis is the number of days from the time a child achieved a permanent placement at the end of the first spell to the point at which he/she re-entered custody, if ever. Survival analysis calculates the probability of a child returning to custody within specific periods of time following the termination of custody (the percentage returning within 30 days, 90 days, six months, one year, etc.).

The insights gained from the analysis of longitudinal data are not restricted to length of stay analyses with survival analysis. For example, child welfare managers and program staff often express concern about simplistic operational definitions of "disruption of care." Their argument is that some children experience multiple placements as a result of a planned stepping-down in care. In other words, the needs of a child may dictate more intensive service in a more restrictive setting at initial placement, but be followed by a progression of placements in less restrictive settings. An accurate and fair assessment, therefore, requires that such cases be considered apart from those in which children experience multiple placements. To discern when this has occurred, however, it is necessary to know each type of placement in a series. The methodology described here allows this to be done by taking advantage of the longitudinal nature of the entry cohort data files.

The example for one site begins with a summary of the placement histories for all children who entered care in a given year. Figure 8 provides the placement histories of 925 children who initially entered out-of-home care in a ***Family to Family*** site during fiscal year 1992 and were placed in a foster home. Of these children, 544 (58.8 percent) had left agency custody by the time the data files were created in 1994. The placement history of their experience in out-of-home care is indicated by a series of two-letter codes. For example, FH indicates placement in a single foster home; RL indicates placement with a relative while in agency custody;

One condition necessary for using existing administrative data files for this activity is the presence of a unique identifier that is maintained across time for each child.

FIGURE 8

Placement Histories for Children Initially Placed in Foster Homes in 1992

Children Whose First Spell Had Ended

Placement History	Number of Children	Percent of Children
FH	294	54.0%
FHFH	119	21.9%
FHFHFH	43	7.9%
FHFHFHFH	24	4.4%
FHRL	9	1.7%
FHFHFHFHFH	7	1.3%
FHIN	5	0.9%
FHGH	4	0.7%
FHFHFHFHIN	3	0.6%
FHFHRL	3	0.6%
FHINFH	3	0.6%
FHRLFH	2	0.4%
FHFHRL	2	0.4%
FHFHFHFHGH	2	0.4%
FHFHFHGH	2	0.4%
FHFHGH	2	0.4%
FHFHIN	2	0.4%
FHFHININ	2	0.4%
FHRLRLRL	1	0.2%
FHRLRL	1	0.2%
FHFHFHFHFHFHFHFHIN	1	0.2%
FHFHFHFHFHIN	1	0.2%
FHFHINFHINFH	1	0.2%
FHFHINGH	1	0.2%
FHGHFHFHFH	1	0.2%
FHGHFHFHFHFHGH	1	0.2%
FHGHGH	1	0.2%
FHGHGHFHIN	1	0.2%
FHINRL	1	0.2%
FHINFHFH	1	0.2%
FHININFHFH	1	0.2%
FHININFHFHFHFHFH	1	0.2%
FHINININ	1	0.2%
FHINININININ	1	0.2%
Subtotal	544	100%

Children Who Remained in Care

Placement History	Number of Children	Percent of Children
FHFH	136	35.7%
FHFHFH	81	21.3%
FH	50	13.1%
FHFHFHFH	37	9.7%
FHFHFHFHFH	16	4.2%
FHRLRL	7	1.8%
FHFHFHFHFHFH	5	1.3%
FHFHFHFHFHFHFH	5	1.3%
FHFHINFH	4	1.0%
FHININ	3	0.8%
FHFHRLRL	2	0.5%
FHFHFHRL	2	0.5%
FHFHFHININ	2	0.5%
FHFHININ	2	0.5%
FHIN	2	0.5%
FHINFH	2	0.5%
FHINFHFHFH	2	0.5%
FHININFHFHRL	2	0.5%
FHRLFHRLRLRLFHRLFH	1	0.3%
FHRLFHFHFHFH	1	0.3%
FHRLGHFHFHFHFHFH	1	0.3%
FHRLRLFHRL	1	0.3%
FHRLININFHFH	1	0.3%
FHFHFHFHRL	1	0.3%
FHFHFHFHFHIN	1	0.3%
FHFHFHGH	1	0.3%
FHFHFHINFH	1	0.3%
FHFHFHININININ	1	0.3%
FHFHGH	1	0.3%
FHFHRL	1	0.3%
FHFHIN	1	0.3%
FHFHINRLRLFH	1	0.3%
FHGH	1	0.3%
FHGHFH	1	0.3%
FHGHFHFH	1	0.3%
FHGHFHFHFHININFHIN	1	0.3%
FHINFHFHFHFHFHFHIN	1	0.3%
FHINFHFHFHFHFHINFH	1	0.3%
FHINININFHIN	1	0.3%
Subtotal	381	99.7%

Codes:

Foster home	FH
Group home	GH
Relative	RL
Institution	IN

and FHFH indicates a series of placements in two different foster homes. These histories describe all the different placement patterns these children experienced and indicate the percentage of children who experienced each pattern, both for children still in care when their records were checked and for those who had left care.

The Process of Developing Longitudinal Data Files: Creating Entry Cohorts

The longitudinal data files used in ***Family to Family*** were constructed from existing administrative databases. These databases were often the same ones that track foster care payment records thereby ensuring a high degree of accuracy with regards to foster care placement events. One condition necessary for using existing administrative data files for this activity is the presence of a unique identifier that is maintained across time for each child (i.e., a child who enters care for the first time in 1993, returns home in 1994, and re-enters in 1995 should be assigned in 1995 the same unique identifier that he or she had in 1993 at initial entry).

The process for creating the entry cohort data files involves these steps:

- ❒ Management Information Services (MIS) staff in each state create the entry cohort data files using whatever software is appropriate for their computer system environment. MIS staff access historical data files from their system to determine the year of initial entry for each child and using this information create a series of entry cohort files. For example, a child who entered care for the first time in 1993 becomes a member of the 1993 entry cohort. All information and subsequent events that pertain to this child are attached to the record of the child who always remains a 1993 cohort member. In one ***Family to Family*** state, MIS staff were able to identify entry cohorts as far back as 1988. Other states were only able to create entry cohorts for more recent years.
- ❒ Once identified the entry cohort data files should be converted to a format that is conducive to use on a personal computer (PC). In ***Family to Family*** the files were converted to ASCII data files and downloaded for work on a PC.
- ❒ These raw data files are then converted to analysis files that track the placement experiences of all children. In ***Family to Family*** these analysis data files were created using either SPSS or SAS. Since the data structures of the raw data files varied from state to state (e.g., one state provided a data file that contained one record per child with all placement information for that child in the record, while another state provided a file with one record per placement or custody event with all information about the event in the record), it was necessary to develop unique data management programs for each state. All the programs are similar in that the primary data elements utilized for creating the analysis files are date fields that specify the beginning and ending dates of each placement event. Additionally, demographic information about each child and information about placement settings and placement termination reasons are incorporated into the files. Other types of information that are useful and are included in some state files include custody type, reasons for custody, sibling information, special needs of a child, and information that can be used to geographically locate the child's home and foster care placement (e.g., zip codes).
- ❒ Periodically, the entry cohort files are updated. This serves to extend the follow-up time for earlier entry cohorts and to add a new cohort for the current year. In ***Family to Family***, a pattern for updating the entry cohorts every six months was estab-

In summary, perhaps the most important lesson learned... the repercussions of not using longitudinal data are far-reaching.

Problems arise when the characteristics and experiences of children in care on any given day are deemed representative of all children ever served by a child welfare agency.

lished. In 1993 ***Family to Family*** states began their planning for the initiative with between three and five years of entry cohort data depending on how far back their mainframe systems maintained historical records; by 1997 these states have built a rich entry cohort database that includes from seven to nine years of data encompassing much of the activity within their foster care system within the last decade.

- ❒ Analysis is completed by state and local staff using SPSS or a similar analysis software package on the following outcomes: volume and patterns of initial admissions, disruptions of care, length of stay and patterns of exit from care, and re-entry to care.

Lessons Learned

Early in the initiative it became clear that an abundance of data that can be used in non-traditional ways for planning, management, and evaluation is already collected by the child welfare system. A corollary of this, however, is that it is critical to be able to recognize appropriate uses of different data types. For example, caseload data are essential to child welfare managers and should continue to be used for basic management decisions. Sound program management dictates that managers and program staff be able to say on any given day who is in their care and under what circumstances. Problems arise when the characteristics and experiences of children in care on any given day are deemed representative of all children ever served by a child welfare agency. This is particularly true when describing the length of stay of children or other characteristics of children that are known to be related to length of stay (e.g., number of disruptions, types of placements, racial characteristics and age distribution of children in care). When seeking to characterize children in these terms, longitudinal data must be used.

Second, the use of longitudinal data in evaluations of child welfare programs captures changes in outcomes more quickly than cross-sectional data. This is especially true for programs that focus on providing "front-end" services that seek to avoid out-of-home placement or to facilitate early reunification of the family because entry cohort data can clearly identify the children who would benefit from these programs and track their experiences in care. Conversely, however, longitudinal data do not lend themselves as readily to recognizing changes in outcomes that occur a long time after a child enters custody, such as adoptions.

In summary, perhaps the most important lesson learned was that even though the transition to using longitudinal data files is somewhat difficult and requires that a state or county devote precious staff time and resources to this exercise, the repercussions of not using longitudinal data are far-reaching. Using only caseload data, policymakers and practitioners fail to recognize the opportunities to focus resources on the children most in need by assuming that most children who enter out-of-home care are poorly served and the public's faith in the child welfare system continues to erode.

How to Get Started and Learn More

Figure 9 summarizes the resources that are needed to begin the process of using longitudinal data. This information in general reflects the overall process experienced by the ***Family to Family*** sites.

Finally, a list of references that provides more information about the use of longitudinal data analysis in general, and its use in child welfare specifically, is given below. For a technical discussion about the theory and application of survival analysis, consult one of the textbooks noted below. For additional information on the SPSS data management programs developed for various states please contact Charles L. Usher at the UNC School of Social Work.

FIGURE 9

Resources Needed to Start Using Longitudinal Data

- ❒ Administrative data files in which children have the same unique identifier across time and that contain beginning and ending placement dates
- ❒ MIS programmer to develop a program to identify the year a child initially entered out-of-home placement
- ❒ Analysis software package (e.g., SPSS or SAS)
- ❒ Analyst with basic knowledge of analysis software
- ❒ Personal computer with the capacity to analyze large data files
- ❒ SPSS data management programs developed by the Research Triangle Institute and the University of North Carolina

To Move to Full Implementation

- ❒ Data manager who can modify existing data management programs to accommodate the changing needs of the state
- ❒ Analyst who can develop and implement ad hoc analyses that meet the needs of program planners and administrators
- ❒ Graphics software package to present analysis results
- ❒ Analyst and/or program staff who will work with program administrators and staff to understand the significance of the analysis results as they relate to program planning and implementation
- ❒ System for updating entry cohort data files on a regularly scheduled basis

Information on the use of longitudinal data in child welfare:

Barth, R.P., Courtney, M., Berrick, J.D., Albert, V. (1994). *From child abuse to permanency planning.* New York: Aldine De Gruyter.

Benedict, M.I., White, R.B. (1991). Factors associated with foster care length of stay. *Child Welfare League of America.* 70(1), 45-58.

Goerge, R.M., Wulczyn, F.H., Harden, A.W. (1994). *A report from the multistate foster care data archive.* Chicago: The Chapin Hall Center for Children at the University of Chicago.

Usher, C.L., Gibbs, D., Wildfire, J. (1996). Measuring outcomes in child welfare: Lessons from ***Family to Family***. Report to the Annie E. Casey Foundation.

Wulczyn, F. (1991). Caseload dynamics and foster care reentry. *Social Service Review,* (March 1991), 133-156.

Wulczyn, F. (1996). A statistical and methodological framework for analyzing the foster care experiences of children. *Social Service Review,* (June 1996), 318-329.

References on Survival Analysis:

Allison, P.D. (1991). *Event history analysis regression for longitudinal event data.* Newbury Park, CA: Sage Publications.

Luke, D.A (1993). Charting the process of change: A primer on survival analysis. *American Journal of Community Psychology,* 21(2), 203-246.

Kleinbaum, D.G. (1996). *Survival analysis: A self-learning text.* New York: Springer.

Singer, J.D. & Willett, J.B. (1991). Modeling the days of our lives: Using survival analysis when designing and analyzing longitudinal studies of duration and timing of events. *Psychological Bulletin,* 110(2), 268-290.

It is important to monitor the number of children in care across all systems or agencies that provide out-of-home care.

Population Profile

Why we need this tool. One of the goals of ***Family to Family*** is to reduce the number of children in out-of-home care. In order to discern whether this goal is being achieved, it is important to monitor the number of children in care across all systems or agencies that provide out-of-home care (e.g., child welfare, juvenile justice, mental health, etc.) so that self-evaluation teams and policymakers may know whether a reduction in the number of children in one system is not just the result of these children being placed in some other system. The population profile is an analytic tool that can help self-evaluation teams and policymakers do this. It can also be used to gather basic information about these children and their types of placement.

Building the population profile—what is it? As part of the ***Family to Family*** Initiative, grantees were asked to examine how the child welfare system and all other systems that provide out-of-home care respond to families and children. How many children are placed in care? What types of placements are most often used and by which agencies? What are the demographic characteristics of these children and their families? Are there any patterns or trends within agencies or across agencies? During the planning phase, answers to these and other analytic questions were used to provide planners with necessary baseline information, and throughout implementation answers to similar questions could be used to inform evaluation, practice and policy decisions.

In an effort to compare the number and characteristics of children in out-of-home care in the various child-serving systems, during the planning phase, each ***Family to Family*** grantee prepared a state and a local (implementation county) *population profile* to describe children who were in custody and in out-of-home placements at a given point in time. As such, these data provide a valuable and complementary perspective to the longitudinal data discussed in the previous section: they represent the caseload. That is, they show *all* of the children in care on a given day, regardless of the date of entry. These are the data that caseworkers need to locate available placements. Self-evaluation teams should use these profiles, therefore, in concert with the cohort analyses to have a richer understanding of the children in out-of-home care.

In order to compile the population profiles, grantees were asked to obtain a count of the number of children in out-of-home care by agency for a specific point-in-time or date chosen by the grantee. They were also asked to obtain the following information for all or samples of children in each type of

TABLE 2

Generic Population Profile Matrix

Type of Care	**Agency**								
	Family & Children Services	Public Health	Mental Health	Rehabili-tation	Mental Retar-dation	Youth Services	Substance Abuse	Private Place-ment	Other
Foster Care									
Kinship Care									
Group Homes									
Specialized Foster Care									
Specialty Hospitals									
Acute Care Hospitals									
Institutional Care									
Substance Abuse Programs									
Emergency Shelters									
Detention Facility									
Other									

out-of-home care (e.g., shelter, regular family foster care, kinship care, treatment foster care, residential or group care, institutional care, etc.) and for each agency providing out-of-home care (e.g., family and children's services, mental health, mental retardation, juvenile justice, substance abuse, etc.):

- ❒ the number and demographic characteristics of the children;
- ❒ the demographic characteristics of the families from which they come;
- ❒ the communities (or even neighborhoods they are from);
- ❒ if applicable, the demographic characteristics of the families to which they go;
- ❒ the reasons for placement;
- ❒ if applicable, the goals of permanency plans;
- ❒ the unit cost per service; and
- ❒ if applicable, preservation attempts prior to placement.

These data provide a valuable and complementary perspective to the longitudinal data... they represent the caseload.

The process of developing population profiles began with the grantees preparing matrices that arrayed unduplicated (if possible) numbers of children in custody who, at a given point in time, were placed in some type of out-of-home care (the rows of the matrix) with each of the agencies providing out-of-home care (the columns of the matrix). A generic matrix is displayed above in Table 2. Grantees were asked to obtain unduplicated numbers because some children are served by more than one agency and including them in each agency's count would inflate the total number of children in care. By unduplicating the numbers, the grantees would also obtain another useful piece of information, the number of children served by multiple systems.

The unduplicated count of children receiving out-of-home care constituted important new planning information. In addition, grantees attempted to enhance these counts further by obtaining the basic demographic and service data described above for all or a representative number of children in each cell of the matrix. That is, profiles were developed for each subpopulation represented in the various cells of the matrix.

Since the agencies varied from state to state, within each state, interagency discussions were often held to decide upon basic parameters of their population profiles, including definitions of out-of-home placement categories, the type of data available, how the data were maintained (i.e., automated system or manual collection), agreed upon rules for unduplicating counts across and within agencies, and issues related to custody. In most states, for example, the only agencies to maintain custody of children in out-of-home care are child welfare and juvenile justice. However, other children may be removed from the home by action of another agency (e.g., mental health or mental retardation), with costs paid for by public funds. It was decided, therefore, to include these children in the population profiles, as well as the children in custody. All of the states had considerable discussions about this issue prior to developing their profiles.

To facilitate the development and use of the population profiles, grantees were encouraged to collect all of the client-specific (unit-record) data available at a central location. This made it possible for data from each of the cells of the matrix to be combined into a single file for analysis at a computer workstation.

Once the data files had been created, grantees could specify and execute analyses to support their strategic planning process, and the files could then be updated and analyzed periodically to support ongoing planning and assessment activities. An important purpose of this analysis was to determine how many children were in care in each system so that if children were diverted from foster care to some other system as a result of changes made under ***Family to Family*** it would be apparent in follow-up analyses. To perform these follow-up analyses, states were encouraged to update their cross-agency population profiles at least once each year. States were also encouraged to produce historic profiles, dating back several years before the planning phase. By analyzing these historic profiles, it is possible to statistically project or forecast the expected number of children who will enter care in the future and the cost of serving them. Such forecasts become the baseline expectations of the future service needs and costs if ***Family to Family*** changes were not made. A more extensive explanation of this kind of analysis is provided in the description of the analytic tool that follows this one, statistical forecasting.

How it was applied in *Family to Family*

The states and counties that were most successful in developing cross-system or interagency profiles were those in which data were maintained in information systems and those in which there was good interagency cooperation and discussion. Compared to interagency profiles, within-agency population profiles for child welfare agencies were easier to compile, and most states were able to do this and to use these cross-sectional data for planning and monitoring. Examples of the ways in which the profiles were developed and used are described below.

Ohio experienced the most success in developing cross-system profiles, in part because the state self-evaluation team was an interdepartmental team. Members of the team included representatives from each of the five departments serving children in out-of-home care: Alcohol and Addiction, Human Services, Mental Health, Mental Retardation/Developmental Disabilities, and Youth Service. Their collaborative effort represented one of the first attempts by the different state departments to share information about the children they serve. In the process, they also learned about each other's programs and services.

In 1992, during the planning phase of ***Family to Family*** the team determined that client-specific data could be gathered from each department's automated information system. They then selected June 30, 1992 as the point in time for this data collection. In addition to obtaining the number of children in out-of-home care on this date, the members of the team also obtained basic information about each of these children, including county of residence, date of birth, gender, ethnicity, and placement type.

Because children may receive services from more than one department, it was possible that some children might be counted in the out-of-home population by several departments, inflating the total number. To obtain an unduplicated count, the team devised a method, using matching records, that counted a child only once, regardless of the number of departments providing service. In order to match a child's records, each child was assigned a unique identification label based on the date of birth, county of residence, gender, and the first three letters of the child's last name. Using this unique label, the team was able to determine accurate counts of children in out-of-home care being served by individual departments. Once the data were gathered, a single computer file was created, allowing further analysis at one computer workstation.

In order to support ongoing planning and assessment activities, this look at the children in out-of-home care has been updated to reflect the children in care on June 30 each year since 1992. In addition, in order to examine trends or patterns across departments over time, the team gathered data on children in out-of-home care on June 30, 1990 and 1991, dates prior to the planning phase. Analyses of the data have been run for the state and for each of the 88 counties in Ohio.

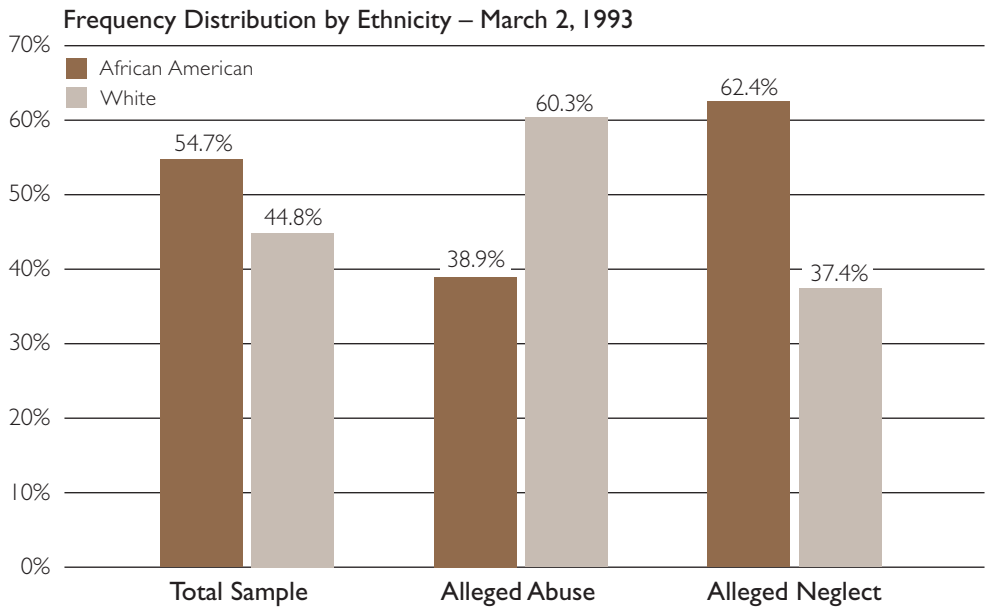
The population profile development in Ohio took a great deal of time and effort, involving monthly self-evaluation team meetings for the first two years. In order to reach its goals, the team developed systematic action plans that were updated periodically, and the results of this work were impressive and useful.

Independently of this state-level effort, Hamilton County in Ohio used additional cross-system or interdepartmental data to reconfigure their budget. Through the auspices of a cross-system council they used actuarial data to determine the percentage of money each department or system should pay for services based upon the costs of those services.

While several other ***Family to Family*** states were not able to develop full, cross-system profiles, they were able to profit from within-system profiles. In one state, during

The unduplicated count of children receiving out-of-home care constituted important new planning information.

FIGURE 10
Population Profile



Note: Children who are of an ethnicity other than African American or White are not shown.

the planning phase of ***Family to Family***, the child welfare agency used automated records to compile a population profile of the children in out-of-home care and in the custody of this agency on March 2, 1993. Among the variables included in the profile were ethnicity and reason for placement. When cross-tabulations of these data were run, they revealed some important findings for the planners.

Prior to the development of the profiles, child welfare staff from this state were aware that there were disproportionate numbers of African-American children in placement compared to white children. What they were unaware of, and what the population profile analyses uncovered, were differences in the reported reasons for placement between these two groups. As shown in Figure 10, proportionately more white children than African-American children were reported to be in out-of-home care from alleged abuse. In contrast, in comparison to white children, proportionately more African-American children than white children were in care due to alleged neglect. These were startling and revealing results to the planners, and they led one of the prominent members of the ***Family to Family*** team to say that this was the first time she appreciated how data could provide useful information.

Recommendations.
Recommendations for creating and using the population profile are highlighted below.

- ❒ Cross-system profiles are easiest to compile when there is interagency cooperation. Securing written or verbal agreements from the heads of the various child-serving agencies is one of the most effective ways of procuring cooperation, and support from the governor's office can often expedite this process.

- ❒ Ideally, population profiles should include unduplicated counts of children both within and across systems. This may not always be possible, especially when systems or agencies maintain paper records. In these cases profiles may still be developed and used, with footnotes explaining the duplication. While not always possible to obtain unduplicated counts across systems, it is usually possible to obtain unduplicated counts within systems.

❒ Similar to the recommendation above, attempts should be made to include as much information about the children in out-of-home care and their families as possible. Discussions concerning what information is not currently available can help to pinpoint data needs. For example, among the ***Family to Family*** grantees, such discussions revealed that most agencies do not systematically maintain important information about the families of children in out-of-home care or the costs of many services.

❒ In order to facilitate analysis, it is helpful to collect all client-specific data at a central location. This makes it possible for the data to be combined into a single file for analysis. Once the data file has been created, staff can specify and execute analyses to support the strategic planning process, and the file can be updated and analyzed periodically to support ongoing planning and assessment activities.

What you need to get started

❒ In order to get started you will need to identify a self-evaluation team with access to cross-system representation.

❒ The team will need to customize the generic population profile matrix (see the section above on building the tool). The customized matrix should include the relevant types of out-of-home care in your state (the rows of the matrix) and the agencies providing services (the columns).

❒ Following customization of the matrix, the team should agree upon the definitions of placement types and the point in time at which children will be counted for the profile.

❒ You should appoint a member of the team to lead the effort in obtaining an unduplicated count of the number of children in each of the appropriate cells of the matrix. This member should also investigate what data are available from each system and how these data are maintained (e.g., computer or paper records, etc.).

❒ Once there is an understanding of the available data, you will need to obtain basic population profile data for all or a representative number of children in each cell of the matrix.

❒ In order to maintain the data and to run analyses, you will also need a PC with either statistical or database software.

❒ Finally, you will need a data analyst from the self-evaluation team to run the analyses.

Later on

❒ As you progress, you may make further refinements to the matrix.

❒ Ultimately, you should obtain unduplicated counts of the number of children in each cell of the matrix.

❒ To obtain population profile data elements not previously available, you will need better and more systematic data collection.

❒ You will also need a procedure for updating the profile at least once a year and for compiling historic profiles.

How to find out more

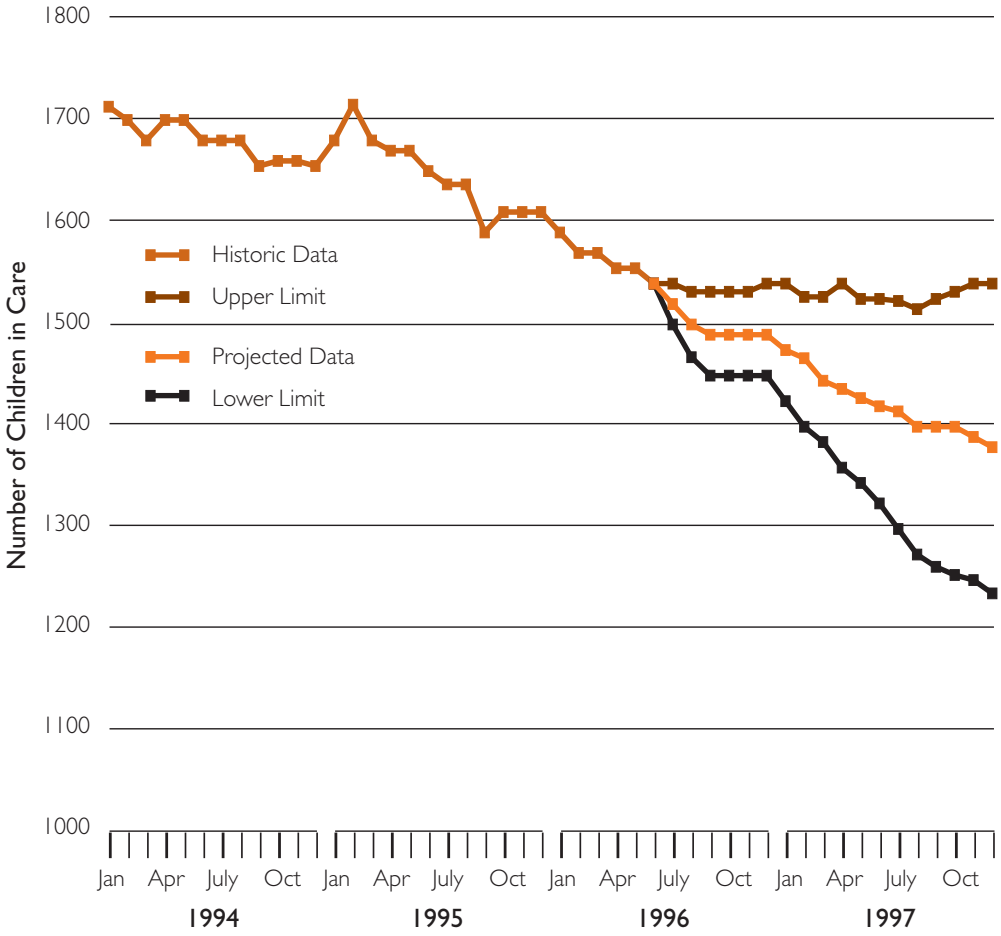
The population profile was developed specifically for ***Family to Family***. Therefore, the best resources are the profiles compiled by the ***Family to Family*** grantees. In particular, the states of Ohio and Maryland have produced cross-system population profiles that will provide relevant examples of this tool.

Statistical Forecasting

Statistical forecasting is a systemic procedure for predicting future occurrences.

Why We Need This Tool. Many of the goals of ***Family to Family*** are associated with achieving desired changes in numbers—e.g., reducing the numbers of children in out-of-home care, decreasing the numbers of placement disrup-

FIGURE 11
Number of Children in Care
Example Data



tions, shifting resources (numbers of staff and dollars) from congregate and institutional care to family-centered services, etc. Various sources of data have been used as indicators of these desired changes. As described in other sections of this paper, these data reside in agencies' administrative files, and have been compiled into population profiles and longitudinal files for analysis. By measuring changes over time, these analyses can contribute to our understandings about whether or not specific goals were achieved during the initiative.

Statistical forecasting allows us to estimate changes that are expected in the future. For example, projections (forecasts) from data that describe time periods prior to the implementation of ***Family to Family*** enable us to estimate results for children and families, had ***Family to Family*** not happened. All things being equal, comparing these projections with actual data obtained during and after implementation enables us to estimate the impact of ***Family to Family***.

Building statistical forecasting capability

What is it? Statistical forecasting is a systematic procedure for predicting future occurrences. In forecasting, statistics are calculated that describe how a variable has behaved in the past (historical data) and how it is likely to behave in the future (projections). Figure 11 shows a forecast graph of the historical numbers of children in care from January 1994 to June 1996. In the illustration, the projections of the numbers of children expected in out-of-home care begin in July 1996 and end in December 1997. Since the projections are,

necessarily, only estimates, the forecasting software creates confidence intervals around the projections. The upper and lower limits of the confidence interval define the range within which we are comfortable with our estimates.

How it was applied in *Family to Family*. From historical data, some of which were prepared for *population profiles*, grantees compiled data files describing time periods prior to the onset of ***Family to Family***. Using these data, grantees forecasted many different types of variables including: numbers of children in different placement categories; different placements and their associated costs; numbers of spaces needed in different placement categories; and others. Projections were calculated with state-wide and county-wide data.

For example, in Hamilton County, Ohio, projections of the total number of children expected in out-of-home care through the year 2001 helped to determine the amount of money requested for a county tax levy for children's services. The costs associated with the number of children expected in each of the different placement categories were added together to project the total dollars needed to serve the number of children expected in out-of-home care during these years. The tax levy was successful, in part because of the scientific method in which the projections were calculated and presented. Hamilton County is now planning to use more sophisticated forecasting techniques for internal self-evaluation and resource allocation.

What we learned in *Family to Family*. For many grantees, the ability to systematically project future numbers of children coming into out-of-home care was a new and unique experience. In some instances, projections needed for resource acquisition and allocation were calculated and used before ***Family to Family*** with *ad hoc*, non-statistical methods. The improved accuracy of statistically projected numbers of children in out-of-home care provided essential information to many people. Statistically defensible projections added needed credibility to requests for future resources, as well as allocation of existing resources. These data provided credible evidence of the future directions in children's services to finance personnel, policymakers and taxpayers. In addition, they offer enormous potential for enhancing self-evaluation capacity.

What You Need. Anyone familiar with basic statistics can perform simple forecasting techniques. You need accurate historical data files stored in a format compatible with the statistics software of your choice. Most of the main statistics software packages perform forecasting, although they may call it by other names (e.g., time series analysis; repeated measures analysis; auto correlated data analysis; lagged variable analysis; and trend analysis). In ***Family to Family***, grantees used Forecast Pro and SPSS software applications. These commercially-available products are menu driven and user-friendly. Forecast Pro is dedicated to simple statistical forecasting and has good technical support for the beginning user.

How to Find Out More. Listed below are some of the user's manuals of the main statistics software packages. The user's manual provided for Forecast Pro contains excellent introductory information and is easily read by the non-statistician. 4Thought is another good resource for the non-statistician, and is well suited to the advanced forecasting needs of children's services agencies. Texts that provide background information for performing advanced forecasting techniques are also included.

4Thought user's manual and related materials (1997). Ottawa, CA: Cognos, Inc.

Dixon, W.J. (1983). *BMDP statistical software.* Berkeley, CA: University of California Press.

The improved accuracy of statistically projected numbers of children in out-of-home care provided essential information to many people.

Maxwell, S. E. & Delaney, H. D. (1990). *Designing experiments and analyzing data: a model comparison perspective.* Belmont, CA: Wadsworth Publishing Company.

Neter, J., Wasserman, W. & Kutner, M. H. (1990). *Applied linear statistical models: regression, analysis of variance and experimental designs* (3rd ed.). Homewood, IL: Richard D. Irwin, Inc.

P-STAT user's manual (1990). Princeton, NJ: P-Stat.

SPSS for windows: user's manuals (1993). Chicago. IL: SPSS.

Stellwagen, E. A. & Goodrich, R. L. (1994). *Forecast Pro for Windows.* Belmont, MA: Business Forecast Systems, Inc.

Desktop mapping capability enables social service providers to manipulate and display geographic information.

Desktop Mapping

Why we need this tool. The first goal of ***Family to Family*** is to develop a network of family foster care that is more neighborhood-based, culturally sensitive, and located primarily in the communities in which children live. Desktop mapping is an analytic tool that can help examine progress in achieving this critical goal. As an analytic tool, desktop mapping is extremely well suited to ***Family to Family***'s needs because, among other capabilities, it can:

- ❒ geographically locate and display clients, resources and services;
- ❒ perform statistical analyses that involve geographic data (e.g., average distances between foster homes and birth homes); and
- ❒ merge data from different sources using geographic links.

By analyzing and plotting information in a geographical context, desktop mapping software can reveal important trends which might otherwise be missed using traditional methods.

What is it? As indicated above, desktop mapping capability enables social service providers to manipulate and display geographic information. Geographic Information System (GIS) software was once only available on mainframes because of its size and demand for processing power. This software was primarily used to map natural resources and utilities, and for regional planning. Over the years, as personal computers became more and more powerful, desktop versions of GIS software were made available for the PC—mainly as analytic and marketing tools. We refer to these packages as desktop mapping software.

There are various types of data that can be used with a desktop mapping package. In addition to typical client, family, program and resource data, other types of data are the maps themselves which are usually purchased through commercial sources (not unlike traditional maps or atlases). Map data come in various types including: street-based, census tract/block group, zip code, county, or sometimes, user-defined. An example of a user-defined map is a neighborhood or an agency's target area.

Typically a state agency maintains data that contain placement information for children receiving various services. These data are usually provided in a form that can be easily converted into a database file and read into the desktop mapping package. If street address information is available within the file, you would use the corresponding street-based map data to associate, or geocode, each record. The better your address data correspond to the map data, the better your match rate will be. You are then able to display your placement data on street-based and other maps of the area (e.g., census tract or zip code).

FIGURE 12

Number of Abused Children by Zip Code

Rate per 1000

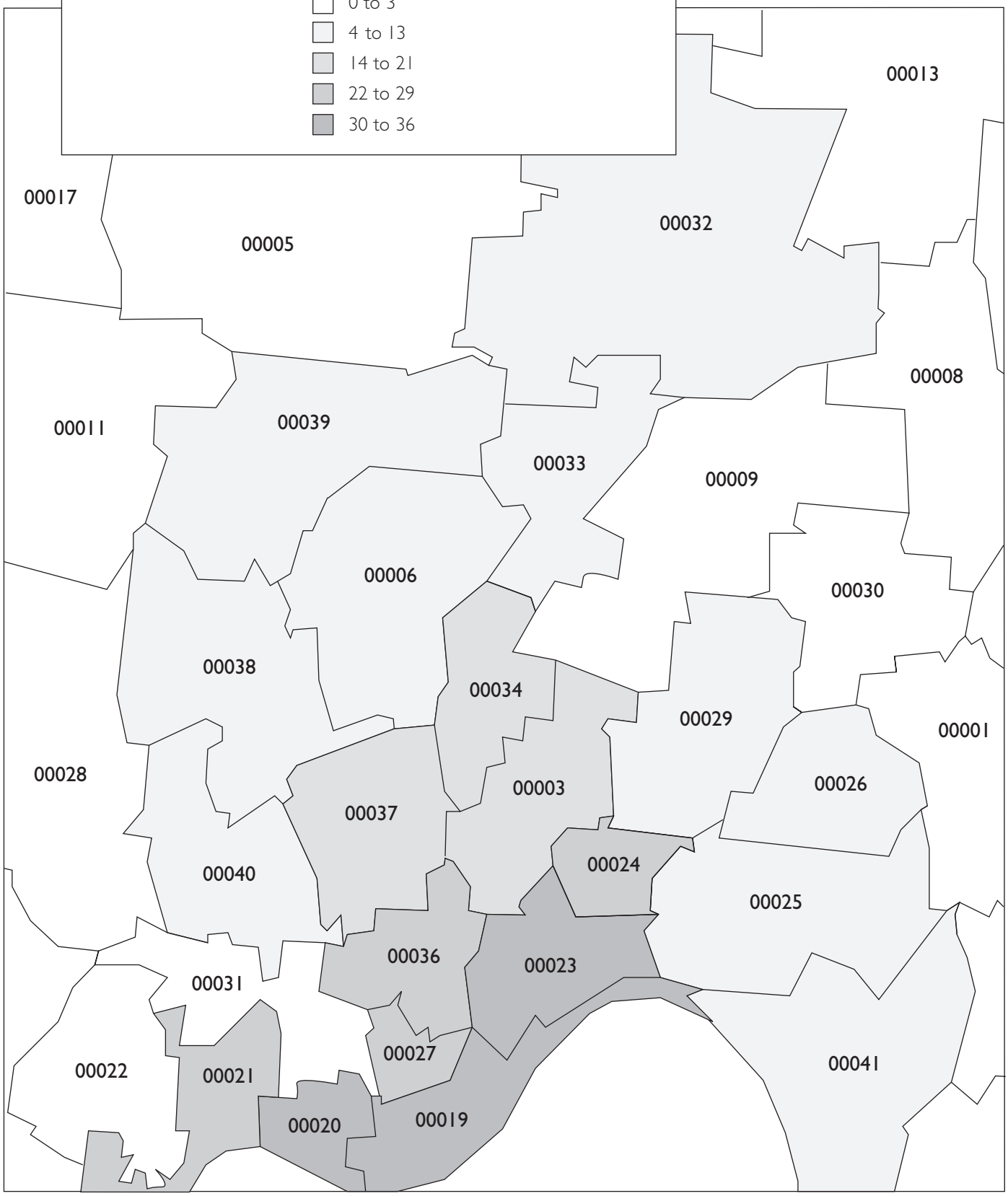


TABLE 3
Placement Distances by Zip Code

	All Zip Codes	Zip Code "A"	Zip Code "B"	Zip Code "C"	Zip Code "D"
Total number of cases	3,433	1,527	824	578	504
Mean distance from birth home to current placement (in miles)	9.21	7.51	7.33	12.45	13.7

How it was applied in *Family to Family*. Desktop mapping was used in various ways by several grantees. Two applications of the mapping software are of particular interest. In one case a grantee used desktop mapping software to add census tract and block group identifiers to databases that already included address information for children in placement. The census tract and block group identifiers were then used to link the grantee's database with other information sets and maps that contained these identifiers. The grantee was also interested in geographically displaying child abuse data by zip code. Figure 12 is an example of the type of display created (see page 43).

Another grantee used desktop mapping to add variables to an existing database containing placement information. The grantee was interested in determining the physical distance between a child's birth address and his or her current placement. The file was geocoded, not once, but twice to determine the location of both addresses. Using desktop mapping's programming language, it was then easy to compute the distance between both addresses and to add this information to the original database for each client. The modified database was then further analyzed using a statistical package. Table 3 shows the mean distance from birth home to current placement for children who originated from four specific zip codes.

The above examples demonstrate how desktop mapping software allowed grantees to associate existing child placement data with census data, giving them a better understanding of the communities into which these children are placed. Being able to compute distances allowed grantees to establish a baseline for future comparison.

What you need to get started

- ❒ **Familiarity with your operating environment, such as Windows95, is a must.** Desktop mapping packages are tailored to the operating systems under which they run. A good understanding of database management is helpful in comprehending how data are stored and managed in a desktop mapping package. Users of database products like Microsoft Access will find it easier to adapt to and use a desktop mapping package.
- ❒ **The data.** The data consist of two types: the data you wish to analyze and the maps you need to purchase (or create yourself).

The amount of time necessary to obtain data is always variable, but some additional time is usually needed to prepare the data for analysis using your desktop mapping software. When purchasing map data, keep in mind which products will be needed for geocoding, as well as for creating your displays. An example of this difference is when you have a database containing street address data which you geocode using a street-based map, but you choose to display your data by zip code or census tract.

- ❒ **The software.** Two desktop mapping packages dominate the market: Environmental Systems Research Institute Inc.'s (ESRI) *ArcView* and MapInfo Corp.'s *MapInfo Professional*. Both packages offer high-end desktop mapping functionality including their own programming languages. *MapInfo Professional* is more flexible in that it reads data from the most popular formats.
- ❒ **The hardware.** Desktop mapping packages are resource hungry, so the bigger the personal computer, the better. Minimum requirements specified by the software publishers don't necessarily allow the user to work efficiently. At any time, your hardware needs should exceed these "minimum" requirements.

Later on

- ❒ Institutionalize the way in which you acquire and maintain data.

How to find out more

The two software publishers mentioned earlier, *ESRI, Inc.* and *MapInfo Corp.,* are excellent resources for obtaining additional information about their products, on-site training, training seminars, and books.

ESRI, Inc., 800.447.9778, www.esri.com.

MapInfo Corp., 800.619.2333, www.mapinfo.com.

IMPROVING ACCESS TO INFORMATION

Why We Need This Tool

The previous discussions make clear the importance of key indicators in establishing a performance baseline and measuring progress as changes in policy and practice are implemented. Those sections discuss specific analytical techniques for self-evaluation and how to locate data. This section presents a strategy for developing capabilities in computing and information technology that break down some of the barriers to using data stored in child welfare information systems. This strategy enabled most of the ***Family to Family*** sites to begin generating key performance data and follow-up reports quite early in the planning and implementation process.

The strategy outlined below does not focus on hardware and software, but on acquiring the data needed to carry out the analyses described above. It allows you to begin looking at the quality of your data early in the reform process. It also facilitates the development of standard reports that focus on the initiative by showing progress on specific problems raised by your broader analyses; and that monitor the reforms initiated to resolve those problems. Key principles are:

- **Build on what you have**—if your child welfare information system already has a program to extract data, build your cohort and profile data extracts on it; in anticipation of getting data from *all* other agencies, use the profile data that are available.
- **Separate your reporting technology** from the larger information systems that store day-to-day operational data and that produce routine administrative reports.
- **Rely on existing database or reporting software** to reformat and summarize raw data and present the resulting statistics.

The Barriers in Traditional Reporting Systems

Given federal reporting requirements and the need for information to support federal reimbursement of state expenditures, most states have been capturing important child welfare data for years. Why, then, are the reports these systems produce so different from the analyses described in previous sections of this tool? What are the barriers to information that the ***Family to Family*** strategy overcomes?

- **Data organization.** Child welfare information systems are organized around an individual child or provider—what services have been provided, over time, to a particular child? What services, over time, has a particular provider rendered? Statistics for self-evaluation, on the other hand, focus on an event during a particular date range. How many children entered foster care each year for the last five years? How many left, and why? What was the population in each type of care on a particular date? Child-focused data must be reorganized for statistical use.
- **Programming resources.** Since the data must be reorganized, developing a new report means paying for anywhere from a few days to a few weeks of a programmer's time, which may not even be available to localities. Moreover, a statistical

analysis inevitably raises questions. For instance, *why* did the number of children going into foster care decline more in one county than another? With traditional methods, each follow-up question requires another round of programming, cost, and delay. It becomes almost impossible to explore the issues raised.

- ❒ **System resources.** Child welfare information systems are "transaction based." They are designed so that a single update, or retrieving information about a single individual, takes minimal system resources, and many such transactions can be handled simultaneously. Reading and summarizing large numbers of records for a single analysis, on the other hand, takes a significant amount of system resources. Large reports are therefore usually run at night; and only a few designated programmers are allowed to inquire against the raw data during business hours. It is usually not possible for local managers to access data directly, even where appropriate tools exist.

- ❒ **Presentation.** We are all accustomed now to the professional-looking tables and graphs that commercial PC packages can generate, and correspondingly unhappy with the hard-to-read standard reports we see. Unfortunately, high-quality text and graphs are usually either unavailable or very expensive on computers large enough to support a state child welfare system.

How to Improve Access to Information

Improving access to information requires two sets of resources:

- ❒ An underlying store of data that are extracted periodically from the central information system and reorganized to accommodate statistical use; and
- ❒ A set of facilities for retrieving and summarizing relevant data from this reorganized data store and presenting the resulting statistics as high-quality tables and graphs.

The data set used for analysis is usually stored on a PC, to take advantage of standard analytic and presentation software packages. Unlike central information systems that support daily operations, the analytic environment emphasizes flexibility. This flexibility means that the analytic environment can—and should—be developed for whatever applicable data are most readily available. It can then easily be expanded as other data become available. It can accommodate new groupings of data with ease. Above all, because the data are organized for statistical use, new reports can be created in a few minutes by a data analyst who needs no programming skills.

Child-focused data must be reorganized for statistical use.

Selecting analysis and reporting software. The software you use must be capable of doing two things: creating new data files from one or more extracts of raw data; and doing analysis that will produce the types of output described above. Choose a package with local support, if possible. The statistical package *SPSS* is a good choice, since it is widely used. A database package like *Microsoft Access* also makes sense if your information systems group uses it. A spreadsheet like *Microsoft Excel* provides high-quality output (often including maps), but has more limited analytical capacity than a statistical package and more limited data manipulation capacity than a database package. Some organizations use a database package to reorganize and query data and a spreadsheet package to format the output for presentation. Mapping usually requires a separate, stand-alone package.

Sophisticated data analysis packages allow the user to work with multi-dimensional data. For instance, the user can move from agency-wide to departmental or unit statistics, isolate particularly interesting data at the unit level, and then look at those data over

*We don't need to invest in elaborate equipment and costly projects. In fact, we not only **can** begin small, we **should** begin small.*

time (including forecasting). These packages tend to be more expensive than standard statistical or database or spreadsheet packages, and you will usually find little local expertise to draw on. Unless you have an experienced data analyst, therefore, we recommend that you start with one of the standard, widely used packages. Later on, as your facility increases, and you become more accustomed to using data to inform your decisions, you can, if you wish, move up to true data mining.

Figure 13, which is discussed on page 49, shows how access to information can be improved through these resources.

Extracting Data. The hard part of extracting data is deciding what information you will need, where it exists, and whether and when you can access it. Those topics are covered in the next section of this tool. Once data sources are identified, the rest is relatively simple, provided you keep the following in mind.

- ❒ If the required data are on several different information systems, and those information systems don't yet have standard extracts, start with the child welfare system and add other data later.
- ❒ You will need several weeks of programmer time from the staff supporting each data source, which can be difficult to arrange. Once the initial extract program is written, though, it can be rerun monthly or quarterly with no change except the date range; and it is relatively simple to add new data fields.
- ❒ To keep programming to a minimum, don't ask the extract program to reorganize the data; reorganization will usually be much easier through the PC tool.
- ❒ Updating an existing analytical database with next month's data is hard. It's much easier to recreate the entire database with an extract that includes both the old and the new data.

Preparing data. This is the most time-consuming step in the analysis process. Depending on the quality and amount of data and the number of extracts, it will take from a week to several months for a programmer familiar with your particular software to write a program to accomplish this. Like the extract program, however, this program can be rerun whenever a more up-to-date copy of the extract must be loaded.

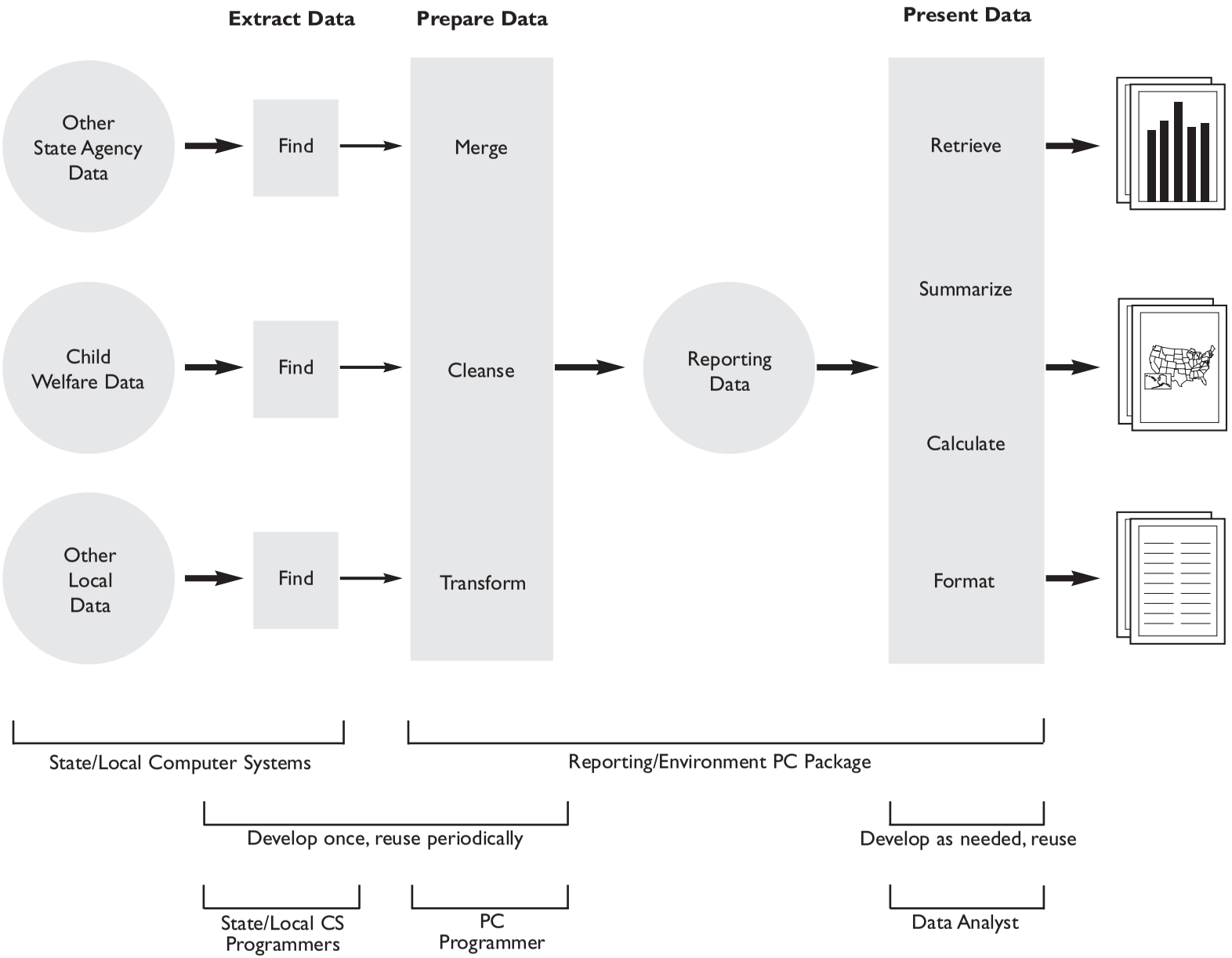
Presenting data. Selecting and presenting data from your reorganized data store is the heart of the analytic environment. The reporting package, using the reorganized data, will allow your data analyst, or anyone with a few days of training, to create in minutes reports and analyses that would take days or weeks of programmer time using traditional methods.

Maryland: An Example

What happened? Maryland, like other states, began its ***Family to Family*** Initiative as an older child welfare information system that was being first extended and then replaced by a newer system that would fulfill federal reporting requirements. Several larger counties had developed their own information systems, some of which were designed around caseload data extracted regularly from the state system and distributed to the counties. That neither the state nor the local systems could keep up with requests for management information was frustrating to programmers and policymakers alike.

During the ***Family to Family*** planning period, with both state and local information systems personnel absorbed by the new information system, attention focused on providing data, particularly cohort data, to the outside evaluators. Little attention could be spared for internal statistical reporting. As ***Family to Family*** participants began to understand the statistics provided by the evaluators, they also began to ask more detailed questions. A natural demand for

FIGURE 13
Improving Access to Information



Selecting and presenting data from your reorganized data store is the heart of the analytic environment.

more frequent and more detailed reports arose, further drawing attention to the lack of resources to prepare those reports in the traditional ways.

When the evaluators returned Maryland's cohort data as an *SPSS* file and provided a day of *SPSS* training, the solution to the bottleneck was under way. Two local ***Family to Family*** participants, excited that they could explore the information in the cohort files even though they had no special expertise with computers or with *SPSS,* decided to build on this first step. Because a routine caseload extract, available on diskette, already existed in Maryland, it took only a week or so to build and install a small program to store reorganized data from that extract, too, within *SPSS,* and for the two coordinators to begin happily generating tables and graphs.

What remains to be done? The issues that remain to be resolved in Maryland are typical for this stage of development, namely:

- **Adding more data.** It will take years to add all the data described in the other sections of this tool to Maryland's emerging analytic environment. Some will be relatively simple to add. For instance, monitoring issues raised by the cohort analysis will require a more comprehensive extract than the cohort data (which have placement history, but do not include those not in the cohort) and the caseload data (which cover the entire population but lack historical information). Information on providers or on placements by other agencies will take longer; while data not yet collected, like home neighborhood history, will take longest of all.
- **Providing ongoing support.** Maryland's *SPSS* programs were developed by outside resources. Although the process runs smoothly now, periodic support will be required as new data are added.
- **Securing state-level participation.** The state-level Department of Human Resources analyst group plans to adopt the existing *SPSS* programs so that statewide analyses will match county-level reports. This group can then assume responsibility for support and expansion.
- **Improving data quality.** Data inaccuracies are common when many people fill out data entry forms, data are entered by other staff who have little connection with day-to-day operations, and data are not routinely scrutinized by their originators through regular reports. Simply having access to these data locally has surfaced some quality issues, both within and between the two different localities. It will be necessary to clarify procedures, provide extra training, and continue to monitor data quality.
- **Preventing information overload.** Generating reports quickly from accessible data can easily lead to information overload. It will be important for both state and local users to focus on substantive issues that are raised by the broader statistical analyses discussed in the other sections of this document.

What have we learned? The Maryland example illustrates the main lessons to be learned about data for statistical analysis and management reports:

- Until a group begins to feel comfortable using *some* data to inform policy, very little will be done to gather statistical data extensively; but
- Once the demand surfaces, it's easy to begin providing valuable statistics, even though key data may be missing for some time;
- When data are made available locally, data quality problems will surface that will require some procedural changes to correct.

The crucial point is that a PC with *SPSS* and a less-than-perfect set of data is, in fact, an "analytic environment" that can provide important insights into our reform efforts even as we work to gather the more comprehensive data discussed in other sections of this tool. We don't need to invest in elaborate equipment and costly projects. In fact, we not only can begin small, we should begin small. Only when we use our data will we start to understand those data and what they can tell us—including how accurate they are. Our growing understanding, in turn, will guide us toward how we should expand and improve the initial environment.

Recommendations

The usual tried and true cliches apply: *Just do it! Keep it simple. Don't run before you can walk*. More practically:

- ❒ Designate or hire a data analyst who will act as project manager while the initial extract(s) are created, who will write the PC programs to transform the data, and who will generate and interpret reports. This data analyst must be familiar with your foster care programs. If no such paragon exists, hire a consultant to set up the initial system and train at least one person who is familiar with your foster care programs to create reports.
- ❒ Include a few key information systems people on your self-evaluation subcommittee, to make sure they understand, and can contribute to, your plans. Make sure, too, that whoever controls the child welfare information system budget (and priorities) is on your planning and implementation committee. (See also the discussion on inter-agency planning in Ohio in the *Population Profile* section.)
- ❒ Before you begin, review your plans, especially your plans for support, with the traditional programming areas that support you now. They need to know what you are doing and what help, if any, you will ask them for in the future.
- ❒ Pay attention to building a routine process for extracting and distributing and transforming data. A complex and comprehensive extract that requires significant human intervention will be difficult to recreate next quarter.
- ❒ Be prepared to find inaccurate data, and be ready to change your procedures accordingly.
- ❒ Begin with one or possibly two PCs and users. It will take a certain amount of hand-holding to teach new users what the data really mean.

What you need to get started

- ❒ Access to several weeks to a month of child welfare information system programmer time (unless your information system, like Maryland's, already provides a routine extract);
- ❒ Someone with knowledge of how your foster care system works who is sufficiently interested to lead the effort, preferably someone with a data analyst background;
- ❒ A fully-loaded up-to-date PC with either statistical or database software;
- ❒ Someone with sufficient knowledge about your software to be able to write a program to transform your data, who is, ideally, your data analyst; and, above all,
- ❒ Support from the ***Family to Family*** planning and implementation committee.

Later on

As you move forward with your reforms, and with your analyses, your needs will certainly expand. You will want to add more data, from more systems. If you are receiving extracts on diskettes, you may want to explore more automatic ways to extract these data and send them to the reporting environment.

Once data sources are identified... preparing data... is the most time-consuming step in the analysis process.

Pay attention to building a routine process for extracting and distributing and transforming data.

You may also want to investigate more sophisticated data analysis packages, or more sophisticated ways to distribute management information. Do you want a central analyst to "mine" data interactively and distribute printed reports to others? Do you want to allow distributed users to "mine" their own data? There are tools to enable you to do either of these, ranging from the relatively simple to the extremely complex. Just remember that it's all too easy to be so dazzled by the technical possibilities that you never get started

How to find out more

As you explore technical issues, talk to the following—but be aware that technophiles love flashy technical solutions, and that flashy technical solutions may not be the best way to support self-evaluation.

- ❒ Information systems groups that support you now or that are involved in overall ***Family to Family*** planning and implementation. Are they using or supporting a particular package, and if so what is their experience with it? What specific hardware configuration is best? What general recommendations do they have?
- ❒ Colleagues. Does your state or county have a central data-analysis group? Are other agencies generating informative reports with local reporting packages? What about colleagues in other states?
- ❒ The vendors of potential statistical or database packages; and
- ❒ Periodicals and articles about technology.

THE DATA MODEL

Why We Need This Tool

In the overall context of the *Self-Evaluation Tool* there has been discussion of the importance of using data to establish where you are at the start of a reform and to measure how you're doing as you progress. This section addresses the need for there to be, at the core of a program's data collection system, a complete and comprehensive set of data elements which adequately support tracking of outcomes and self-evaluation. This comprehensive set of data elements can be generally referred to as a data model. The purpose of this tool is to facilitate building a data model to support self-evaluation by presenting a strategy for identifying the specific information to be collected and stored. Below are listed some of the major deficiencies of the data models of existing management information systems.

- ❒ **Legacy systems generally lack comprehensive, accessible data.** The legacy system is the term commonly used to describe the computer system that has been in use in an organization over a long number of years, and which was generally developed prior to the many and rapid-paced technical advances which have taken place since the system was implemented. In child welfare organizations around the country most legacy management information systems currently reside on an older architecture that is mainframe centric and often highly fragmented. On many of these systems, there is no direct flow from intake to assessment and investigation to out-of-home care information. Each function may reside on a separate module of the database, or sometimes on a different database which utilizes different hardware and software. Additionally, these databases have generally been designed for the primary reason of accommodating federal and state reporting requirements. The above factors, combined with routine purges of computer records, unreliable reporting of many items on the databases, and differences in the definitions and uses of data, make it difficult to answer questions about program functioning.

- ❒ **SACWIS requirements may not take self-evaluation and state-specific needs into account.** The Statewide Automated Child Welfare Information System (SACWIS) is a model for a comprehensive statewide child welfare management information system initiated by the U.S. Department of Health and Human Services Administration for Children and Families (ACF). The federal government offered states enhanced federal reimbursement for costs associated with the development and implementation of their SACWIS systems. As of July 1997, almost every state in the country is in some phase of development or implementation of SACWIS. The SACWIS model provides for a functionally rich and comprehensive system that addresses the major requirements of child welfare. However, SACWIS was not designed with self-evaluation in mind. Therefore, when developing their SACWIS systems, states must make certain that the specific data required for outcomes tracking, and for the various kinds of analyses to be performed as part of self-evaluation (e.g., cohort analyses and the population profile) have been included. Additionally, most states will continue to have locally driven

data needs and processes that fall outside of SACWIS. These data needs must be incorporated into any new systems development in order for a system to be responsive to a state's overall needs and to adequately measure program functioning.

- ❒ **Complete dimensions of the scope of data required for tracking outcomes and the self-evaluation are generally not included in current information systems models.** As indicated above, the legacy systems of the past were built primarily to support federal and state reporting requirements. Current SACWIS guidelines have expanded the functionality of child welfare information systems, but do not address the full scope of data needed for outcomes tracking. In addition to specific data elements (items of information), the dimensions of the scope of the data must be specified for a management information system to be responsive to the needs of self-evaluation. These include dimensions such as those related to time (e.g., desired retention of history of fields of information), geography, administration, population, and the level of detail required. The document entitled, "***Family to Family*** Data Recommendations," published October 18, 1996, provides a guide to aligning data elements with the goals of the ***Family to Family*** Initiative. Information for obtaining this document is presented in the "How to Find Out More" section of this tool.

In order for data to be suitable for use in self-evaluation, one has to understand the environment from which they are extracting.

The Data Model Tool

What is a data model? In the context of this tool, a data model means the specific data elements to be contained on the management information system where information is collected and stored. The specific data stored on the database of a management information system, along with the quality of those data, determine the extent to which a self-evaluation team can perform analyses which say something comprehensible and meaningful about the impact of reform. The following will assist you in maximizing the use of current databases as well as in building new databases.

Understand the data on current systems. In order for data to be suitable for use in self-evaluation, one has to understand the environment from which they are extracted. What data are collected? Are all the data that are needed actually being collected? How are the data that are collected defined? What is the quality of the data? The most frequent impediments to using data for evaluation include unavailability of information because it is not collected, inaccuracies and unreliability of the data, inconsistency in definition, uncertainty regarding meaning and various other factors related to the compatibility of data and their quality.

As we noted earlier, most child welfare programs throughout the country are currently undergoing information systems migration to new, comprehensive SACWIS systems. However, there are only a few states where SACWIS is already implemented. Most states, therefore, must rely for some time longer on data from their legacy systems to measure programmatic progress. When using data from current systems, having answers to the above questions is important. Obtain data dictionaries (when they exist). Meet with the systems people and the programmatic people in order to understand how data are defined and what they mean. There are often hidden idiosyncrasies to look out for. For example, address fields may be written over each time the address changes. If your analysis requires the original address, your results will not be accurate. Understanding the current data collection system at the onset of self-evaluation will minimize frustration and avoid misleading results.

Include representatives from the self-evaluation team in the systems development process. Early on in the development of a new system, the functional and data requirements of the system are established. The establishment of these requirements is generally facilitated by systems analysts working with the builders of the new system and typically includes interviews and other kinds of sessions with system owners and users. In order to ensure that the needs of self-evaluation are addressed, members of the self-evaluation team should take part in these interviews and sessions. It is at this juncture in the systems development life cycle that the opportunity exists to make known to the systems builders any particular data needs that might not otherwise be taken into account, as well as to address requirements pertaining to dimensions of scope such as geography and time.

Examine data requirements in the context of the goals of the reform. In formulating the data requirements for the self-evaluation, specified data needs should be cross referenced with the goals of the reform. This will enable you to see the extent to which goals are supported by data, and will also point up areas where data are missing. Cross-referencing will reveal where the planned system has failed to take outcomes tracking into account. The Data Categories and Dimensions (Figure 14) describes the data that support ***Family to Family*** goals in terms of dimensions of scope required for the three types of data analyses performed.

Define terms uniformly for all systems users. One of the major causes of poor data quality is the lack of uniform definitions for the fields of information contained on a system and inconsistencies in usage. This is particularly true among counties across a state because many localities develop their own processes, nomenclatures, and definitions for the same terms. Often these different definitions exist within a single locality. If there is to be good data for self-evaluation, a concerted effort must take place to establish a data model in which key terms have been defined uniformly and systems users within and across localities come to consensus with regard to data definition and usage.

Ohio: An Example

In January 1996, Metis Associates participated in the state of Ohio's project to develop a core data model for a statewide child welfare information system. This core data model was intended to provide the foundation for the state's new data environment, and to eliminate the problems of fragmentation, insufficient data, and limited functionality associated with their legacy system. The core data model was to be based on SACWIS requirements, meet the reporting needs of AFCARS and NCANDS, support case management, support the ***Family to Family*** self-evaluation and other program evaluation, and provide a statewide view of Ohio's child welfare system. All counties were to agree to the core body of information to be contained on the system, and to the definitions and usage of core terms.

The major challenge. The state of Ohio includes 88 state-supervised, locally administered counties, six (6) of which are metropolitan (Metro Counties), and the rest (Non-Metro Counties) which are smaller in size with a number of them being rural. The major challenge to achieving a statewide core data model was the perception among the counties that the differences among them dictated different requirements. This perception was rooted in an historical perceived difference between the needs of the Metro and the Non-Metro counties. However, that was not the only division. Generally, most of the 88 counties believed that their local processes could not be reconciled with the local processes of other counties.

FIGURE 14
Data Categories and Dimensions

Dimension	Cohort	Point-in-Time	Additional
Population	Children whose first out-of-home placement* occurs during the selected time; their birth families; and, where applicable, their foster families. **Must be able to distinguish initial and subsequent placements even if history is not retained.*	A child in any form of out-of-home placement at the selected time.	Children receiving in-home services and children who are subjects of abuse/neglect reports; families of those children and families receiving family support or family preservation services; and all foster care families, whether they have placements or not.
Administration	Children's services. F2F localities, comparison localities, and the entire state.	All agencies that place children in any form of out-of-home care.	Children in care: all agencies; other: applicable social services agencies.
Geography	A 6-month to 1-year date range, with each preceding cohort revisited when the next cohort is extracted.	F2F localities, comparison localities, and the entire state.	Entire state, with ability to focus on specific localities.
Time	Unit record, with common child ID and ability to match child to birth and foster families.	As of a particular day, repeated at 6-month or 1-year intervals.	From initial placement in out-of-home care through all subsequent placements, to exit from the system. Ability to capture all re-entries. History maintained.
Level of Detail	Open and closed retained on file. All prior history.	Unit record, with common child identifiers across agencies.	Unit record, with common child ID and ability to match child to birth and foster families.

A structure for change. One way that challenge was addressed was to form a working committee consisting of representatives from all the Metro Counties and from a proportionate number of Non-Metro Counties. Additionally, both program and systems staff at the higher levels participated as committee members. This latter factor was important because decisions had to be made which required the participation of individuals with the authority to make them. Committee representatives were then responsible for taking recommendations back to their counties so that they could be reviewed locally. State representatives were also on the committee, and other individuals were called in to attend sessions on specialized subjects, e.g., adoption. The meeting structure required frequent sessions (every two to three weeks), but were conducted by video conference so that participants would not be taken away from their localities.

Clear objectives. One of the essential ingredients to completing the work was the frequent review of our objectives, and obtaining formal consensual agreement to those objectives. We began by arriving at a common understanding of what a statewide child welfare information system would be in Ohio, i.e. that it would support the core data model which all 88 counties agreed to adopt, but that individual counties could have local extensions for non-statewide processes. Next, the scope of the functionality on which the data model would be based was established and agreed to. Empowerment of the worker/support of case management was the highest priority of the counties. To that end the system functions were to include intake and referral, investigations, risk assessment, case management, placement, resources, and other functions. The system also had to meet reporting requirements including AFCARS and NCANDS, and to support management information, program evaluation and the ***Family to Family*** self-evaluation, statistical analyses, and reimbursement claiming. Establishing the scope of the functionality provided the context for defining data to be included in the core data model.

Using what existed. The committee did not seek to reinvent wheels. Data models existed in two Ohio counties which had already embarked on new child welfare information systems development. A state model for an improved PC-based system for the Non-Metro counties also existed. These were used, studied, compared and synthesized.

Key terms and definitions. Key terms which comprised the major entities of the core data model received the major share of time and effort in obtaining consensus. Long, animated discussions of the definition of terms like *family* and *case* were part of the process. It was necessary, however, that the focus of these discussions be on essence of meaning rather than semantics and that the process keep moving.

The Core Data Model. The committee met regularly between March and July 1996. The result was the achievement of a core data model which reflected the functions mentioned above, along with their supporting data elements. The core data model has been presented to the appropriate Ohio administrators and adopted as the model for continued development of the statewide child welfare information system in Ohio. Please see the "How to Find Out More" section to obtain additional materials about the Ohio data model.

Empowerment of the worker/ support of case management was the highest priority of the counties.

What do you need? The Ohio example illustrates the main lessons to be learned in creating a core data model and provides a guide to getting started in a similar effort.

Nothing goes so far as to help a project along as a good team.

- ❒ **The working structure should be formally established.** It should include programmatic and systems staff, as well as bringing in individuals for specialized subjects. The pace needs to move briskly and work sessions should be frequent despite busy schedules. The use of video conference technology can help to balance the need for frequent work sessions with travel and time constraints.

- ❒ **The objectives should be clear and frequently reviewed.** Work sessions and agreements should be documented and based on a formal consensus. In building consensus, particularly with regard to achieving uniform definitions, emphasis should be given to essence and substance rather than semantics. Disparate views in this area generally emanate from semantic rather than substantive differences.

- ❒ **Make use of what exists.** If data dictionaries, entity relationship diagrams, and systems models exist from legacy systems, or from other systems designs, use them to build on.

- ❒ **Team Spirit and hard work.** Nothing goes so far as to help a project along as a good team. Ohio's working committee demonstrated great team spirit and did an enormous amount of hard work. Despite busy schedules and the pressing and emergent nature of work in the child welfare office, team members not only attended all sessions, but worked individually and in groups outside of the sessions. Whatever the perceived differences of counties about their needs, everyone came to the table with the goal of finding a common ground.

How to find out more

Listed below are resources for finding out more about building a data environment, the Ohio core data model, and SACWIS.

Books you might find useful include:

Martin, Merle P. (1995). *Analysis and design of business information systems* (2nd ed.). Englewood Cliffs, NJ: Prentice Hall.

Date, Chris J. (1994). *An introduction to database systems* (6th ed.). Reading, MA: Addison-Wesley Publishing Company.

Copies of the document entitled "***Family to Family*** *Data Recommendations*" can be obtained by contacting:

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New York, NY 10004
Rosalind Stevenson
212.968.4220

Information about the Ohio Core Data Model can be obtained by contacting:

Ohio Department of Human Services
Office of Family and Children Services
SACWIS Project
Becky Nichols
614.752.6191

SACWIS Requirements and IDS Data Elements are available on the Internet. You can access them through a search engine by entering SACWIS.

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