

---

---

**Intensive Home Visitation for Mothers of Drug-Exposed  
Infants: An Evaluation of the St. Louis Linkages Program**

---

by  
**L. Anthony Loman, Ph.D. and Dan Sherburne, M.A.**

**A Report of the  
Institute of Applied Research  
St. Louis, Missouri**

**April 2000**

---

---

Copyright © 2001 by the Institute of Applied Research  
111 N. Taylor  
St. Louis, Missouri 63122  
(314) 966-5101  
email: [\*\*iar@iarstl.org\*\*](mailto:iar@iarstl.org)  
website: [\*\*http://www.iarstl.org\*\*](http://www.iarstl.org)

This document may be copied and transmitted freely. No deletions, additions or alterations of content are permitted without the express, written consent of the Institute of Applied Research.

---

---

## Introduction

---

---

The Linkages program is operated in St. Louis and is a joint project of the Missouri Division of Family Services (DFS) and Catholic Community Services (CCS). Funding for the project was received through Prevent Child Abuse Missouri (the Missouri Chapter of the National Committee to Prevent Child Abuse). The present report considers outcomes and potential impacts of the program.

Linkages is designed to engage mothers of drug-exposed infants in intensive services that include regular home visitation for a period up to two years after the birth of the infant. Assistance provided includes referrals to basic services, such as housing, home furnishings, food, transportation, and financial assistance as well as assistance in entering and attending substance abuse treatment programs. Home visitors are paraprofessionals under the supervision of public health nurses. DFS Family-Centered Services (FCS) workers also continue to have contacts and deliver services to these families.

Candidates for Linkages are mothers in the city of St. Louis identified through Missouri's high-risk infant reporting system. Under this system, hospitals screen newborns for level of risk, including testing for prenatal exposure to drugs and alcohol. Hospitals

report all cases of drug and alcohol exposure to the Missouri Child Abuse and Neglect (CA/N) Reporting Unit, operated by the Missouri Department of Social Services. These reports are forwarded to local DFS offices in the same manner as child abuse and neglect reports. Local DFS offices are responsible for follow-up on mothers and infants. In St. Louis City, certain workers in the CA/N investigation unit specialize in such cases. They contact and interview mothers to determine whether court involvement and/or child removal is warranted and whether other services are needed. In many cases of drug or alcohol exposure, infants are removed from their mothers and placed in foster care. Infants also remain with their mothers. The Linkages program only accepts cases in which infants have not been removed from the home. Such cases have traditionally been opened for DFS Family-Centered Services. In a portion of these, Family-Preservation Services (FPS) are also offered. DFS identifies and refers appropriate cases referred to the Linkages program, where CCS is primarily responsible for service delivery.

---

---

## Methods

---

---

Although the Linkages evaluation was originally planned as a field experiment, several problems arose that

compromised the design. Consequently, the present analysis is based primarily on existing sources of program and service data.

In 1996 the Institute developed procedures for case selection and random assignment to experimental and control conditions. Data collection instruments were also designed to permit systematic observation of the condition of homes and interactions of mothers and children. Companion data were to be collected through interviews of parents. However, no financial support was forthcoming for the evaluation, and because field experiments require direct and close supervision, critical parts of the experimental design were never implemented. In mid-1999, after the program had been operating for over two years, the Institute agreed to examine available information and conduct any analyses that it found to be feasible.

DFS and Linkages staff had implemented random assignment to experimental and control conditions. As reports of high-risk newborns were received, cases in which infants were not removed and placed were randomly assigned either to the experimental condition (the Linkages program) or to a control condition. Linkages cases received services from the Linkages program, as well as DFS services. Control cases received standard DFS services only.

Because certain outcome data on family change, parent-child relationships, and home environment were not collected for the control cases, certain planned experimental-control comparisons could not be made.<sup>1</sup> Nonetheless, because staff did assign cases to experimental and control conditions, certain *ex post facto* comparative analyses were possible utilizing official data on cases. Information on subsequent child abuse and neglect hotlines and investigations was available for both Linkages and control families. In addition, ser-

vice and case progress information could be obtained from DFS case files. The following report is based on data from CA/N incident reports, the Alternative Care data system, written case records, and summary information provided by the Linkages program concerning services to Linkages families.

In mid-1999, lists of Linkages and control cases were assembled. Information was sought from the Linkages program about services offered to these families. A new data collection instrument was designed and used for this procedure. Linkages staff completed this instrument for all Linkages cases that had been opened. Complete information was obtained on closed cases along with partial information on recently opened cases. Only cases that were closed during this period were considered in this analysis.

Case files were requested from DFS for all Linkages participants and control cases. IAR staff reviewed each file and abstracted information about services, worker contacts, and case outcomes. Information from the CA/N data system maintained by the Missouri Department of Social Services was also reviewed for the mother in each case.

---

## Services Offered and Contacts in Linkages Cases

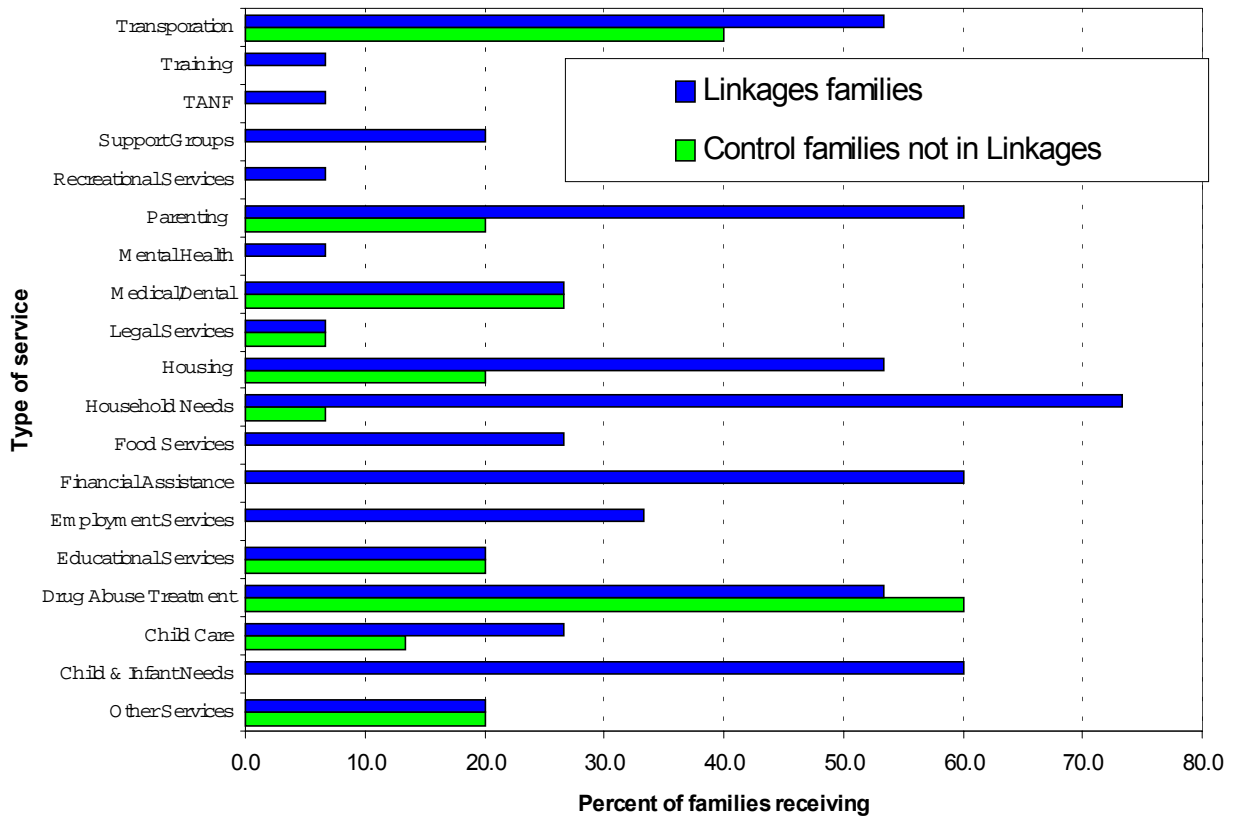
---

Through case reviews, information on services provided by DFS caseworkers was obtained on 15 control families that did not receive Linkages services. Detailed information was obtained on services supplied through the Linkages program to a sample of 15 Linkages clients.<sup>2</sup> The question for this analysis was: Did services to mothers of drug-exposed infants increase as a result of the Linkages program?

The comparison is shown in Figure 1. The services received by the women and children in the control cases may be regarded as representative of the level of services DFS cases of this kind generally receive, although the small number of cases involved in the analysis makes broad generalizations unwise. Usually the DFS representative involved with the family was a Family-Centered Services (FCS) worker; more rarely a Family Preservation Services (FPS) worker initially had the case. FPS is an intensive program of home visitation of up to six weeks in length. A small number of control cases received FPS services (see below). As is evident in Figure 1, in most instances more Linkages families were provided with or referred to services than control families.

Only Linkages cases received services such as referral to training pro-

grams and employment services, food services, direct financial assistance, and child and infant needs. It should not be inferred that DFS workers never provide these services to clients. On the contrary, they indeed provide such services, including to mothers of drug-exposed infants. Part of the problem in traditional DFS cases, however, is *engagement* of the mother in the service process. Because of their large caseloads, FCS workers have difficulty visiting families more than one time per month (see comparisons of visits in the next section). Consequently, the relationship with mothers is typically less intense and it is easier to lose contact with families than in a program such as Linkages, which aims at frequent home visitation. The comparison in Figure 1 appears to support the value of intense engagement in assuring that the basic needs of families are met. Services



**Figure 1. Percent Linkages and Control Families Referred to or Provided with Services**

were offered more frequently in most individual service categories to Linkages families. Linkages families also received more services overall than the non-Linkages control families. The kinds of services included under the general service categories of Figure 1 are shown in Table 1.

---

## Comparisons of Linkages and Control Cases

---

Data analyzed in this section were abstracted from DFS case files. DFS case files contain forms, computer printouts, and worker case narratives.

Table 1  
Examples of Services within Service Categories

<i>Service Category</i>	<i>Examples of Services Offered</i>
Transportation	Provided directly by workers
Training	referral to a Welfare to Work program
TANF	referral to TANF (earlier to AFDC)
Support Groups	Narcotics Anonymous
Recreational Services	Referral to a teen club, Six Flags tickets
Parenting	Enrollment in the Parents as Teachers program
Mental Health Services	Psychological evaluation
Medical/Dental Services	Physician referral, pre-natal classes, lead information, high risk infant referral, etc.
Legal Services	referral to legal assistance
Housing	General housing needs, Section-8 voucher, application, and listing; temporary and transitional housing; Queen of Peace housing; Russell House; FEMA housing
Household Needs	Utilities assistance, clothing, home repair, realty referral, furniture and household items, general assistance from community organizations
Food Services	Food supplied by workers, accessing food pantry, Focus program
Financial Assistance	Cash assistance, Easter/Christmas help
Employment Services	Job fair, JPTA, job programs, employment assistance, Employment Connections
Educational Services	GED
Drug Abuse Treatment	Drug rehabilitation services, C-STAR, providing information on Narcotics Anonymous, New Beginnings, Alanon
Child Care	Day care, Head Start, Step by Step
Child & Infant Needs	Infant formula, baby items (bed, toys etc.), car seat, school supplies, WIC
Other services	Life skills classes, CME Lab, Rowel

Although most case narratives are highly detailed, recounting important events surrounding contacts with families, services, and progress during the case, it is likely that emphasis and level of detail vary from one worker to another. On the other hand, the research value of case files depends on how they are used. Narratives tend to vary most in the nature of worker's interpretations of events occurring in cases, but DFS workers zealously record visits and telephone contacts along with the essential content of those contacts, the major events in cases, and the reasons for closing cases. Because these details were the primary focus of this study, it was believed that biases were minimized.

Case file reviews were conducted for 22 Linkages and 21 control cases. Of the total of 43 cases, 20 were opened during 1997 and another 20 during 1998. One case was opened at the beginning of 1999 and another two were already open in the DFS system when the high-risk infant reports that led to the present cases were received.

Among the linkages cases, 20 of the 22 mothers tested positive for cocaine at the time of the birth of the child, while the primary drug was marijuana for 1 mother and in another the particular drug was unknown (to researchers). In addition, 2 of the 20 tested positive for alcohol and another two for marijuana. Among the 21 control cases, the primary drug was cocaine (16), marijuana (3), morphine (1), and unknown (1). Other secondary drugs discovered were alcohol (2), marijuana (2), and heroin (2). Results of testing of infants were unknown to researchers in 13 of the 43 cases but in the 30 cases where this information was available the results of the drug test of the infants matched exactly those of the mothers.

The two sets of cases were quite similar in other ways as well. In the

Linkages families, 9 infants were born with low birth weights as compared to 8 of the control children.<sup>3</sup> Similarly, 7 of the Linkages infants were premature versus 6 of the control infants.<sup>4</sup> Only 5 infants were observed to experience drug withdrawal symptoms: 3 Linkages versus 2 control cases.

Concerning recidivism (one or more additional drug-exposed births), 10 Linkages mothers had given birth to drug-exposed infants in the past as compared to 9 of the control mothers. None of these differences was statistically significant. The high recidivism rates among both experimental and control mothers illustrate the difficulty in controlling this problem and the general ineffectiveness of current programs to address the issue.

---

## **Time to First Contact by a DFS Service Worker**

---

Workers from the DFS investigative unit typically contact mothers within a few days of the high-risk hotline report, unless the mother has moved or fled to another address. These workers coordinate removal and placement of the infant when necessary. Cases considered in this study are those in which removal of the child did not initially occur. Cases of this kind have traditionally been transferred to a Family-Centered Services (FCS) worker. Family Preservation Services (FPS) may be offered when removal of the infant is thought to be very likely but avoidable through home-based services. This is evident in the present set of control cases, where 5 were opened for FPS.<sup>5</sup>

The length of time from the investigation until FCS is sometimes lengthy, partly because of bureaucratic

delays in transferring cases from the investigative unit to a service unit, assigning the case to a caseworker by the supervisor, and initiating contact with the family by the FCS worker. For example, the mean time from the investigation to first contact by an FCS worker for 18 control cases where the exact dates of the investigation and the first FCS visit were available was 46 days. The gap between investigation and first FCS visit was 51 days for the 5 cases where family preservation services were offered. This amounts to a six-week delay, and can be a source of problems, particularly in cases where families need continuous services. It should not be assumed, however, that no services are delivered until the arrival of the FCS workers. Workers from the investigative unit sometimes initiate emergency services.

The mean time to first FCS contact for the 22 Linkages cases was 48 days. Linkages participation, therefore, had no appreciable effect on the gap between investigation and FCS worker contact within the DFS system. However, referral to Linkages and occurred very quickly in most cases. The average was 13 days for 19 cases and in most instances contact with families began shortly thereafter.<sup>6</sup> Referring to a home visitation unit as a standard procedure, therefore, can be assumed to shorten gaps in services and reduce the likelihood that families will move away and be lost to the agency.

---

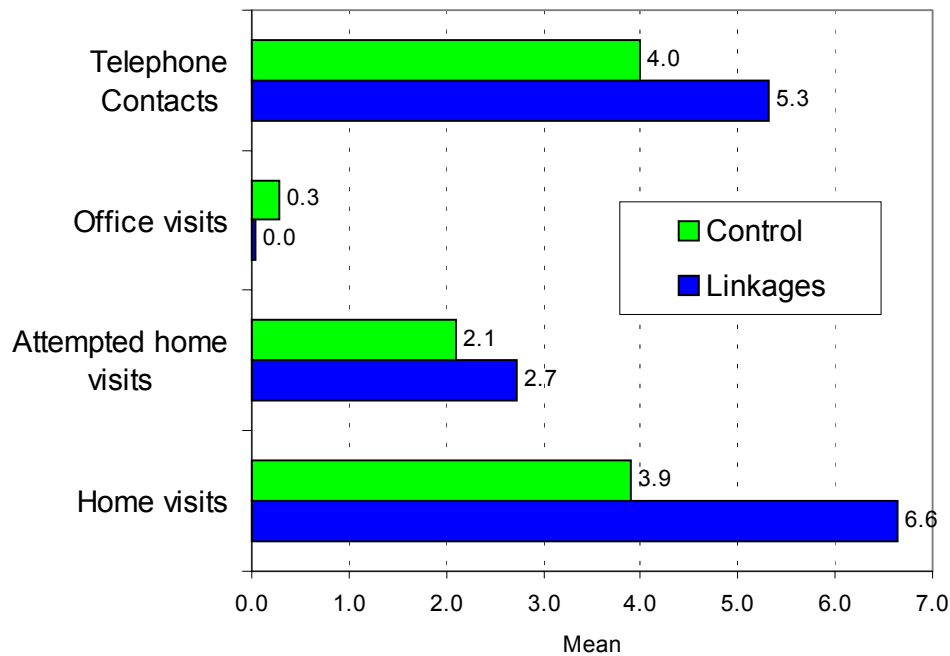
## Visits

---

One of the effects of Linkages participation was an increased number of DFS home visits and telephone contacts. The average numbers for Linkages families as compared to control families are depicted in Figure 2. DFS workers averaged 6.6 home visits with Linkages families as compared to 3.9 for control families. The statistical significance of this difference was .067, which is a statistical trend. There were also more telephone contacts and slightly more attempted home visits with the women in Linkages cases. However, due to small sample sizes, the differences were not statistically significant. Nonetheless, contacts of all kinds were consistently higher for Linkages cases (with the exception of nearly non-existent office visits), which supports the conclusion that the differences were real and not simply random variations between the experimental and control conditions.

Linkages families received an intense regimen of visits and other contacts that were over and above the contacts by DFS workers considered here. For cases in which data were available, Linkages workers averaged 13.5 home visits per family, 13.9 telephone contacts, as well as office visits and a large number of attempted home visits. The differences evident in Figure 2 can be assumed to be the result of more intense relationships and more regular visits of Linkages workers with families that entered the program. One of the problems in cases of this kind is that families that are not visited frequently move away leaving no forwarding address. Regular visitation by Linkages workers appeared to reduce loss of contact with mothers and children for DFS workers as well.





**Figure 2. Home and Office Visits and Telephone Contacts with Linkages and Control Families by DFS Workers**

---

## Treatment

---

Linkages mothers attended drug and alcohol treatment programs and made greater progress towards completion than control mothers. Most were enrolled in the Queen of Peace (QoP) program that is also operated by Catholic Community Services. Among Linkages cases, five mothers (22.7 percent) attended and completed all phases of QoP program, as compared to two mothers (9.5 percent) among control cases. Another six Linkages women (27.3 percent) completed inpatient treatment at QoP but not the later phases of the program as compared to three control women (14.3 percent). One person among the control cases completed a treatment program at another facility. Together this tallies to 50.0 percent of Linkages mothers com-

pleting at least the inpatient phases of a drug and alcohol treatment program as compared to 39.5 percent of control mothers. On the other hand, six control mothers (28.6 percent) attended no treatment program at all, as compared to one Linkage mother (4.5 percent).<sup>7</sup> In a number of cases of unsuccessful treatment or participation in treatment the women re-entered programs a second or third time while the case was open. All such cases ended in failure.

Similarly, the Linkages program may have been instrumental in keeping more mothers drug free for longer periods. Among Linkages cases, five mothers (22.7 percent) stopped using drugs for a brief period as compared to four control cases (19.0 percent) and twelve Linkages mothers (54.5 percent) were drug free for a lengthy period as compared to six control mothers (28.6 percent). Combining these percentages, 77.2 percent of Linkages mothers were known to have stopped using drugs for some period of time as com-

pared to 47.6 percent of control mothers. At the close of the case, it was known that ten Linkages mothers (45.5 percent) were *not using* drugs or alcohol as compared to six control mothers (28.6 percent).

Most of the women made some attempt to participate in drug and alcohol treatment, and although the Linkages cases were more successful on average at the end of the case, most participants failed to complete programs (at least 50 percent of Linkages cases and 60.5 percent of control cases). Linkages mothers seemed to be more successful in staying away from drugs while cases were open, but this was apparently not true of half of the linkages cases and nearly three-quarters of the control cases. Furthermore, a large minority of both groups had given birth to drug-exposed infants in the past (see page 5). If we assume that treatment programs and remaining drug free are beneficial in averting future births of this kind and enhancing the welfare of the children already born, the Linkages approach of intensive home visits appears to be more successful. However, to achieve greater success it is likely that intensive services may have to be coupled with other institutionalized programs, such as Family Drug Courts.<sup>8</sup>

---

## Removal of Children in the Case-Review Sample

---

All of the cases in the study, both Linkages and control, involved infants that initially had not been removed from the home and were living with their mother. If DFS workers determine that the children may be in danger during the course of the case infants may be removed and placed outside the home. Among the 21 control cases, 7

of the infants (33.3 percent) were later removed and placed as compared to 3 of those in Linkages cases (13.6 percent). In a few other cases the mother informally placed the child with relatives.

DFS itself also commonly placed infants in these cases with relatives (two of the Linkages and five of the control infants); two control children were placed in a hospital or other medical facility and one was placed in a pre-adoptive home.<sup>9</sup>

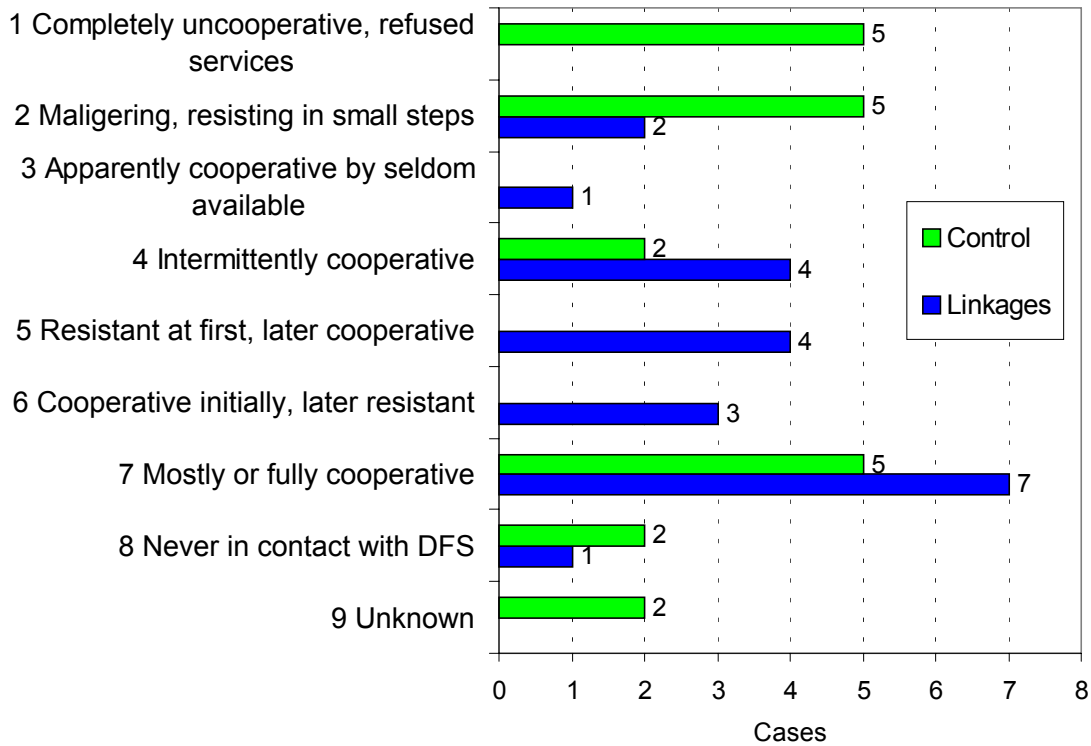
---

## Cooperation with DFS

---

The level of cooperation with DFS in high-risk infant cases is generally low. Many of these mothers already have had other children removed. The removal of the child or the threat of removal is often insufficient to motivate the mother to cooperate with workers and to continue participating in treatment. In the absence of these two threats, DFS workers must fall back on their own abilities to persuade and cajole mothers to participate and cooperate. This is very difficult to do, particularly in cases where the mother may have resumed drug use.

By reviewing worker's narratives, researchers were able to code the overall level of cooperation of families with DFS. Seven categories were used that ranged from completely uncooperative to mostly or fully cooperative. These can be seen in Figure 3. The level of cooperation was somewhat better in the Linkages cases. Category 5 in Figure 3 (resistant at first but later cooperative) and category 7 (mostly or fully cooperative) might be considered the most positive responses. Of the 22 Linkages cases 11 were considered to be in one of these two categories, while only 5 of the control cases were categorized in



**Figure 3. Level of Cooperation of Linkages and Control Parents with DFS**

this way. On the other hand, category 1 (completely uncooperative) and category 2 (maligering) are the most negative responses. Of all the control cases, 10 fell into these categories as compared to 2 Linkages cases. The Linkages services would appear to have affected the level of cooperation that these families exhibited with DFS.

---

### Status at the close of the DFS Case

---

Judgments were also made based upon worker narratives of the state of the mother and the child and the stability of the living situation at the end of the case or at the time of the last contact with the family.

In the Linkages group, the child and mother were considered to be doing well at the close of the case in 10 instances (45.4 percent). The same could be said about 6 control cases (28.6 percent). In a number of these the living situation was uncertain, however. Various other more negative situations were found in other families. In several, while the child was thought to be okay, the mother was considered to be shaky or likely to be using drugs again, and the living situation either uncertain or unstable. In others, the child had been removed or DFS had simply lost contact with them. Slightly more of the Linkages cases had positive outcomes by the conclusion of the case, but the majority of cases, both experimental and control, were not known to be resolved positively.

---

---

## Later Outcomes for Families in the Full Sample

---

---

Data from the DFS MIS were available for a larger set of cases. The analysis included 34 Linkages Cases and 37 control cases. Each had been assigned through the random experimental procedures that were part of the original research design and, therefore, can be assumed to be roughly equivalent groups. Information from the CA/N reporting system and from the Alternative Care system maintained by DFS was obtained for each of the 71 mothers in these cases.

---

---

## New Hotline Reports

---

---

Each case began with a hospital report of a drug-exposed and/or alcohol-exposed infant. In a few instances, the hotline unit simultaneously (within one or two days) received reports of child abuse and neglect on the same mother. These were not counted in the following analysis, which considered only new reports that were received 30 days or more after the initial high-risk infant report. A number of these individuals had a past history of CA/N reports prior to the high-risk infant report. These reports were also excluded from the following analysis.

Every report was counted without regard to subsequent action by DFS. Hotline reports are indications that someone, more often than not a professional, suspects that children are in danger or are being harmed. In Missouri, fewer and fewer hotline reports are being investigated as the state shifts to the multiple response approach in which family assessment workers

rather than CA/N investigators conduct initial home visits. In addition, DFS created the category of “mandated reporter” report several years ago. These reports are not considered to rise to the level of a need for a home visit or investigation, but because professionals who are required to report under state law make the reports, they are nonetheless transmitted to local offices. Local offices have the discretion to follow-up on such reports based on their knowledge of the family and conversations with the mandated reporters. The present analysis considers each report as a *potential* danger signal. Children in such cases may be thought to be, on average, at greater risk to their safety. Furthermore, subsequent hotline reports may be an indicator of *failure of prevention efforts*.

The percentage of cases with subsequent reports among Linkages and control families can be seen in Figure 4. Linkages cases have fewer subsequent hotline reports, although the difference illustrated (54.1 versus 41.2 percent) is not statistically significant.

The kinds of subsequent reports are also revealing. Only one of the Linkages mothers subsequently gave birth to another drug-exposed baby, as compared to three of the control mothers. None of the reports on Linkages families resulted in *substantiated* investigations as compared to six of the reports on control families.

---

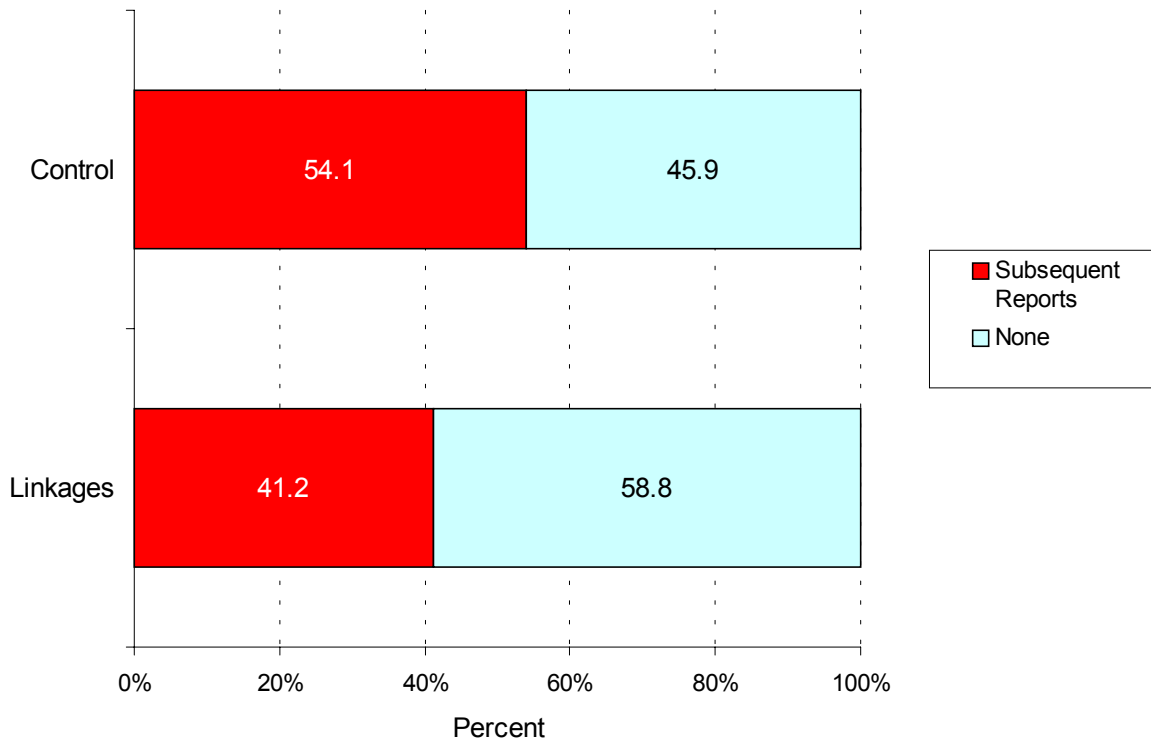
---

## Subsequent Child Removals

---

---

Another negative outcome concerns subsequent removals of children from the home. As noted earlier, in all these cases the infants were initially permitted to remain with their mothers. After some months certain children were removed from families. In some



**Figure 4. Subsequent Hotline Reports in Linkages and Control Cases**

instances the removed child was the baby that had been exposed to drugs. In other cases, older children in the family were removed. These removals, then, indicate a subsequent crisis within the family, in which an investigator, a family assessment worker, or a case-worker believed that the safety of the children was so seriously threatened that they could no longer remain in the home. The difference between Linkages and control families is shown in Figure 5.

A much higher percentage of control cases experienced subsequent removals and placements of children than Linkages cases. The difference (43.2 versus 17.6) was statistically significant ( $p < .02$ ).

---

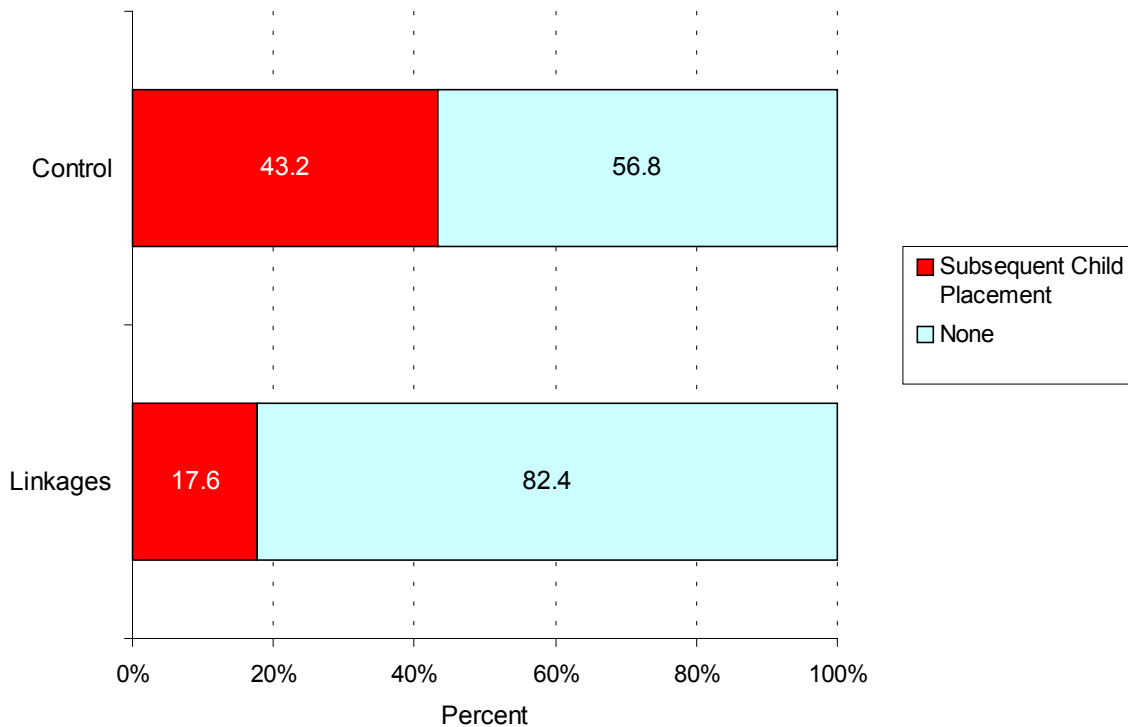
## Summary of Findings and Conclusions

---

Comparison were made of services offered to Linkages families and those offered to a control group of non-Linkages families. A broad range of types of services were considered, including transportation, housing, drug abuse treatment, child care, food and nutritional services, and many others.

- Services were offered more frequently in most individual service categories to Linkages families. Linkages families also received more services overall than the non-Linkages control families.

Comparisons were made between a sample of 22 Linkages and 21 control families on a variety of program out-



**Figure 5. Subsequent Child Removals in Linkages and Control Cases**

comes, utilizing information collected from DFS case files.

- Most of the mothers in both groups tested positive for cocaine at the time of the birth of their child. In a minority of cases other substances were also detected including marijuana, morphine, heroin, and alcohol.
- Drug tests of infants in all cases in which data were available matched exactly the drugs detected in their mothers.
- The two sets of cases were also similar in other ways, including the proportion of low-birthweight babies, premature births, infants with drug withdrawal symptoms, and past births of drug-exposed infants.
- The time from the beginning of the initial home visit by DFS investigative staff until the first visit by DFS service workers was calculated. No significant differences were found between Linkages and control cases. The time ranged from six to seven weeks on average. However, Linkages families were referred to the program in less than two weeks in most instances and intensive home visits by Linkages workers began shortly thereafter.
- DFS workers made significantly more visits to Linkages families (mean of 6.6 visits per family) than to non-Linkages families (mean of 3.9 visits per family). In addition, the average number of telephone contacts was higher in Linkages cases. Beyond the increased number of contacts by DFS workers, Linkages cases also averaged 13.5 home visits and

13.9 telephone contacts per case by workers in the Linkages program.

- Linkages mothers attended drug and alcohol treatment programs and made greater progress towards completion than control mothers. Most were enrolled in the Queen of Peace (QoP) program that is also operated by Catholic Community Services. Among Linkages cases, five mother (22.7 percent) attended and completed all phases of QoP program, as compared to two mothers (9.5 percent) among control cases. Another six Linkages women (27.3 percent) completed inpatient treatment at QoP but not the later phases of the program as compared to three control women (14.3 percent). One person among the control cases completed a treatment program at another facility. Together this tallies to 50.0 percent of Linkages mothers completing at least the inpatient phases of a drug and alcohol treatment program as compared to 39.5 percent of control mothers. On the other hand, six control mothers (28.6 percent) attended no treatment program at all, as compared to one Linkages mother (4.5 percent).
  - The Linkages program may have been instrumental in keeping more mothers drug free for longer periods. Among Linkages cases, five mothers (22.7 percent) stopped using drugs for a brief period as compared to four control cases (19.0 percent) and twelve Linkages mothers (54.5 percent) were drug free for a lengthy period as compared to six control mothers (28.6 percent). Combining these percentages, 77.2 percent of Linkages mothers were known to have stopped using drugs for some period of time as compared to 47.6 percent of control mothers. At the close of the case, it was known that ten Linkages mothers (45.5 percent) were *not using* drugs or alcohol as compared to six control mothers (28.6 percent).
  - Most of the women made some attempt to participate in drug and alcohol treatment, and although the Linkages cases were more successful on average at the end of the case, most of the women failed to complete programs (at least 50 percent of Linkages cases and 60.5 percent of control cases). Linkages mothers seemed to be more successful in staying away from drugs while cases were open, but this was apparently not true of half of the linkages cases and nearly three-quarters of the control cases.
  - Among the 21 control cases considered in the case review analysis, 7 of the infants (33.3 percent) were later removed and placed during the course of the case as compared to 3 infants in Linkages cases (13.6 percent).
  - Of the 22 Linkages cases 11 were considered to be generally cooperative of these two categories, while only 5 or the control cases were categorized in this way. Of all the control cases, 10 were considered generally uncooperative as compared to 2 Linkages cases. The Linkages services would appear to have affected the level of cooperation that these families exhibited with DFS.
  - Slightly more of the Linkages cases had positive outcomes by the conclusion of the case, but the majority of cases, both experimental and control, were not known to be resolved positively.
- Data from the DFS MIS was available for a larger set of cases. There were 34 Linkages Cases and 37 control cases in this analysis. The analysis examined new hotline reports and later child removals.
- Linkages cases have fewer subsequent hotline reports, although the difference in proportions between Linkages and

control (54.1 versus 41.2 percent) was not statistically significant. Only one of the Linkages mothers subsequently gave birth to another drug-exposed baby, as compared to three of the control mothers. None of the reports on Linkages families resulted in *substantiated* investigations as compared to six of the reports on control families.

- A much higher percentage of control cases experienced subsequent removals and placements of children than Linkages cases. The difference (43.2 percent control families versus 17.6 percent for Linkages) was statistically significant ( $p < .02$ ).

The findings of this study support the conclusion that the Linkages approach of intensive support through home visitation led to increased services to families and increased contacts of families with caseworkers in a position to offer assistance. Linkages clients completed substance abuse treatment programs more frequently and they remained drug free for longer periods. Despite the *relative* success of the program, however, large proportions of the mothers that participated in Linkages and the control group mothers failed in treatment and began using drugs again. That so many of these clients were long-term drug users with other drug-exposed births in their past suggests a need to couple the more intense service orientation of the Linkage approach with programs, such as Family Drug Court, that combine social and program support with positive incentives and short-term coercive approaches to bring the mothers into compliance with a regimen of services and substance abuse treatment.

Longer-term outcomes also appeared to be more positive. Fewer new calls to the CA/N hotline, fewer new drug-exposed births, fewer substantiated investigations, and fewer subsequent removals and placements of children all point to the positive consequences of the program.

---

<sup>1</sup> Some home observations and interviews were conducted for Linkages families, but not for control families. In addition, the data collection design also involved follow-up observations and interviews at three to six month intervals. Follow-up data collection was completed on none of the control families and on only a handful Linkages families.

<sup>2</sup> These two groups represent sub-samples of those assigned to the entire experimental and control groups for which full service information was available.

<sup>3</sup> Low birth weight was taken as 5.5 pounds or less.

<sup>4</sup> Prematurity was coded as gestation of 37 week or less.

<sup>5</sup> In the DFS system, FPS is treated as a special service, usually six weeks in length, within Family-Centered Services. Thus, all FPS cases are also FCS cases. A specialized FPS worker delivers services during this period. An FCS worker is simultaneously assigned to the case, although that worker usually is not actively involved with the family until the FPS case is concluded. At that point, unless the child is removed and placed, the FCS worker takes the case over in the capacity of FPS aftercare.

<sup>6</sup> The date of Linkage case opening was missing in one case and two other cases were not referred to Linkages for over five months.

<sup>7</sup> The remainder of cases examined started but did not complete programs, were still in treatment (1 Linkage and 1 control case), or attendance in treatment was unknown.

<sup>8</sup> In Family Drug Courts participating in drug treatment and remaining drug free are required of parents to avoid jail time or other penalties. Parents typically participate in the drug court process for a period of one year. The courts also oversee and insure that financial, social, and psychological supports remain in place.

<sup>9</sup> Homelessness is a common source of child endangerment in such cases. Women with a history of crack cocaine addiction often experience increased difficulties in finding and maintaining housing. This occurs for several reasons. They are typically poor and often spend the cash they have, including that from welfare and food stamps, on drugs. Consequently, maintaining rent payments for an extended period is



---

difficult. Over time they use up the good will of relatives and friends in various ways—including unpaid loans, stealing money, leaving children with others for long periods, and drug use in others' homes—and become outcasts from their own families and friends. Thus, homelessness is a common occurrence.