Appendix 1
Technical Report on Experimental Design

The Child Support Demonstration Evaluation has used an experimental design to assess the impact of a full pass-through of child support on the establishment of child support orders and paternity, the payment and receipt of child support, the use of public assistance programs, and labor force participation of parents.

The analyses reported in the main section of the report have relied on data gathered from the state of Wisconsin's administrative data systems to evaluate the experiment. This appendix provides information on the design of the experiment, its implementation, the sources and quality of the data available for the analyses, and the methodology used in the analyses. In Section 1, we describe the original evaluation design, problems faced in implementing this design, and the strategies used to overcome them. Section 2 documents the administrative data sources that we used. Section 3 describes how we selected our final research population. Section 4 discusses whether the experimental and control groups are equivalent, examining whether there was a difference in the rate of entry to W-2 between those in the experimental and control groups within each cohort. Section 5 compares the characteristics of the experimental and control groups in our final sample. Section 6 includes a discussion of the method we used to evaluate the effects of the full pass-through and to compare effects for the two cohorts.

1. Design and Implementation of the Experiment

In contrast to AFDC, which provided an entitlement to cash assistance with limited work requirements, TANF-funded assistance is generally limited to 5 years, with recipients required to work within 2 years. Wisconsin has adopted a work-first model; the philosophy and structure of W-2 emphasize immediate employment. Under W-2, almost all participants are placed in one of four tiers of employment or employment experience. W-2 tiers and payments are summarized in Table A1.1. The most job-ready applicants are provided case management services to help them find an Unsubsidized Job on the open market or improve their current job status. Trial Jobs provide work experience in jobs for which the state provides a partial subsidy to the employer. Participants in these two upper tiers receive no cash payments from the state (but may receive a variety of ancillary services). Community Service Jobs are public service jobs for which participants receive a monthly W-2 payment of $673. W-2 Transition is for those least able to work, either because of their own disability or because of the need to care for a child with a disability. W-2 Transition participants receive a monthly W-2 payment of $628. In addition to these four tiers, the Caretaker of Newborn tier provides, for parents caring for a child younger than 13 weeks, a monthly payment of $673 and exemption from work requirements. Those in the lower tiers receive the full amount only if they meet the time requirement; otherwise they lose $5.15 per hour of nonparticipation. Consistent with an approach that tries to replicate the "real world of work," W-2 is available to all low-income families with children, not merely single-parent families.

Other programs also provide assistance to low-income families. The federal Food Stamp program provides vouchers for food purchases and Medicaid (referred to as Medical Assistance in Wisconsin) provides health coverage. In addition to these federal programs, a new state program providing child care subsidies became available to low-income families at the same time W-2 was being implemented. Moreover, in July 1999, BadgerCare began, providing health coverage to a broader range of low-income families with children than does Medicaid. All these programs have been "delinked" from the W-2

program so that low-income families can receive services regardless of whether they are participating in one of the tiers of W-2.[49]

Table A1.1
The Four Tiers of Wisconsin Works

Tier	Income/Payments	Time Requirement	Program Time Limit
Unsubsidized Job	Market wage	None	None
Trial Job (W-2 pays maximum of $300 per month to the employer)	At least minimum wage	40 hours per week	3 months per placement with an option for one 3-month extension; total of 24 months over all Trial Job placements
Community Service Job	$673 per month	30 hours per week, plus up to 10 hours per week in education and training	6 months per placement with an option for one 3-month extension; total of 24 months over all Community Service Job placements; extensions permitted on case-by-case basis
W-2 Transition	$628 per month	28 hours per week of work activities, plus up to 12 hours per week in education and training	24 months; extensions permitted on case-by-case basis

Note: A final category, Caretaker of Newborn, provides $673 per month for parents caring for a child younger than 13 weeks.

The original evaluation design called for 8,000 cases to be selected into the experiment, half coming from the stock of AFDC cases active in August 1997 and the rest being drawn from cases applying for assistance after the implementation of W-2 in September 1997. The random-assignment code was made by the automated management information system of the Wisconsin Department of Workforce Development, CARES. Custodial parents were to be informed of their experimental assignment and how their child support payments would be handled when they applied for W-2.

In the experimental design, individuals receiving AFDC payments when W-2 began and those individuals who requested assistance after the implementation of W-2 were randomly assigned to one of two pass-through eligibility statuses. Those assigned to the control group received a portion of the amount of child support paid on their behalf. Those in the experimental group received the full amount

[49]These related programs have higher income limits than W-2. Food stamps are available to those with gross income less than 130 percent of the federal poverty line. Medicaid has different eligibility requirements based on the age of the child. Child care subsidies are available to families with incomes up to 185 percent of the federal poverty line at the time of application. Beginning July 1, 1999, all members of families with children who have incomes below 185 percent of the poverty line and who do not have health insurance became eligible for BadgerCare, the new CHIP program in Wisconsin. Eligibility for BadgerCare continues until income reaches 200 percent of the poverty line.

paid by the noncustodial parent. The experimental group was randomly divided into a group expected to be included in the evaluation analysis, and a second group also receiving the full pass-through, but not originally part of the evaluation.

Because the rate of new entrants to W-2 was slower than anticipated, the assignment rates for new cases were changed over time. Among the initial AFDC cases in August 1997, and from September 1997 through March 16, 1998, 20 percent of cases were assigned to the control group, 20 percent to the experimental group, and the remainder to the experimental group not initially included in the evaluation. It quickly became clear that the rate of new entrants into W-2 was slower than expected, so the percentage of cases assigned to experimental and control status was raised: first, on March 17, 1998, the percentages assigned to experimental and control were raised to 30 percent each, and then on May 11, 1998, the percentages were raised to 50 percent in each experimental and control group.

Because both the experimental cases and the other full pass-through cases not initially included in the experiment received the same full pass-through treatment, we have combined these two groups and consider them together the experimental treatment group. This makes the CSDE an unusual experiment: in most designs, the majority of cases receive the traditional "control" policy and only a smaller group receives the experimental treatment. Here the majority of cases (80 percent early on, falling to 50 percent later) receive the experimental treatment. Because of these changes in assignment rates to treatment groups, analyses need to control for changing rates over time, either by using weights or by controlling for the assignment regimes in regression analyses.

Random assignment of new entrants continued through July 8, 1998, when a code error in the administrative data system caused all incoming W-2 cases in Milwaukee County that should have been assigned to the control group to instead be assigned to receive a full pass-through. After the discovery of this assignment error the decision was made to restart random assignment in Milwaukee County on January 1, 1999. Random assignment then continued throughout the state until June 30, 1999.

This assignment error divided the W-2 caseload into three groups, or "cohorts": Cohort 1 consisted of cases entering W-2 between September 1997 and July 8, 1998; Cohort 2 consisted of cases which entered between July 9, 1998, and December 31, 1998, but only in counties where random assignment was performed correctly (i.e., all counties except for Milwaukee); and Cohort 3 consisted of cases entering W-2 in the first half of 1999.

A previous report analyzed the effects of the full pass-through policy only among the Cohort 1 cases.[50] There are good reasons, however, to think that there may be differences in the effects of the experiment between cases which entered in Cohort 1 and those which entered in Cohort 3. Cases in Cohort 1 entered W-2 during a time when many administrative changes were occurring to the public assistance programs in the state. The full pass-through policy was new at this time, and although both W-2 and child support workers were trained in this new policy, a full understanding of the policy and its consequences for W-2 participants may have been subsumed in the larger changes occurring as the state transitioned from the old AFDC program to the dramatically different W-2 program. Cohort 3 cases entered at a time when W-2 was well established, in less administrative flux, and better understood by workers and recipients. In addition workers' understanding of the full pass-through policy may have been

[50]See *W-2 Child Support Demonstration Evaluation, Phase 1, Final Report* (2001).

enhanced by additional training in the policy conducted in Milwaukee concurrently with the restarting of random assignment in January 1999.

The Cohort 3 caseload is quite different from the Cohort 1 caseload. Cohort 1 contains a large number of cases which had been on AFDC in 1997 (most for a long period before that), while Cohort 3 is composed primarily of new entrants to W-2 with no recent experience on AFDC. We might expect that cases with recent AFDC experience might be different in two important ways: (1) long-term AFDC use may be a sign that these cases are economically worse off, harder to employ, and more dependent on public assistance, and (2) cases with immediate experience with the old pass-through policy may take longer to understand the new policy than those cases without that experience.

The present report continues the analyses conducted in the Phase 1 Final Report by emphasizing the differences in experimental effects between Cohort 1 and Cohort 3. In addition, results reflecting the experiences of the Cohort 2 group (only those cases outside Milwaukee County) are presented in Appendix 2.

An additional implementation error occurred between September 2000 and February 2001, when, as a result of a coding error in the CARES system, information about most control-group cases receiving W-2 benefits during this time was not passed on to KIDS. Since the partial pass-through treatment for control-group cases is dependent on the case receiving W-2 benefits, almost all cases which should have had only a partial pass-through of any child support during these months had a full pass-through instead.

Of the 1,012 control-group cases in our Cohort 1 and Cohort 3 samples which received any W-2 payments during these six months, W-2 payments for 867 were not reported to KIDS and the cases were subject to the full pass-through policy during this time. Thus very few cases had the potential to experience control-group treatment during this time so that any effects of the experiment would be very difficult to observe. The future behavior of control-group cases which experienced the incorrect treatment may also be affected by that experience. Thus, any longer-term results we might observe would also be difficult to interpret.

To deal with this issue in the current report, we have limited our analysis of outcomes to those time periods which occurred before September 2000. For Cohort 3 this allows us 5 quarters of time to observe experimental effects, as the last cases in Cohort 3 entered in June 1999. Our comparisons in the main section of this report are thus limited to the quarter of entry into W-2 and the four subsequent quarters.

In Appendix 3 we present longer-term results, noting the difficulty of interpreting outcomes after September 2000.

2. Data Sources

The data for these analyses come from the three administrative-record databases described below. Records from these three data sources were linked to each other by use of Social Security numbers. When the Social Security number was missing or duplicate numbers were found, we linked by name, gender, and/or birth date.

CARES

CARES records include information on W-2 participants (case history, tier placement, payment history, sanctions) and information on public assistance to low-income families, including Food Stamps, Medicaid, and child care. CARES data are available by case, parent, or child, and include such demographic information as birthdate, number of children, family composition, marital status, educational background, and residential location, as well as household earnings. CARES also identifies the research group for the study.

CARES data were used to identify selected cases and to monitor and measure the use of W-2 (cash payments and child care copayments and subsidies). For families that left the W-2 program, but still participate in the federal Food Stamp and Medicaid programs, eligibility history, payment levels, family income, and some demographic information are also available on CARES. Data are entered into CARES at application and updated at eligibility redetermination, or more often at workers' discretion. Eligibility is redetermined monthly for W-2, every three months for food stamps, and every six or twelve months for Medicaid. Under BadgerCare, eligibility is redetermined every twelve months. Additionally, under all programs, participants are to report changes in income and family situation as they occur.

KIDS

KIDS data contain information on child support orders, payments, and arrearages, the method of payment (wage withholding, tax intercepts), destination of the payment (custodial parent, state), demographic information about the parents and children in the case (birthdate, residential location of both parents), child support case history. KIDS can include information about dates of marriage and divorce and usually contains information on the date of paternity establishment for nonmarital children. KIDS also includes some cases without child support orders, but with child support potential: paternity cases in which the paternity adjudication process has begun, cohabiting paternity cases, and cases in which no child support order has been made owing to extenuating circumstances, such as the economic situation of the noncustodial parent, problems in locating the noncustodial parent, good-cause cases, and parental stipulations of no order. Finally, KIDS cases are matched on a regular basis with data from the New Hires data system, so information on the employment of both parents should be incorporated into KIDS. The KIDS system is also updated nightly with data from CARES. KIDS has valuable information on child support, but there are limitations. KIDS does not include informal payments of child support—payments made in cash or in kind—nor informal changes in order agreements or physical placement of children. KIDS also does not include reliable information on legal custody, or indicate cases in which there is substantial physical placement with the noncustodial parent.

CARES and KIDS data are extracted by IRP once per calendar quarter, two weeks after the end of the quarter.

Unemployment Insurance Wage Files

Unemployment Insurance (UI) wage file data provide quarterly earnings, for individual covered workers, by employer. "Covered" workers include about 91 percent of Wisconsin workers. Excluded workers in Wisconsin are the self-employed, commission sales workers, farmers, church employees, and employees of not-for-profit organizations with fewer than four workers. There is a lag time of 6–9 months between the end of a quarter and the time at which the information is complete. The wage file

contains information only on individuals working in Wisconsin. It does not contain information on the hourly wage, or on the number of hours worked per quarter.

3. The Selection of Cases for Analysis

IRP staff extract records from the CARES system once every quarter, two weeks after the end of the quarter, allowing time for entry of data pertaining to the last month of the quarter to be completed. This extraction includes information on all cases on AFDC on August 31, 1997 (whether or not they subsequently transferred into the W-2 program), and all new requests for assistance (RFA) after August 1997 (also regardless of whether they actually entered W-2). The W-2 program began accepting participants as of September 1, 1997. All new applicants for public assistance after September 30, 1997, were supposed to be considered for the W-2 program, but administrative errors did lead to a few cases being considered for AFDC after that date. County welfare agencies then had until March 30, 1998, to transition all outstanding AFDC program participants to the new W-2 program. Cases that were on AFDC and did not transfer to W-2, or transferred to W-2 two or more months after exiting AFDC, or who requested assistance but did not actually enter an assistance group, are considered "diverted" cases and are not selected for our main analyses (they are included in the diversion analysis, below).

For the current analysis we only examine cases headed by a mother that entered W-2 (either as a new applicant or as a transitioned AFDC case) on or before July 30, 1999.[51] In the CARES database there are 28,150 mother-headed cases that entered W-2 and were assigned to a treatment group from September 1, 1997, to June 30, 1999. Of these, 21,133 entered during Cohort 1 and 3,341 entered during Cohort 3.

From these samples we deleted several groups of cases. Some cases were, by the rules of evaluation implementation, not eligible to have child support retained by the state, so no cases in these groups received the control treatment. These included:

A. Cases that received SSI for a child with a disability. Because federal law does not allow the state to retain a portion of the child support paid to a custodial parent who has a child receiving SSI payments, these cases were excluded from the experiment. (1,804 cases in Cohort 1, 62 in Cohort 3)

B. Cases where the noncustodial father was known to be deceased and therefore could not pay any child support. (51 cases in Cohort 1, 10 cases in Cohort 3)

We also excluded cases which experienced various administrative delays and errors. These included:

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[51]We do not consider cases in this report where the custodial parent is the father of the children. Only a small number of cases entering W-2 are headed by the father and it is likely that the experience of these cases is quite different from those of custodial mothers. Also, we do not include two-parent families, since by definition they are not eligible for child support. An additional 1,190 cases entered W-2 during this time period with no assignment group, most likely because of a problem with the database programming which assigned cases to the treatment group; 1,157 of these cases entered in during the Cohort 1 entry period and 25 entered during the Cohort 3 entry period.

C. Cases which were mistakenly assigned to AFDC after September 30, 1997. (268 cases in Cohort 1, none in Cohort 3)

D. Cases which entered W-2 two or more months after having left AFDC. Since these cases were on AFDC in August 1997 and received a research assignment at that time, but did not enter W-2 until two or more months later, these cases are considered to have been "diverted" and are included in the diversion analysis. (574 in Cohort 1, 228 in Cohort 3)

E. Cases which did not enter a slot assignment for at least 30 days after they first requested assistance, but did later enter a slot. Because many RFAs do not result in actual slot assignments, the experiment needed to establish a deadline for deciding whether an applicant had actually been qualified for services. County-level workers must determine the appropriate placement for a W-2 applicant within seven days; an extension is allowed to 30 days if the applicant needs additional time to provide verification of need. Since 30 days is then the approximate time that county-level workers are allowed to complete an applicant's paperwork, it seemed likely that cases exceeding this 30-day deadline might have had reasons beyond simple administrative delay for not entering into a slot. (1,982 cases in Cohort 1, 734 in Cohort 3)

F. Cases in which the custodial parent had multiple CARES cases with active W-2 participation. A custodial parent who reapplies for W-2 should usually have her/his old case number reopened instead of being assigned a new case number. Since a custodial parent with two case numbers could be assigned to both the experimental and control groups, we do not consider them in our analyses. (28 cases in Cohort 1, 8 in Cohort 3)

G. Cases for which the experimental assignment group was incorrectly reported to the child support system and so we could not be sure that they had experienced the correct treatment at all times. (23 cases in Cohort 1, 50 cases in Cohort 3)

We also removed cases in which the youngest child was listed as being over 18 years old on January 1, 2000. Since custodial parents were required to be living with a minor child on this date to be eligible for the survey component of CSDE and therefore were excluded from analysis in the Phase 1 Final Report, we excluded these cases from the present analyses as well for consistency. (400 cases in Cohort 1, 14 cases in Cohort 3)

These exclusions result in a final research sample of 16,003 custodial mothers in Cohort 1 and 2,235 custodial mothers in Cohort 3.

4. Are the Experimental and Control Groups Equivalent at W-2 Entry?

With the exception of the cases listed in the previous section, we believe that the random assignment of cases to experimental or control status has been implemented as intended. As such, random assignment should make the experimental and control groups comparable at the time they were assigned. Random assignment of new potential W-2 cases generally took place when the individual first inquired about the program. However, our basic evaluation strategy is to compare experimental-group and control-group cases that actually entered W-2, since the full pass-through is relevant only to those who actually entered W-2 and to those whose decision about entry was influenced by the full pass-

through. Therefore, we may be concerned that the entry decision of individuals was influenced by their research-group status. If there is no evidence that decisions to enter W-2 were affected by knowledge of research-group status, comparisons between the experimental and control groups, conditional on entering W-2, should be an appropriate measure of the effects of the full pass-through.

Potential "Diversion" Effects

For a simple comparison of later outcomes between the experimental and control groups to be valid, the experiment must have been implemented properly and the two groups must have been similar at the beginning of the policy change. We believe the experimental design has, for the most part, been implemented appropriately. Thus, we expect that the two groups will be similar, except for differences that result from chance. But two factors could lead to differences between the experimental- and control-group members of our main samples (custodial mothers demographically eligible for child support who entered W-2 within our time frame).

Our first concern is that experimental- and control-group members *might have entered W-2 at different rates.* Consider three identical individuals, A, B, and C, all of whom anticipate receiving moderate amounts of child support. All individuals apply for W-2; A is told she is in the experimental group and thus will always receive all child support paid on her child's behalf. B is told she is in the control group and thus will receive only a portion of the child support paid on her child's behalf when she is in W-2's lower tiers; and C is in the control group but is not told (or does not understand) the implications for child support. Assume A and C proceed with the application and enter W-2. When B learns that she would be able to receive only a portion of the support paid, she makes alternative plans and does not enter W-2. If this occurs, simple comparisons of experimental-group members who entered W-2 with control-group members who entered W-2 would not be valid, as control-group members who anticipated moderate amounts of child support would have been diverted, and would not have entered W-2. Our first test of the comparability of the experimental and control groups, therefore, is to examine the percentage of experimental- and control-group cases that entered within 30 days of being told about W-2. We are particularly concerned that those who anticipated fairly high amounts of child support might have entered at a different rate if they were in the experimental group than if they were in the control group.

Our second concern is that experimental- and control-group members *might have been assigned to different tiers.* Recall that those in the control group who are in lower tiers (Caretaker of Newborn, W-2 Transition, Community Service Job) receive only a portion of the support paid on their behalf, whereas control-group members in an upper tier (Trial Job, Unsubsidized Job) or off W-2 altogether and all experimental-group members, regardless of tier, receive all current support paid on their children's behalf. Continuing with the example, assume A and C have limited employment prospects, and are therefore potential candidates for a Community Service Job. If C, or her case manager, is concerned about her receiving all child support, she may be more likely to be placed in a Trial Job or an Unsubsidized Job; because C is in the control group, she would receive all support paid on her behalf only if she were placed in an upper tier. If this occurred, comparisons of experimental- and control-group cases that entered W-2 in a particular tier may not be valid. Our second test, therefore, was to examine those who entered W-2, comparing whether the experimental and control groups entered a lower or an upper tier. We were particularly concerned with whether those who anticipated high amounts of child support and who were in the control group were more likely to be placed in an upper tier than were experimental-group cases anticipating high amounts of child support.

To test each of these two concerns we compared the entire experimental group with the entire control group in both Cohort 1 and Cohort 3. We then checked whether these experimental-control comparisons differ based on the amount of prior child support, our primary concern. Finally, we tested whether the experimental and control groups entered at different rates within Milwaukee, other urban areas, and the rest of the state, given that the implementation analysis suggested that Milwaukee County cases may have been less likely to understand the implications of their experimental-group status.

Were Experimental-Group Cases More Likely to Enter W-2 than Control-Group Cases?

The first analysis considered whether cases entered W-2. Cases were randomly assigned to the experimental or control group either on August 31, 1997 (cases that were receiving AFDC on this date) or at application to W-2. We included all cases assigned before July 8, 1998 (Cohort 1) and all cases assigned from January 1, 1999–June 30, 1999 (Cohort 3). We divided those who received an assignment code into those who "entered" and those who were "diverted." Our definition of "diversion" is as follows: those not receiving AFDC on August 31 are considered diverted if they did not enter a W-2 tier (also called a "slot") within 30 days of their random assignment (which coincides with their initial request for assistance.) Those who were receiving AFDC on August 31 and assigned at that time could have been diverted in two ways: either they could have had a W-2 interview but not entered a W-2 slot within 30 days of that interview, or they could have stopped receiving AFDC for two or more months before they had a W-2 interview. We considered the latter group "diverted," because they had received a notice about their experimental-group status and may have chosen to enter or not enter W-2 based on their experimental or control status. Among those who were diverted, we separated those who "never" entered (by June 30, 2002) from those who did enter W-2, but not within the time frame required to be part of our analysis sample (" delayed").

Entry rates into W-2 were quite similar for the experimental and control groups. In Cohort 1, 59 percent of experimental-group and 58 percent of control-group cases entered W-2; in Cohort 3, 48 percent of experimental- and control-group cases entered W-2. Some of the diverted cases were merely delayed, but most had not entered W-2 by the end of our data collection period. There is little difference between the experimental and the control groups in the proportion delayed (in Cohort 1, 11 percent of experimental- and control-group cases; in Cohort 3, 16 percent of the experimental group and 14 percent of the control group) or the proportion that never entered (in Cohort 1, 29 percent of the experimental group and 31 percent of the control group; in Cohort 3, 36 percent of the experimental group and 38 percent of the control group).

To test whether experimental- and control-group cases have differential rates of entry into W-2 while controlling for other characteristics of these cases, we conducted a multivariate probit analysis on each cohort. Table A1.2 shows the results from the probit models for each cohort; we include an indicator for experimental group as well as a variety of other variables. In neither cohort does the coefficient on the indicator variable show any significant difference between the experimental and control group in the rate of entry. Other variables generally have the expected relationship to W-2 entry. Cohort 1 cases with a history of higher child support payments ($1,000 or more in the year prior to random assignment) were only marginally less likely to enter than those without payments; for Cohort 3 cases, having had any child support paid increased the likelihood of entry. In Cohort 1 cases, but not in Cohort 3, those in Milwaukee County were more likely to enter than those in other urban areas or rural areas. We expect that characteristics generally associated with labor market success will affect entry, as those who are most job-ready will be encouraged to seek private-sector employment.

Table A1.2: Probit Estimate of the Probability of Entering W-2

	Cases Assigned in Cohort 1 (N=32,580)			Cases Assigned in Cohort 3 (N=5,268)		
	Coeff.	Std. Error	P-value	Coeff	Std. Error	P-value
Intercept	0.2701	0.0365	<.0001	0.4993	0.0552	<.0001
Research Code						
Experimental Group	-0.0018	0.0183	0.924	-0.0276	0.0372	0.458
Child Support Paid in Year Prior to Assignment (compared to $0)						
Low ($1-$999)	-0.0161	0.0223	0.472	0.1705	0.062	0.006
High ($1,000 or more)	-0.0359	0.0212	0.090	0.1477	0.0518	0.004
Location of Custodial Parent (compared to urban counties)						
Milwaukee County	0.3052	0.0207	<.0001	0.0519	0.0488	0.287
Rural counties	-0.0189	0.028	0.499	-0.0407	0.0556	0.464
Age of Custodial Parent at Assignment (compared to <25)						
25-30	-0.1033	0.0218	<.0001	0.0141	0.0566	0.803
31-40	-0.0765	0.0243	0.002	0.003	0.0637	0.962
41 or more	-0.1002	0.0344	0.004	-0.0497	0.0637	0.565
Gender of Custodial Parent (compared to female)						
Male	-0.1314	0.0399	0.001	-0.1377	0.0802	0.086
Race of Custodial Parent (compared to white)						
African American	0.094	0.0214	<.0001	0.1547	0.0522	0.003
Hispanic	-0.2741	0.0305	<.0001	-0.0687	0.0796	0.389
Native American	-0.0336	0.0496	0.498	0.1089	0.1269	0.391
Asian	0.0953	0.0451	0.035	-0.1012	0.1485	0.496
Other or unknown	-0.1771	0.0491	0.000	-0.0968	0.1015	0.340
AFDC Receipt Prior to Assignment (compared to 0 months)						
1-6 months	-0.0193	0.0303	0.524	0.3126	0.0587	<.0001
7-18 months	0.0685	0.0273	0.012	0.4092	0.1064	0.000
19-24 months	0.2512	0.0308	<.0001			

Table A1.2, continued

	Cases Assigned in Cohort 1 (N=32,580)			Cases Assigned in Cohort 3 (N=5,268)		
	Coeff.	Std. Error	P-value	Coeff	Std. Error	P-value
Number of Children at Assignment (compared to one)						
None	-0.7185	0.0545	<.0001	-1.1942	0.0924	<.0001
Two	0.0059	0.0202	0.768	-0.2278	0.0486	<.0001
Three or more	0.0212	0.0213	0.317	-0.2104	0.0547	0.000
Age of Youngest Child at Assignment (compared to under 1)						
1	-0.1673	0.0255	<.0001	-0.5967	0.0666	<.0001
2	-0.1677	0.0289	<.0001	-0.5966	0.0763	<.0001
3-5	-0.1444	0.0243	<.0001	-0.6879	0.06	<.0001
6-12	-0.124	0.0269	<.0001	-0.5655	0.0671	<.0001
13-17	-0.2637	0.0384	<.0001	-0.6977	0.0954	<.0001
Unknown	-2.8401	0.1781	<.0001	-3.33281	0.321	<.0001
Case Type (compared to active AFDC on 8/31/97)						
Temporarily inactive on 8/31/97	0.7598	0.0422	<.0001			
Assigned during 9/1/97-3/16/98	-0.5063	0.022	<.0001			
Assigned during 3/17/98-5/9/98	-0.1269	0.0374	0.001			
Assigned during 5/10/98-7/8/98	-0.1748	0.0375	<.0001			

Additional models (not shown) were run to address whether, among those with high child support in the past, experimental-group cases were more likely to enter W-2 than control-group cases. To assess this effect, we add interaction terms between experimental-group status and high child support. The coefficients on the interaction terms are not significantly different from zero, nor is the main experimental-group term for either cohort. We also ran models with interaction effects between being in the experimental group and region of residence; these also were not significant in either cohort. Thus, we find no support for the hypothesis that differential diversion occurred.

Are Experimental-Group Cases More Likely to Enter Lower Tiers than Control-Group Cases?

Our second analysis compared the initial tier placement of cases that entered. There is virtually no difference in initial tier statewide: in Cohort 1, 71 percent of cases entered the lower tiers and 29 percent entered the upper tiers within both the experimental and control groups; in Cohort 3, 75 percent of experimental-group members and 76 percent of control-group members entered in the lower tiers. We again examined this question with a multivariate model. We examined all cases that entered W-2 in a timely way (using the same definition of "entry" as in the diversion analysis), and modeled whether these cases entered in an upper or lower tier. Table A1.3 shows the estimates from the probit models. The results for both cohorts suggest that experimental-group cases did not differ from control-group cases in the likelihood of upper-tier placement. In both cohorts those with higher child support in the past were more likely to enter a higher tier, whereas those in Milwaukee County were less likely to enter in an upper tier. The other variables are generally as expected.

We also tested differential tier assignment for the experimental and control groups among those with higher levels of child support in the year prior to assignment. In Cohort 1, experimental-group members with higher child support were less likely to be placed in an upper tier than control-group members, but in Cohort 3 there was no significant difference between experimental and control groups, regardless of the level of child support. Finally, experimental- and control-group members did not differ in their rates of entry to the upper tiers within Milwaukee, other urban, or rural counties.

Overall, these results suggest that comparisons between experimental- and control-group cases that entered W-2 provide an appropriate measure of the impact of the experiment. But our analysis of tier of entry suggests that evaluations of the experimental impact conditional on entry in the lower tiers should be interpreted with caution, particularly for Cohort 1. A focus on cases entering the lower tiers was suggested by the initial evaluation plan, and is consistent with the policy—since only those in the lower tiers are potentially subject to a reduced pass-through. However, there is some evidence that in Cohort 1, initial tier assignment may be associated with research group assignment.

5. Are the Experimental and Control Groups Equivalent in Our Final Research Population?

In Table A1.4 we examine the comparability of the experimental and control groups in the final research population. The groups could differ by chance at random assignment, they could differ if there were differential rates of entry onto W-2, or they could differ if we differentially excluded experimental-group cases in the construction of the final sample. The first two sets of columns show the characteristics of the experimental group and the control group. The final columns show the results of a multivariate test of the statistical significance of any difference. Specifically, we conducted a probit analysis in which the dependent variable is membership in the experimental group. On most dimensions we examined, the distributions for the experimental and control groups were not significantly different, as indicated by the

Table A1.3: Probit Estimate of the Probability of Entering in the Upper Tier

	Cases Entering in Cohort 1 (N=19,212)			Cases Entering in Cohort 3 (N=2,532)		
	Coeff.	Std. Error	P-value	Coeff	Std. Error	P-value
Intercept	-0.4815	0.053	<.0001	-1.4088	0.089	<.0001
Research Code						
Experimental Group	0.0002	0.0239	0.994	0.0176	0.0584	0.764
Child Support Paid in Year Prior to Assignment (compared to $0)						
Low ($1-$999)	0.1076	0.0277	0.000	0.172	0.0901	0.056
High ($1,000 or more)	0.0573	0.0272	0.035	0.0721	0.0781	0.356
Location of Custodial Parent (compared to urban counties)						
Milwaukee County	-0.3035	0.0284	<.0001	-0.3659	0.0815	<.0001
Rural counties	0.0029	0.0411	0.943	0.2407	0.0884	0.007
Age of Custodial Parent at Assignment (compared to <25)						
25-30	0.0819	0.0277	0.003	0.0766	0.0887	0.388
31-40	0.0075	0.0311	0.809	0.1289	0.101	0.202
41 or more	-0.2794	0.0471	0.000	0.0804	0.1429	0.574
Gender of Custodial Parent (compared to female)						
Male	0.1097	0.0591	0.063	0.1843	0.1317	0.162
Race of Custodial Parent (compared to white)						
African American	-0.2543	0.028	<.0001	0.1868	0.0869	0.032
Hispanic	-0.0878	0.042	0.037	-0.5342	0.1598	0.001
Native American	-0.0347	0.0679	0.610	-0.5744	0.2209	0.009
Asian	-0.2447	0.0596	<.0001	0.1082	0.2424	0.655
Other or unknown	-0.1032	0.0701	0.141	0.0105	0.1773	0.953
AFDC Receipt Prior to Assignment (compared to 0 months)						
1-6 months	0.0759	0.0469	0.105	0.1356	0.082	0.098
7-18 months	0.2077	0.0427	<.0001	-0.3365	0.1548	0.030
19-24 months	0.1418	0.0476	0.003			

Table A1.3, continued

	Cases Entering in Cohort 1 (N=19,212)			Cases Entering in Cohort 3 (N=2,532)		
	Coeff.	Std. Error	P-value	Coeff	Std. Error	P-value
Number of Children at Assignment (compared to one)						
None	0.6385	0.0914	<.0001	1.8571	0.169	<.0001
Two	0.1196	0.0266	<.0001	0.1107	0.0767	0.149
Three or more	0.0804	0.0278	0.004	0.184	0.0857	0.032
Age of Youngest Child at Assignment (compared to under 1)						
1	0.1898	0.0324	<.0001	0.9173	0.1039	<.0001
2	0.2016	0.0369	<.0001	1.0349	0.1151	<.0001
3-5	0.2223	0.031	<.0001	0.8165	0.0957	<.0001
6-12	0.1846	0.0346	<.0001	0.6916	0.1059	<.0001
13-17	0.0519	0.0529	0.326	0.6887	0.1531	<.0001
Unknown	-0.0821	0.629	0.896			
Case Type (compared to active AFDC on 8/31/97)						
Temporarily inactive on 8/31/97	-0.0234	0.0355	0.509			
Assigned during 9/1/97-3/16/98	-0.0349	0.0331	0.292			
Assigned during 3/17/98-5/9/98	-0.3055	0.0554	<.0001			
Assigned during 5/10/98-7/8/98	-0.3817	0.057	<.0001			

Table A1.4: Comparison of the Experimental and Control Groups in the Research Samples

	Cohort 1					Cohort 3				
	Experimental		Control			Experimental		Control		
	N	%	N	%	p-value	N	%	N	%	p-value
Total Cases	12,542		3,461			1,126		1,109		
Case Type										
AFDC	9,200	71.44	2,155	68.61	omitted					
W-2	3,342	28.56	1,306	31.39	**<.0001**	1,126	100	1,109	100	
AFDC Receipt before Entry										
None	1,516	13.2	624	14.01	omitted	922	81.18	940	84.76	omitted
1-18 months	4,179	33.61	1,178	33.23	0.934	204	18.12	169	15.24	0.419
19-24 months	6,847	53.18	1,659	52.76	0.699					
Initial Tier										
Lower tier	7,589	60.43	2,070	60.03	omitted	500	44.4	494	44.54	omitted
Caretaker of Newborn	1,030	8.63	357	9.18	0.982	362	32.15	360	32.46	0.447
Upper tier	3,923	30.95	1,034	30.79	0.847	264	23.45	255	22.99	0.915
Location of Custodial Parent										
Milwaukee county	9,349	74.16	2,509	73.91	omitted	575	51.07	566	51.04	omitted
Other urban counties	2,135	17.22	629	17.35	0.764	364	32.33	340	30.66	0.995
Rural counties and tribes	1,058	8.62	323	8.74	0.549	187	16.61	203	18.3	0.321
Age of Custodial Parent at Entry										
16-25	5,808	46.37	1,689	48.32	omitted	623	55.33	612	55.18	omitted
26-30	2,573	20.54	703	20.62	0.146	198	17.58	195	17.58	0.224
Over 30	4,159	33.07	1,068	31.03	**0.014**	305	27.09	302	27.23	0.115
Missing	2	0.02	1	0.03	0.867					
Race of Custodial Parent										
White	3,107	25.12	946	26.43	omitted	449	39.88	452	40.76	omitted
African American	7,679	60.96	2,064	60.32	0.067	533	47.34	528	47.61	0.772
Other	1,756	13.92	451	13.25	0.152	144	12.79	129	11.63	0.534

Table A1.4, continued

	Cohort 1					Cohort 3				
	Experimental		Control			Experimental		Control		
	N	%	N	%	p-value	N	%	N	%	p-value
Education of Custodial Parent										
Less than high school	6,619	52.51	1,763	51.4	omitted	495	43.96	467	42.11	omitted
High school degree	4,528	36.25	1,307	37.61	0.141	469	41.65	493	44.45	0.139
Beyond high school	1,213	9.79	346	9.69	0.493	154	13.68	145	13.07	0.960
Missing	182	1.45	45	1.31	0.865	8	0.71	4	0.36	0.384
Number of Children at Entry										
None or one	4,130	33.32	1,161	32.22	omitted	603	53.55	635	57.26	omitted
Two	3,616	28.84	1,033	29.93	0.072	265	23.53	254	22.9	0.767
Three or more	4,796	37.85	1,267	37.85	0.110	258	22.91	220	19.84	0.334
Age of Youngest Child at Entry										
0-2	7,258	58.02	2,046	58.58	omitted	777	69.01	786	70.87	omitted
3-5	2,272	18.02	613	18.05	0.602	128	11.37	111	10.01	0.305
6 or older	3,011	23.95	801	23.34	0.159	221	19.63	212	19.12	0.288
missing	1	0.01	1	0.02	0.366					
Average Annual Pre-Entry Earnings of Highest-Earning Noncustodial Parent										
None	2,299	18.39	651	18.89	omitted	194	17.23	165	14.88	omitted
$1-$5,000	4,357	34.68	1,219	35.74	0.778	366	32.5	333	30.03	0.517
$5,000-$15,000	2,754	21.89	745	21.52	0.729	235	20.87	241	21.73	0.108
$15,000-$25,000	1,114	8.88	311	8.99	0.625	109	9.68	127	11.45	**0.038**
$25,000 or more	533	4.3	154	4.2	0.698	86	7.64	64	5.77	0.648
No noncustodial parent	1,335	10.66	343	9.61	0.223	122	10.83	168	15.15	**0.033**
Noncustodial parent missing SSN	150	1.2	38	1.04	0.514	14	1.24	11	0.99	0.809
Child Support Paid Prior to Entry										
None	8,216	65.55	2,317	66.56	omitted	748	66.43	768	69.25	omitted
$1-$999	2,023	16.04	561	16.72	0.648	147	13.06	125	11.27	0.758
$1,000 or more	2,303	18.4	583	16.73	**0.006**	231	20.52	216	19.48	0.953

Table A1.4, continued

	Cohort 1					Cohort 3				
	Experimental		Control			Experimental		Control		
	N	%	N	%	p-value	N	%	N	%	p-value
Quarters of Employment Prior to Entry										
None	2,472	19.54	635	18.87	omitted	108	9.59	125	11.27	omitted
1-6 quarters	7,557	59.85	2,054	60.83	0.816	510	45.29	505	45.54	0.241
7-8 quarters	2,510	20.58	771	20.28	0.442	507	45.03	478	43.1	0.182
Missing SSN	3	0.02	1	0.03	0.803	1	0.09	1	0.09	0.974
Number of Legal Fathers										
None	3,997	32.12	1,122	31.45	omitted	491	43.61	556	50.14	omitted
One	6,234	49.6	1,701	49.45	0.880	489	43.43	429	38.68	0.068
Two or more	2,311	18.29	638	19.1	0.492	146	12.97	124	11.18	0.159
Relationship of Custodial and Noncustodial Parents										
Marital only	1,014	8.19	271	7.56	0.142	143	12.7	133	11.99	0.837
Other	11,528	91.81	3,190	92.44	omitted	983	87.3	976	88.01	omitted
Custodial Parent Has Child Support Order at Entry										
No	5,242	42.11	1,481	41.23	omitted	676	60.04	709	63.93	omitted
Yes	7,300	57.89	1,980	58.77	0.550	450	39.96	400	36.07	0.679

Note: Probit model for Cohort 1 also includes Assignment Regime variable.

lack of statistically significant coefficients in the final column. In Cohort 1 the primary exceptions are case type/assignment periods, mother's age, and mother's child support history—where those in the experimental group were more likely to have transitioned from AFDC, were older, and were more likely to have had $1,000 or more of child support paid on their behalf in the previous year. In addition, those marginally more likely to be in the experimental group were African American, and those with two children (but not three or more). In Cohort 3, the primary exceptions were the ex-partner's earnings and the number of legal fathers; those in the experimental group were less likely to have ex-partners with earnings of $15,000–$25,000 and more likely to have a single legal father of their children. Because of these differences in initial characteristics, we conducted regression analyses to estimate the effect of the policy, as discussed below.

6. Methods of Analysis

The random assignment of cases to an experimental and a control group provides a powerful tool to evaluate the effects of a policy. In theory, given random assignment, simple comparisons between the experimental and control groups should provide unbiased measures of the impact of the policy. This comparison is appropriate if the groups are comparable, differing only in the pass-through policy they face. The implementation analysis, discussed in Chapter 2 of this report, suggested that the initial random assignment worked appropriately. The analysis of diversion, above, suggested there are no overall significant differences in the proportion of cases in the experimental and control groups that entered W-2 (and our research sample). The analysis of the initial characteristics of the experimental and control groups largely confirmed our expectation that they are equivalent.

Although the experimental and control groups are not significantly different in most respects, the results in Table A1.3 suggest that there are some differences in initial characteristics. For this reason, we present regression-adjusted means, rather than simple means, in the analysis of experimental effects. This approach has a number of advantages. First, even if random assignment worked perfectly, there will be some chance difference in the initial characteristics of the experimental and control groups. Regression-adjusted means adjust for chance variation in characteristics included in the regression. The regression-adjusted difference reflects the estimated effect of experimental status (i.e., the coefficient on the indicator for experimental or control status) after accounting for differences in characteristics at entry into W-2. This approach also adjusts for any nonrandom differential assignment based on observable characteristics included among the control variables. Finally, to the extent control variables account for the variance in the outcome of interest, we are more likely to be able to discern the effect of the experiment.

The analyses of experimental effects in this report use a standard set of control variables. The set of control variables includes assignment rate, mother's age and race, whether the mother had a history of high child support payments on her behalf, and measures of her AFDC and employment history, initial W-2 tier, location, education, and family structure. A full list of the variables and details of their specifications are included in Table A1.5.

The regression-adjusted means reported in the experimental-impact analyses were generated as follows. First, the outcome was estimated as a function of the set of control variables, with an indicator variable for experimental status separately for each cohort. All observations from experimental and control groups were included in the regression analysis. Second, weighted mean values for each control variable were calculated for each cohort, and a predicted value for the outcome variable was generated by

evaluating the estimated regression coefficients at these means. The experimental impact and associated p-value were measured with the indicator variable for experimental status. Finally, a model combining the two cohorts was estimated, including an interaction term between experimental status and cohort. The estimates from this model were used to determine the significance of the difference in effect between the two cohorts.

TABLE A1.5
List of Control Variables Used in Regression Models

All control variables are dummy variables.

- Assignment rates
  - 20% experimental group, 20% control group, 60% not in experiment (omitted)
  - 30% experimental group, 30% control group, 40% not in experiment
  - 50% experimental group, 50% control group
- Child Support history; amount paid on behalf of the mother in the one-year period before mother entered W-2
  - $0 (omitted)
  - $1–$999
  - $1,000 or more
- Mother's age
  - 25 or younger (omitted)
  - 26–30 years
  - 31 or older
- Mother's race/ethnicity
  - White (omitted)
  - African American
  - Other
- Months of AFDC receipt during the 24-month period before mother entered W-2
  - 0 months (omitted)
  - 1–18 months
  - 19–24 months
- Region
  - Milwaukee County
  - Other urban counties
  - Rural counties (omitted)
- Initial W-2 tier
  - Upper tier (omitted)
  - Lower tier
  - Caretaker of Newborn

- Age of child; for the mothers and fathers, this is the age of the youngest child. For the mothers, this variable is based on the natural and adoptive children of the mother; for the fathers, it is based on the natural and adoptive children of the couple. For nonmarital children, this is the age of each child.
  - 0–2 years (omitted)
  - 3–5 years
  - 6 or older
- Mother's education
  - Grade 11 or less
  - High school diploma or equivalent
  - Post high school (omitted)
- Father's average annual earnings during the two-year period before mother entered W-2; for mothers, if there is more than one father, this is based on the highest-earning father.
  - $0–$14,999 (omitted)
  - $15,000 or more
- Mother's employment history; number of quarters employed during the two-year period before mother entered W-2 (not included in analyses of the fathers' sample)
  - 0 quarters (omitted)
  - 1–6 quarters
  - 7–8 quarters