

# **W-2 Child Support Demonstration Evaluation**

## **Technical Report 4**

### **Samples and Weighting**

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## **Introduction**

In our analyses of mothers, fathers, and children, a number of different, but related, samples were used.<sup>1</sup> This Technical Report describes these samples and how they are related. It also describes the weights that were used in analyses to correct for changes in the random assignment rate and for survey sample stratification.

## **Research Population**

The derivation of the research population is explained in detail in Technical Report 1. Briefly, of the 23,347 cases that entered W-2 by July 8, 1998, 1,900 were excluded because they were not eligible for child support, or because they did not receive a research group assignment. Remaining were 21,447 cases that entered W-2, had a research assignment, and were potentially eligible for child support. Of these, we excluded 5,059 cases for reasons including extended postassignment delays prior to entering W-2, having a child on SSI, and having no child who would be under 18 at the end of the research period, as well as 411 cases in which the resident parent was the father. This left a final research population of 15,977 mothers who received a research group assignment and were potentially eligible for child support.

## **Administrative Data Samples**

Three standard samples, described below, were used for the analyses in Volume I: resident mothers, nonresident fathers, and children of nonmarital parents.

### Research Population of Resident Mothers

This is the overall population of 15,977 mothers described above. It consists of cases that entered W-2 before July 8, 1998, with a mother as resident parent. It excludes cases that did not receive a research assignment, were ineligible for child support, included a child on SSI, had a delayed entry onto W-2, had multiple active CARES cases, or had no minor children. This group defines the primary research population for the experiment.

### Legal Nonresident Fathers at Entry

There are 14,343 resident mother/nonresident father pairs in which the resident mother is part of our research population and the nonresident father is the legally established parent of a child in the case at the time of entry into the experiment. Because this population is defined by the couple, an individual mother or father may appear in this sample more than once. Resident mothers who have children with different legal fathers will appear in this sample with each nonresident father (as the mother of their child[ren]). Similarly, nonresident fathers who are the legally established father of children living with separate mothers in the resident mother population will also be represented more than once.

### Children of Nonmarital Parents

There are 31,441 minor children of resident mothers in our research population who were listed on a W-2 case at the time of entry and whose parents were not married. This sample is primarily used to

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<sup>1</sup>The authors thank Maria Cancian and Dan Meyer for their substantial involvement in deriving the sample weights, and for comments on an earlier version of this report.

examine the effect of the experiment on paternity establishment, so the children of divorced parents—who are not eligible for paternity establishment—are excluded from this sample.

### **Survey of Wisconsin Works Families (SWWF)<sup>2</sup>**

The SWWF is a panel study of resident mothers and nonresident fathers selected from the research population. We collected data in two waves, with the first period of data collection measuring families' experiences during 1998—the first year that W-2 was in place—and the second period focusing on 1999. The University of Wisconsin Survey Center was contracted to conduct the fieldwork.

#### Survey Sample Design

The survey sample is a subset of the research population, and the core administrative data sources for the research population—CARES and KIDS—serve as the survey sample frame. The research population includes W-2 cases established between September 1, 1997 and July 8, 1998 which had children who were eligible to receive child support from a father. As described in Technical Report 1, the research population accurately reflects the population of all W-2 cases during this period with the following exceptions: a) cases in which there is not a living father; b) cases in which there is a Good Cause exemption from pursuing child support; c) cases in which the resident parent or a child receives SSI; and d) cases in which the father is the resident parent. Families receiving SSI were not eligible to receive a partial pass-through of child support and therefore were excluded from the experiment. Cases in which the father is the resident parent are very small in number (about 2 percent of the population) and are sufficiently different from resident mothers that they cannot be easily compared. The resident mothers, nonresident fathers, and children attached to a W-2 case are the primary elements of interest in analyses of the research population.

The survey sample design involves representative samples of resident mothers and nonresident fathers attached to the W-2 cases included in the research population.<sup>3</sup> All of the cases that were excluded from the research population also were excluded from the survey samples. In addition, experimental cases were randomly assigned to two groups. One group of experimental cases was not originally to be included in the evaluation analysis and was not eligible for the survey sample. Only cases in the original experimental group or in the control group were eligible for the survey sample.

From the cases in the control group and original experimental group we selected a stratified probability sample of 3,000 resident mothers from the list of W-2 cases in CARES and KIDS. The sample that was ultimately fielded was somewhat smaller (2,980). Errors that we identified in the sample frame prior to the beginning of the fieldwork led to the exclusion of 20 cases that were determined to be ineligible. These involved cases where updates in the sample frame showed that the mother had never participated in W-2 or that the selected mother had died before field efforts began. The original sample of 3,000 was stratified by case type (AFDC transitioned to W-2 and new W-2 cases) and initial W-2 tier placement (upper and lower tier).

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<sup>2</sup>For more information about the topics discussed in this section, see Technical Report 5.

<sup>3</sup>By “nonresident father” we mean the legal father for whom paternity has been established or who was married to the child’s mother at the child’s birth. Although KIDS includes information about “potential” fathers, these individuals do not always become legal fathers, and some children have multiple potential fathers listed.

To prepare and field a sample of nonresident fathers, we selected a focal child from information available on the sample frame. We randomly selected a child from among the children who were listed on the W-2 case at entry and who would be under age 18 on December 31, 1999.<sup>4</sup> Because we sampled from a population of W-2 cases, the focal child was selected without reference to the status of his or her father. There may or may not be a nonresident father identified for that child, and the father may or may not have been alive at the time the focal child was selected. Thus, the focal children in the study do not disproportionately represent children whose fathers were alive or whose fathers had paternity established.

The nonresident fathers of the randomly selected focal children make up the survey sample of fathers. This group is representative of the nonresident fathers in the research population with the following exceptions. We exclude cases in which the father was a minor on January 1, 1999, as well as cases in which there was a Good Cause exemption from pursuing child support. Good Cause exemptions generally involve evidence of domestic violence and occur in a very small proportion of cases. We excluded these fathers from the survey to comply with guidelines for protecting human subjects in experiments and to minimize the possibility that contact with the study itself would lead to unwanted contact between the parents and possibly harm to an individual. After these exclusions, there were 2,028 fathers in the Time 1 survey sample.<sup>5</sup>

### Survey Samples at Time 2

At Time 2, we fielded samples of 2,950 resident mothers and 2,225 nonresident fathers. The Time 2 samples remained largely unchanged from Time 1. Although the SWWF is a panel study, we did not restrict the follow-up to persons who participated at Time 1. Mothers and fathers were included in the sample regardless of their Time 1 respondent status, and the designated focal child remained the same.<sup>6</sup>

The resident mother and the nonresident father became ineligible at Time 2 if we identified errors in the sample frame indicating that the mother had never participated in W-2, if she had entered W-2 after July 8, 1998, or if the focal child had died before December 31, 1999. In addition, errors in the sample frame and the difficulties of establishing father-child linkages in KIDS revealed that some fathers were identified incorrectly as the nonresident (legal) father of a focal child at Time 1. A small number of paternity decisions had been reversed or vacated. These cases were excluded at Time 2, though some instances involved the identification of a new, correct nonresident father who was then included in the study.

If a mother or a focal child died before December 31, 1999, the father became ineligible for the study. If a mother or father was reported dead during the fieldwork at Time 1 but this information was not confirmed in CARES or KIDS, the surviving parent remained eligible for a follow-up interview. Fathers also became ineligible if a Good Cause exemption had been established between January 1, 1999 and December 31, 1999.

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<sup>4</sup>In a small number of cases, the only child listed was born after W-2 entry.

<sup>5</sup>By design, the survey includes only one nonresident father per case even though a W-2 case may include more than one father. The survey weights (discussed later in this report) adjust for the differential probabilities of selection for multiple- and single-father cases.

<sup>6</sup>We later discovered errors in five cases in which a different focal child was inadvertently selected at Time 2, potentially involving a different nonresident father. These cases were excluded from analyses.

The largest change in the Time 2 sample involved the addition of 201 newly identified nonresident fathers. If paternity for the focal child had been established between January 1, 1999 and December 31, 1999, this nonresident father was included in the Time 2 survey sample. Three cases (mother and father) became ineligible because the focal child died. Four resident mothers died before December 31, 1999 and 18 of the nonresident fathers died. One additional Good Cause exemption appeared in the administrative record.

### In-Scope and Standard Survey Samples

The final survey samples of resident mothers and nonresident fathers at Time 1 and Time 2 were ultimately smaller than those originally fielded. Just as we identified errors in the sample frame between Time 1 and Time 2, there were additional changes in the administrative record following the end of the fieldwork indicating that some cases were “out of scope” or not eligible for the survey. Specifically, cases (both mothers and fathers) in the fielded samples were later determined to be out of scope if the mother or the focal child had died before December 31, 1998 (Time 1) or December 31, 1999 (Time 2). Nonresident fathers also were ruled ineligible if the father had died before December 31, 1998 (Time 1) or December 31, 1999 (Time 2) or if the father was discovered not to be the legal father of the focal child. A determination of ineligibility for the father did not affect the eligibility status of the mother.

Ultimately, the Time 1 survey samples included 2,879 eligible (or “in-scope”) resident mothers and 1,936 nonresident fathers. At Time 2, the final survey samples of in-scope cases included 2,873 resident mothers and 2,130 nonresident fathers. Of these cases, we completed interviews with 2,362 resident mothers at Time 1 and 643 nonresident fathers. At Time 2, 2,354 resident mothers and 696 nonresident fathers completed interviews.

Analyses of survey data reported here involve a subset of in-scope respondents who were the resident mother or nonresident father of the randomly selected focal child during the reference period covered by the interview. Although only mothers who were resident parents and fathers who were the nonresident parents were eligible for the survey sample, resident parent status may have changed since the time the survey sample was selected or between the first and second wave of data collection. To maintain a consistent definition of the population of interest, mothers who were not the resident parent during the reference period and fathers who were the resident parent are not included in the analysis of survey data reported here. Cases in which the focal child was reported dead are also excluded from analysis.

Resident parent status was defined for the reference period of interest (1998 for Time 1 and 1999 for Time 2) based on respondents’ answers to survey questions about the focal child’s living arrangements. Specifically, a mother was defined as a *nonresident* parent if the focal child lived with her less than six months during the reference year or did not “usually” live with her.<sup>7</sup> A father was defined as a *resident* parent if the focal child lived with him and apart from the mother at least six months during the reference year. If the mother, father, and child lived together six months or more during the reference year, the mother was defined as the resident parent and the father was treated as a nonresident parent.

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<sup>7</sup>The inclusion of “usual residence” to define resident parent status for mothers was meant to cover situations in which the focal child was very young and may not have been born until after July of the reference year. In practice, a small number of cases were defined as resident parent based on “usual residence,” but this included a few situations in which the child was several years old and had not lived with the mother for six months during the reference year.

At Time 1, we completed interviews with 2,362 mothers, 2,295 of whom were the resident parent of focal child during 1998. Among the 643 fathers who completed interviews at Time 1, 572 were the nonresident parent. Similarly at Time 2, 2,247 of the 2,354 mothers who completed interviews were the resident parent during 1999 and 608 of the 696 fathers were the nonresident parent.

## **Weighting**

Weights were used in all analyses to correct for variation in assignment rates and, in the case of survey data, for stratification in survey sample selection.

### Administrative Data

Because the rate of new entrants to W-2 was slower than anticipated, the assignment rates for new cases were increased over time to insure an adequate sample size. 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 remaining 60 percent received the full pass-through but were not assigned to a research group. From March 17 to May 8, 30 percent of new applicants were assigned to the experimental group, 30 percent to the control group, and the remaining 40 percent received the full pass-through but no group assignment. Beginning May 11, 50 percent of new applicants were assigned to the experimental group and 50 percent to the control group.

Because cases entering earlier or later in the random assignment process were likely to differ, we used weights to approximate static assignment rates over time. So, for example, cases entering in the first period, when they were less likely to be assigned to the control group, were weighted more than control group cases entering in the last period.

### Survey Data

When the survey sample was chosen, it was stratified to ensure sufficient numbers of cases that entered in an upper tier of W-2, and of cases that were new to W-2. The survey sampling weights, therefore, in addition to correcting for the changes in assignment rates described above, also correct for this stratification, so that analyses of the survey data can be used to generalize to the population from which the sample was drawn. Detail of how the sampling weights were calculated is shown in the appendix. The survey sampling weights were revised during the analysis period, after a small error was found. The difference between the original and revised weights is also described in the appendix.

For the fathers' survey sample, there is an additional step involved in deriving the sampling weights, because there could be more than one father per mother's case, and only the father of the focal child (if legally established) is included in the sample. The probability of a given father being selected is the ratio of the number of his children in the case to the total number of children in that case. The total number of children in a case ranges from 1 to 10. The ratio ranges from 0.125 to 1.0, with over half of fathers having a ratio of 1. This ratio is multiplied by the survey sampling weights described above to produce survey sampling weight for fathers.

Nonresponse weights were also used for both mothers' and fathers' samples. These nonresponse weights are described in detail in Technical Report 6. The final weights used for analyses of the survey data are the product of the sampling weights and the nonresponse weights.

## Appendix

### Original and Revised Survey Sampling Weights

The survey sampling weights (those that correct the survey sample for changes in assignment rates and sample stratification) were revised during the analysis period. While all of the analyses reported in Volume I use the revised weights, *most/all* of the analyses in Volume II use the original weights, as indicated. In the original weights, an incorrect weight applied to the initial AFDC cases led to those cases being slightly underweighted. Analyses done with the original and revised weights produced very similar results.

The weights that correct the population of experimental and control group cases for differential assignment are as follows:

Assignment Rates			
Old AFDC Cases	New W-2 Cases		
20%E, 20%C, 60%N <sup>1</sup>	20%E, 20%C, 60%N	30%E, 30%C, 40%N	50%E, 50%C, 0%N
2.5	2.5	1.6667	1

When these weights are applied to the population of experimental and control group cases from which the sample was drawn, the weighted sample is distributed as follows:

	Assignment Rates			
	Old AFDC	New W-2		
Initial W-2 Tier	20/20/60	20/20/60	30/30/40	50/50/0
Lower Tier <sup>2</sup>	3,317	935	296	292
Upper Tier	1,604	418	77	71

The actual survey sample, stratified by case type and initial tier, is distributed as follows:

	Assignment Rates			
	Old AFDC	New W-2		
Initial W-2 Tier	20/20/60	20/20/60	30/30/40	50/50/0
Lower Tier	915	424	192	320
Upper Tier	570	284	68	111

<sup>1</sup>E= experimental group, C= control group, N= received full pass-through but not assigned to a research group.

<sup>2</sup>Includes Caretaker of Newborn.

So, as a percentage of the population weighted to correct for assignment rate, the actual observed sampling proportions are:

	Assignment Rates			
	Old AFDC	New W-2		
	20/20/60	20/20/60	30/30/40	50/50/0
Initial W-2 Tier				
Lower Tier	0.28	0.45	0.65	1.10
Upper Tier	0.36	0.68	0.89	1.57

The survey sample of 2,884 represents 41 percent of the 7,010 cases from which the sample was drawn. Taking the ratio of the overall sampling proportion to the cell proportions results in the following final weights<sup>3</sup>:

	Assignment Rates			
	Old AFDC	New W-2		
	20/20/60	20/20/60	30/30/40	50/50/0
Initial W-2 Tier				
Lower Tier	1.49	0.91	0.63	0.38
Upper Tier	1.16	0.61	0.46	0.26

When the weights were initially calculated, an incorrect weight was applied to the initial AFDC cases, as follows:

Assignment Rates			
Old AFDC Cases	New W-2 Cases		
20%E, 20%C, 60%N	20%E, 20%C, 60%N	30%E, 30%C, 40%N	50%E, 50%C, 0%N
1.0	2.5	1.6667	1

This resulted in the following original weights:

Original Weights	Assignment Rates			
	Old AFDC	New W-2		
	20/20/60	20/20/60	30/30/40	50/50/0
Initial W-2 Tier				
Lower Tier	1.35	1.14	0.79	0.47
Upper Tier	1.05	0.69	0.53	0.30

<sup>3</sup>The weights may not exactly equal the ratio of the numbers shown, due to rounding. The actual weights used for analysis had four decimal places.

Compared to the revised weights shown above, the original weights underweighted old AFDC cases, and overweighted new W-2 cases. The difference, however, is very small, and made almost no difference in the resulting analyses.