UC Berkeley
Working Papers

Title

The Impact of Child and Adult Disabilities on the Duration of Welfare Spells

Permalink

https://escholarship.org/uc/item/0bw4s4gd

Authors

Brady, Henry E.
Meyers, Marcia K.
Luks, Samantha

Publication Date

1998-02-22

The Impact of Child and Adult Disabilities on the Duration of Welfare Spells

Henry E. Brady
Department of Political Science and
Goldman School of Public Policy
University of California, Berkeley

Marcia Meyers
School of Social Work
Columbia University

Samantha Luks
Department of Political Science
University of California, Berkeley

February 22, 1998

The Impact of Child and Adult
Disabilities on the
Duration of Welfare Spells

Abstract

Studies of AFDC exits do not provide consistent evidence that disabilities, especially those of children, have much impact on transitions out of AFDC. Using a unique combination of survey and administrative data and a competing risks hazard model, we show that disabilities have been a significant factor in transitions out of AFDC in two competing ways. They have <u>decreased</u> the chances that households leave welfare entirely through work, marriage, or other circumstances, and they have <u>increased</u> the probability that households leave welfare through administrative mechanisms by making transitions to the SSI program. These two effects are roughly equal, though in different directions, so that studies of transitions out of AFDC have often failed to capture their competing impacts.

I. Introduction

Since the passage of the Family Support Act in 1988, many recipients of AFDC (Aid to Families with Dependent Children) have been required to work or prepare for work. With the passage of the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 and the creation of the new Temporary Assistance to Needy Families (TANF) program, states are required to impose time limits on the duration of aid and to employ even more stringent work tests for recipients. These work requirements may impose particular burdens on the estimated fifteen to forty percent of TANF households with severe to moderately disabled family members.

In the past, the Supplemental Security Income (SSI) program provided one option for households with disabled or ill members. The opportunity to move from AFDC to SSI increased in the late 1980s with the liberalization of SSI eligibility requirements for children. The 1996 federal welfare reforms reversed these changes, however, and restricted benefits for several categories of recipients, including adults whose primary diagnosis is alcoholism or drug addiction, non-citizen immigrants, and children with maladaptive behaviors and some other developmental or functional limitations. These new restrictions on SSI may further increase difficulties for families with disabled members who are now on welfare.

There is substantial evidence from general population surveys that women with disabilities and poor health are able to work fewer hours and command lower wages when they do work. Mothers caring for disabled and chronically ill children also reduce their work hours, presumably to meet the extra care needs of their children. This suggests that those families on AFDC with disabled adults or children should be less likely to leave AFDC than those without disabilities. Yet studies of AFDC exits do not provide consistent evidence that disabilities, especially those of children, have much impact on transitions out of AFDC. This suggests that there may be no reason to be especially concerned about AFDC or TANF families with disabled members.

Using a unique combination of survey and administrative data and a competing risks hazard model, we show that disabilities and health problems have been a significant factor in transitions out of the AFDC program in two competing ways. They have <u>decreased</u> the chances that households leave welfare entirely (that is, make transitions to no aid) through work, marriage, or other circumstances, and they have <u>increased</u> the probability that households leave welfare through administrative mechanisms by making transitions to the SSI program. These two effects are very roughly equal, though in different directions, so that a study of transitions out of AFDC that does not distinguish between leaving welfare entirely and leaving for SSI will fail to capture their competing impacts. These results suggest that the 1996 changes in welfare will pinch the disabled poor in two ways by requiring them to leave TANF for work when they do not have the wherewithal to do so and by reducing their options to move to SSI.

II. Disabilities, Work, and Welfare

A. Literature Review

Disabilities and poor health affect a substantial number of all adults and children. Depending on the data source and definition of disability used, analysts estimate that between seven and twenty percent of working aged adults have at least one functional limitation due to a disability or chronic health problem (Haveman et al. 1995; Wolfe & Haveman 1990). An estimated six percent of children have a physical, mental or psycho-social limitation (Wenger et al. 1996; McNeil 1993). Among both adults and children, disabilities and health problems are more common among the poor. Thirty percent of low-income individuals, and sixty percent of poor, single mothers, have chronic health problems (Wolfe & Hill 1995; Burkhauser et al. 1993). Children in low-income families have an estimated 40 percent higher risk of having a disability (Newacheck 1988; 1992).

Disabilities increase the likelihood that families will be poor in two ways. Care for disabled children can impose substantial medical and other costs on households (Newacheck & McManus, 1988; Jacobs & McDermott, 1989; Meyers, Lukemeyer, & Smeeding, 1998) thus leaving very little income for other necessities. Disabilities can also reduce the labor supply and earnings of adults in the household in two ways: directly when adults themselves are disabled and indirectly when disabled children impose extra caregiving responsibilities upon the adults.

Consider adult disabilities first. Labor supply theory views adult health as a component of human capital stock, with increases in health capital producing benefits in the form of increased time available for productive work (Grossman 1972a,b). Disabilities and poor health of adults decrease time available for market work and reduce labor supply. Because lower wages bring a proportionally lower marginal return on market time, the labor supply reductions would be expected to have a greater absolute financial impact on workers with higher human capital but greater proportional impact on those with lower capital and wages (Haveman, Wolfe, Kreider & Stone 1994).[1] Substantial empirical work supports this prediction. Haveman and his colleagues (1995) estimate that, on average, adults with disabilities and poor health lose as much as 62 percent of their earning capacity. Although the absolute loss is greatest for those with the highest level of education, the loss as a percent of potential earning capacity increases as education declines. Wolfe and Hill (1995a,b) demonstrate that the loss of earning capacity is also particularly great for single mothers, because disabilities reduce their capacity to work and increase the value of Medicaid if they forgo work for welfare. They estimate that women with poor or fair health have an earning capacity that is less than one-quarter that of healthier women.

Caregiving responsibilities for disabled and ill children are also predicted to have an

---

[1] Lower skilled workers may also be employed in more strenuous and potentially hazardous jobs that contribute to deterioration of health and reductions in labor supply (Haveman et al. 1994)

3

indirect impact on adults' labor supply. Standard labor supply theory predicts that the presence of dependent children in the family significantly reduces the probability that mothers will be employed and, among those who are employed, the number of hours worked. We would expect this "child penalty" to be even greater for mothers with disabled and chronically ill children, who may need more direct adult care and who may be more difficult to place in substitute child care arrangements. A number of small, qualitative studies have found that mothers caring for a disabled or ill child face more complex problems in balancing work and caregiving responsibilities (e.g. Freedman, Litchfield & Warfield 1995); many accommodate the extra caregiving burdens by withdrawing from the labor market or by substantially reducing their hours of work (Leonard et al. 1992; Lansky et al. 1979; Jacobs & McDermott 1989). Analysts using larger, nationally representative data also find that the presence of a disabled child reduces the probability of maternal employment (Salkever 1982; Mauldon 1991; Wolfe & Hill 1995). Single parents may face particularly great challenges to their ability to care for and support an exceptional child. Wolfe and Hill (1995) estimate that care for a disabled child reduces the earning capacity of single mothers by an average of 24 percent annually, in comparison to single mothers with healthy children.

Given these labor supply effects, we would also expect to observe greater reliance on means-tested, categorical welfare programs among families with disabled and chronically ill members. There is a large empirical literature on the dynamics of participation in welfare programs, most particularly on entries and exits from the recently repealed AFDC program (Moffitt, 1992). A number of analysts have included measures of disability in their estimations of the probability and the duration of welfare use. To date, however, empirical results have been mixed.

The most common measures are self-reports of activity limiting disabilities and poor

health among household heads, usually mothers. Blank (1989b) finds that limits on the physical activity of the household head increases the probability that the household will be on AFDC. Hutchins (1981), however, finds inconsistent evidence that a work-limiting disability increases the probability of AFDC entry or reduces the probability of exits. O'Neill, Bassi and Wolf (1987) find that self-reported disabilities are associated with longer spells of welfare receipt, but the significance of the disability measures is inconsistent. Plotnick (1983) finds no effect for disability status. In a more recent paper, Sandefur and Cook (1997) find that self-reported work limitations significantly reduce the likelihood that women make a permanent exit from AFDC.

Only a few researchers have included measures of the added caregiving responsibilities associated with disabled children. In her study of the role of medical need and Medicaid receipt on AFDC participation, Blank (1989b) reports that poorer perceived health status of other household members -- who may be dependent children -- increases the probability of AFDC participation. In one of the few analyzes of welfare durations that includes measures of both child and adult disability, Acs and Loprest (1997) find that the presence, number, type and severity of functional limitations reported by an adult woman all significantly reduce her probability of leaving AFDC for employment; however, these same measures are not significantly associated with other types of welfare exits (e.g. due to changes in household composition, marriage, or other transfer income). They find almost no evidence that measures of children's functional limitations reduce the probability of exits due to work, although children's limitations are associated with much higher probabilities of "other" exits if the child is under six.

B. Toward a More Fully Specified Model of Welfare Transitions

Given the consistent associations among disabilities, labor supply and earnings, the inconsistency of the empirical findings on disability and welfare use are puzzling. Two possible

explanations suggest themselves.

1. Omitted Explanatory Variables   Perhaps one or more important variables have been left out of these studies.   Some analysts have included mothers' health or disability status in their estimates of welfare use and transitions, but very few have included similar measures for children. While most models include some indicators of parents' child caregiving responsibilities, such as the number and ages of children in the household, they do not capture the added child penalty associated with care for children with chronic illnesses and disabilities.[3]

2. Outcome Mis-specification   A more serious problem concerns the measurement of welfare exits. Due primarily to data limitations, most studies of welfare participation have failed to capture potentially important differences in the way families leave AFDC. Data are typically obtained from household surveys that collect annual or monthly reports of "welfare" use, defined as cash assistance from AFDC or other "public assistance" programs. Research using administrative records suggests that these global measures of welfare use miss substantial movement *between* various cash assistance programs. This is particularly true for families with disabled members, who may be eligible for assistance through both the AFDC and SSI programs.

Although a single individual could not receive benefits from both SSI and AFDC programs, a family with a disabled child or a disabled mother could combine benefits from both. For example, a disabled child could receive SSI benefits while the rest of the household received AFDC (U.S. House of Representatives 1993). If a child was eligible for either AFDC or SSI benefits, the child's family was usually better off if the child received SSI benefits. For example, in 1993 a child eligible for the full federal SSI benefit would have

---

[3] It is also theoretically possible that the models have left out some important explanatory variables whose exclusion suppresses the impact of the disability variables on AFDC exits. This seems unlikely, however, because there is a great deal of agreement in the literature on the relevant explanatory variables and because it is hard to imagine omitted variables that would be powerfully correlated with measures of disability and that would suppress their effects.

received $434 per month (although actual payments were on average much lower). In most states, this amount was significantly greater than the marginal increase in AFDC benefits that would have resulted from including the child in the AFDC family unit. In the median state, the maximum monthly AFDC benefit in 1993 increased by $96 when family size increased from one to two and by $57 when family size increased from two to three. In California, a high benefit state, the monthly increases in benefits were $197 and $120 respectively (U.S. House of Representatives 1993). Clearly, it made sense for members of AFDC families to move to SSI if they were eligible.

Most studies of transitions from AFDC have grouped all exits from the program together. This means that transitions entirely off assistance are treated the same as transitions to SSI. This failure to distinguish between transitions "from welfare" and transitions "between welfare programs" has potentially serious implications for estimating the impact of disability on welfare exits. Theory and research predict that more, and more severe, disabilities and health problems will *reduce* human capital, earning potential, and the probability of leaving some form of assistance. But these same factors *increase* the probability that someone in the household will be eligible for cash assistance through SSI, either along with or instead of other forms of welfare. It is possible that earlier studies on the role of disabilities in welfare transitions have failed to find consistent effects because they estimated an "average" of two, offsetting effects.

III. Data, Measures and Sample Characteristics, and Theory

A. Data

Past studies of disability and transitions off AFDC, then, may have obtained equivocal results because data limitations made it impossible to combine good measures of adults' and children's disabilities with a study of movement out of AFDC into SSI or off aid entirely. Our approach to

solving these problems is to use several databases, including both survey and administrative data, that together provide the information we need. These databases have been constructed through the joint effort of University of California Data Archive and Technical Assistance (UC DATA) and the California Department of Social Services. They combine administrative and survey data for a stratified random sample of 1605 English or Spanish speaking AFDC households selected from four California counties (Los Angeles, Alameda, San Joaquin, and San Bernardino) in October 1992 which represent almost fifty percent of the California caseload. The sample includes both single-parent households (AFDC-FG) and two-parent households qualifying for benefits through the AFDC-UP program. Two-parent households were deliberately over-sampled to increase the number of such cases available for analysis.

The data analyzed in this paper include two-waves of a panel survey. Initial (Wave I) interviews began in October 1993, and 2,214 families were interviewed. Beginning in late spring 1995, a follow-up interview (Wave II) was fielded, and 1,764 families (containing a total of 3,759 children) were recontacted. Once we eliminate cases with incomplete information and cases for whom the caretaker was not a parent, we obtain 1605 families. In both waves, the adult female caretaker[3] for AFDC child(ren) was asked detailed questions about disability status, family and household composition, labor market activities, household income, and use of social services. Wave II of the survey also includes a set of questions to identify families with chronically ill or disabled children. These data are designed to allow researchers to assess the type and severity of the child's disabilities, expenses associated with the child's condition, and the impact of the child's condition on a parents' labor market participation and the family's financial well-being.

---

[3] In a very small number of cases, there was no female in the case and the adult caretaker was a man. For simplicity, we nevertheless refer to "mothers" throughout this paper.

Data from the household survey are augmented by administrative data from state and county welfare systems. In the original sample of about 15,000 families from which the survey respondents were randomly chosen, all cases were on aid during the sampling month (October 1992), and two types of administrative data are available for these families: (1) monthly aid code, payment data, and information on family structure and membership from the county welfare office records from December 1992 to December, 1995, and (2) statewide Medi-Cal MEDS data, which contains monthly aid codes from January 1987 to December 1995. The county data make it possible to identify the members of a household. The statewide MEDS data can be used to determine monthly AFDC and SSI receipt from January, 1987 to December, 1995 for individuals in a household.[4] This makes it possible to determine with precision when cases began the AFDC spell that continued through December, 1992,[5] when they leave this spell, and when any members move to SSI.

Tables 3 through 5 present weighted descriptive statistics on the independent and dependent variables. The weights adjust the sample to be representative of the four counties. The weighted results are only slightly different from the unweighted figures for the disability variables in Table 3 (at most 2%) and for the destination states in Table 4 (usually only about 2% to 5%). The weights do make a substantial difference in some of the household characteristics reported in Table 5 so both the weighted and unweighted data are presented. For the estimation of the models, we do not use these weights, and we treat each observation equally. This model based

---

[4] The two administrative data sources complement one another. The MEDS file covers a much longer span of time than the county data, and it includes information on SSI participation as well as receipt of AFDC, but it only has records on individuals with no (reliable) linkages between persons in the same household. The county data provide much better information on the membership in a household, but they cover a much shorter period of time and they only include AFDC receipt.

[5] A small number of cases which were initially sampled in October 1992 but which left aid before December 1992 were excluded from the survey sample. In addition, for those cases that began their AFDC spell before January 1987, we use the survey data to establish the beginning of the spell.

approach to inference (Skinner, Holt, and Smith, 1989, page 17) is typically used in this kind of analysis instead of a design based approach that would weight the observations to make them representative of the population. The model based approach seems especially appropriate in this case where we have vastly different sampling ratios for the four counties and the two AFDC programs.

B. Measures and Sample Characteristics

Disabilities and Health Problems ---- Our goal is to see how disabilities and health problems affect transitions from AFDC. To do this, we must have measures of the occurrence and severity of disabilities for both children and mothers. The occurrence and severity of children's conditions were measured using parental reports. Children with chronic health problems and disabilities were first identified by asking mothers whether any of their children: (1) had a chronic health problem (physical, emotional, or mental) that limited the amount or kinds of things that he or she could do or (2) had a disability or (3) a handicapping condition that limited the amount or kind of things he or she could do. We identified a household as including a disabled child if the respondent answered yes to any of these three screening questions. For each child identified as having a limiting condition, respondents were asked to identify up to two specific conditions (diagnoses) causing the child's impairment. To measure the severity of the children's' conditions, respondents were also asked age-specific questions about functional limitations and use of special health and educational services. These questions were based on questions in the 1992 National Health Interview Survey, the topical module on children's disability designed for the Survey of Income and Program Participation (SIPP), and a 1978 survey of households with SSI children undertaken by Urban Systems Research and Engineering Inc. Table 1 summarizes our categorization of the severity of children's conditions as none,

Table 1: Coding of Children's Health Conditions and Disabilities

· None
Child does not meet any of the conditions for Moderate or Severe listed below

Moderate
Child meets one or more of the following conditions

Needs "a little" more help than other children with his/her age with daily activities.
(e.g., eating, bathing, dressing, or getting around the house)

Unable to take part in usual activities for child of his/her age.

Attends special classes or receives special education services due to condition.

Misses "some" days of school due to condition.

Limited in ability to crawl, walk, run, or use stairs.

Severe
Child meets one or more of the following conditions

Child needs "a lot" more help than other children his/her age with daily activities
(e.g., eating, bathing, dressing, or getting around the house).

Misses "a lot" of days of school due to condition.

Prevented from going to school at all by condition.

moderate, or severe.

Respondents (mothers) were also asked about their own health and disability status. Conditions were identified by asking (1) whether the respondent had a health condition -- physical, emotional, or mental--that limited the amount or kind of work at a job she could do, and (2) how she would rate her own health (excellent, good, fair or poor). We identified households as having a disabled mother if she indicated that she had a limiting health condition or rated her own health as poor. To measure the severity of her condition, we used a follow-up question asking whether the condition prevented her from working at all or limited the amount or kind of work she could do. Table 2 summarizes the resulting categorization of mothers' conditions as none, moderate, or severe.

Disabilities and chronic illnesses were common in this population. Table 3 summarizes the prevalence of conditions at the household level. Sixty percent had no disabled or ill household member. The remaining forty percent of households had either a disabled/ill mother only (20.0 percent), a disabled/ill child only (11.1 percent), or both (8.6 percent). Severe limitations affected 13.8 percent of households -- 7.8 percent with severely disabled mothers, 5.2 percent with one or more severely disabled children, and .8 percent with both. In comparison to the sample mean, limitations were reported more frequently by African American respondents and less frequently by Latina mothers. These prevalence estimates are very similar to those obtained by Loprest and Acs (1995) using nationally representative data from the SIPP and Current Population Survey.

For the estimations of the competing risks model, we created four dummy variables to represent the disabilities in households: one for moderately disabled children, one for severely disabled children, one for moderately disabled mother, and one for severely disabled mother.

Program Participation and Transitions — Our primary interest is in transition off AFDC.

Table 2: Coding of Mothers' Health Conditions and Disabilities

None
Mother does not meet any of the conditions for Moderate or Severe listed below

Moderate
Mother meets one or more of the following conditions

Health condition -- physical, emotional, or mental -- limits the amount or kind of work she can do

Health is poor.

Severe
Mother meets following condition

Health condition -- physical, emotional, or mental -- prevents work altogether.

Table 3: Households by Disability Status of Mother and Child
Number (percent total)

Child(ren)'s Health and Disability Status	Mother's Health and Disability Status			
	No Disabilities or Health Limits	Moderate Disabilities or Poor Health	Severe Disability	TOTAL
No Disabled/Ill Children	969 (60.3)	224 (14.0)	95 (5.9)	1288 (80.2)
Any Moderately Disabled/Ill Children	126 (7.8)	64 (4.0)	31 (1.9)	221 (13.8)
Any Severely Disabled/Ill Children	53 (3.3)	31 (1.9)	13 (0.8)	97 (6.0)
TOTAL	1148 (71.5)	319 (19.9)	139 (8.7)	1605 (100.0)

Note: Entries are weighted to be representative of the four counties. Numbers may not add due to rounding.

Source: California Work Pays Demonstration Project, "English/Spanish and Foreign Language Surveys of Alameda, Los Angeles, San Joaquin, and San Bernardino Counties".

either by a family getting only SSI (but not AFDC) or by a family getting no assistance from either AFDC or SSI. Thus we must know when spells of AFDC or SSI begin and when they end. With multiple sources of data, we can track these transitions relatively well, although we must make decisions about how to interpret these sources and which ones to use when we have more than one available. Appendix 1 describes in detail how we have used the administrative and survey data, and it demonstrates the usefulness of having both sources of data.

Our general strategy was the following. Because of the way we sampled, every case began on AFDC or on AFDC and SSI. Each case was then followed until (a) it left AFDC entirely by moving completely off aid, (b) it left AFDC entirely by moving to SSI alone, (c) it was still on AFDC at the end of our observation period (December, 1995) or (d) it was receiving SSI but it was also still on AFDC at the end of the observation period. In the hazard models estimated later we combine outcomes (c) and (d) because both states involve no movement from AFDC (and no movement from the initial state),[6] but we have kept them separate in Table 4 which cross-tabulates the four possible final states that we observe with the nine categories of disability that come from Table 3.

The right-most marginals of Table 4, the distribution of final states, tell an interesting story. Every case began on AFDC or on AFDC and SSI although only 105 of the 1,605 cases initially received both AFDC and SSI. Table 4 shows that 24 percent of the cases exited aid altogether (that is, they were on neither SSI nor AFDC) at some point before the end of our observation period. (Some of these cases may have subsequently re-entered either SSI or AFDC, but we only consider first observed spells in this paper.) Seventy-four percent were still on AFDC (or AFDC plus SSI) by December, 1995, and two percent, or thirty-one cases, were on

---

[6] We do observe, however, some cases going from just AFDC to AFDC plus SSI and a few cases moving from AFDC plus SSI to just AFDC, but all of these cases remain on AFDC.

Table 4

Destination State of Family by Degree of Disability

Entries are Counts and Column Percentages

Destination		DEGREE OF DISABILITY								
		One or More Moderate			One or More Severe					
		Mom Moderate, Child OK	Mom OK, Child Moderate	Both Moderate	Mom Severe, Child OK	Mom OK, Child Severe	Mom Severe, Child Moderate	Mom Moderate, Child Severe	Both Severe	Total
Off Aid	283 / 29.2	47 / 21.0	22 / 17.1	10 / 15.7	13 / 13.7	6 / 11.2	6 / 18.7	0 / 1.0		387 / 24.1
SSI Only		5 / 2.1	9 / 7.3	3 / 3.9	10 / 10.1	2 / 4.7	0 / 0.8	0 / 0.8	5 / 19.7	31 / 2.0
On AFDC Only	669 / 69.0	154 / 68.7	77 / 61.0	39 / 60.9	44 / 46.1	26 / 49.4	12 / 39.1	20 / 65.8	2 / 12.7	1042 / 64.9
On AFDC and SSI	17 / 1.8	18 / 8.2	18 / 14.5	12 / 19.4	29 / 30.2	18 / 34.7	13 / 41.5	10 / 32.5	9 / 67.5	145 / 9.0
Total	969 / 60.3	224 / 14.0	126 / 7.8	64 / 4.0	96 / 5.9	52 / 3.3	31 / 1.9	30 / 1.9	14 / 0.8	1605 / 100

SSI only at some point before the end of our observation period in December, 1995. Of these thirty-one cases, nineteen were on SSI (and, of course, AFDC) at the time of sampling in December, 1992 and twelve entered SSI after December 1992. (The unweighted SSI case total is thirty-three of which sixteen entered SSI after December 1992.)

Table 4 shows that final states are strongly related to family disabilities. The combinations of disability are ordered from less severe to more severe situations using two rules: a single severe disability is more serious than one or more moderate disabilities and a child's disability is more serious than a mother's disability. The second rule may seem surprising, but these raw data and the models estimated later suggest that children's disabilities may, in fact, have more impact on AFDC status than those of a mother. Note that the chance of moving completely off aid (the first row of the table) decreases almost monotonically from about 29 percent in the left-most column to zero in the right-most column as the extent of disability increases in the family. The chance of moving to SSI, however, increases as the extent of disability increases in the family.[7] Similarly, the chance of being in a mixed AFDC/SSI case also increases with disability. These results provide rough and ready confirmation of our major thesis: as disability increases, AFDC cases are more likely to move to SSI and they are less likely to move completely off aid.

Other Characteristics   The result in Table 4 could, however, be the result of other differences among these cases. Our review of the literature[8] has identified race, ethnicity,

---

[7] This is not so easy to see. The number of cases for each cell are small for those moving to SSI alone, but if we combine all cases with only moderate disability and all with some severe disability, then the percentages of those moving to SSI go from zero for those with no disabilities, to 4.1 percent for those families with some moderate disability, to 6.7 percent for those with severe disability.

[8] In addition to Moffitt (1992), we have consulted the following papers on transition out of AFDC: Acs and Loprest (1997), Bane and Ellwood (1983), Barr and Hall (1981), Blank (1989), Boisjoly, Harris, Duncan (1996), Fitzgerald (1991, 1995), Harris (1991), Hoffman and Duncan (1988), Hoynes and MaCurdy (1994), Hutchens (1981), Kimmel (1995), Klawitter, Plotnick, and Edwards (1996), O'Neill, Bassi, Wolfe (1987), Pavetti (1992), Plotnick (1983), Sandefur and Cook (1997) . Some of the preceding papers consider entry to AFDC as well, but the following papers consider just entry to AFDC, Food Stamps, or poverty: Bane and Ellwood (1986), Blank and Ruggles (1994, 1996), and Harris (1996).

education, the number of children in a family (especially young children), and having a partner as important factors other than disabilities that affect the duration of welfare spells. It also seems likely that durations might differ by the four counties. Table 5 provides raw and weighted descriptive statistics for these other characteristics of the sample. In our estimations, we include three county dummy variables with Los Angeles as the base. Race and ethnicity are represented by separate dummy variables for blacks and for Latinos so that the base group is whites and all others. Education is represented by a variable coded one through five for the five levels of education on Table 5. The number of children under six and the number of children greater than or equal to six years old are included as separate variables. Having a partner is represented by a dummy variable. This is highly correlated with program status, AFDC-U or AFDC-FG. A separate variable for program status was insignificant so it was omitted from our model. Finally, age is broken into three categories using two dummy variables and those under 25 as the reference category.

The biggest differences between the raw and weighted results are for the percentages in the counties and the percentage having a partner because the sample was stratified by county and by AFDC programs type, FG and U, which essentially depend upon whether or not there is a partner. There are also some differences in race and ethnicity because the counties differ substantially in their racial and ethnic composition. These data show that our sample is typical of low income populations. About three-quarters of the respondents are members of minority groups, and about forty-five percent are without a high school diploma. The large fraction of Latinos is not typical of a national sample, although it is what we would expect for a sample including Los Angeles and San Joaquin Counties.

Table 5: Household Characteristics

County	Weighted	Unweighted
Alameda	8.4%	21.4%
Los Angeles	71.4%	37.3%
San Bernardino	15.7%	17.9%
San Joaquin	4.5%	23.4%
Race/Ethnicity		
White	21.0%	28.2%
Black	29.1%	25.0%
Latino	46.4%	41.2%
Other	3.6%	5.6%
Education		
8th grade or less	17.9%	16.7%
Some high school	26.9%	26.2%
High school grad. or GED	31.8%	32.8%
Some college	21.7%	22.3%
College grad. or more	1.8%	2.1%
Families with Children		
Under Age Six		
None	39.0%	35.5%
One	37.3%	37.3%
Two	18.1%	21.7%
Three	4.9%	4.9%
Four or more	.6%	.7%
Age six or older		
None	30.5%	30.2%
One	32.8%	29.3%
Two	19.9%	22.2%
Three	11.6%	12.3%
Four or more	5.4%	5.9%
With Partner	25.1%	41.9%
Age Categories		
Under age 25	19.2%	19.1%
25-40	61.3%	64.5%
41 or greater	19.4%	16.4%

C. Theoretical Expectations

Previous empirical and theoretical work in the field suggest the basic elements of a theory of welfare exits. We expect women with greater human capital (higher education) to have greater prospects for employment and earlier welfare exits. The presence of a spouse or partner is also expected to increase the probability of exiting welfare by increasing household income and child care options. Families with more children and younger children are expected to have longer spells of welfare receipt because increased caretaking demands and substitute child care costs reduce employment income, particularly for single mothers. Prior research also suggests that race will be an important predictor of welfare durations, with African American women experiencing longer spells of aid than Latina or White/European American women.

In this paper we extend these analyzes by considering the impact of mothers' and children's disabilities and health problems on the duration of welfare spells. We hypothesize three routes through which limiting conditions might influence the length of participation in the AFDC program, once other differences in individual and household characteristics are controlled.

First, because disabled women have worse prospects for employment and earnings, disabled mothers will be less likely to exit AFDC than their healthy counterparts. Categorical eligibility for Medicaid may also have greater value for women with disabilities and poor health, creating an additional disincentive for leaving aid.

Second, if additional care-giving demands for disabled and chronically ill children cause mothers to reduce their hours of work, families caring for special needs children may also have longer spells of AFDC receipt. The greater value of Medicaid, and the risk of losing health care coverage altogether, may also act as a brake on welfare exits.

A third route out of AFDC is a program transition: the disabled family member (mother or child) may qualify for the SSI program instead of AFDC. Under some circumstances,

households may continue to be eligible for AFDC even after one member is qualified for SSI. But other households may transition out of the AFDC program altogether. If the only child in the family transitions from AFDC to SSI, the household will become categorically ineligible for AFDC. If the mother qualifies for SSI, the higher benefit (combined with other household income) may put the household over the income limit for AFDC.

This model suggests the importance of separate estimates of the impact of disabilities or health conditions on exits to no aid and exits to other programs. The persistence and severity of disabilities or health problems would be expected to reduce the probability of entirely leaving welfare due to changes in income or other circumstances. But these same factors would be expected to increase the probability of leaving AFDC for other programs due to administrative reasons – such as increasing the likelihood that individuals would receive SSI instead.

IV. Empirical Results

A. Model and Estimation Procedures

Our concern with transitions from AFDC is best approached through event history modeling (Tuma and Hannan, 1984; Heckman and Singer, 1985; Blossfeld and Rohwer, 1995) in which the duration of spells on welfare is explicitly modeled. To estimate an event history model for our data, we must deal with three technical problems.

Sampling the Flow Versus Sampling the Stock – The survey data we use is a sample of the "stock" of welfare recipients and not the "flow" of welfare recipients into welfare. It is well known that a cross-sectional sample of welfare recipients includes a much larger number of those with long spells than does a cohort of those who are new to welfare. The intuition for this is simple. A cohort of those who are new to welfare includes people with both short and long spells. Those with short spells will come and go while those with longer spells will remain on

welfare. A cross-sectional survey, therefore, has a much higher chance of sampling a person with a long spell than a person with a short spell.[9] Consequently, a cross-sectional survey does not provide a random sample of spells. This means that standard event history methods which are designed to analyze a random sample of spells will produce biased results.

A number of authors (Hamerle, 1991; Guo, 1993) have discussed the ways that using cross-sectional samples produces biased results. Consider, for example, the construction of a hazard function from a cross-sectional sample of welfare durations. A hazard rate is calculated as the ratio of those leaving welfare in a given period of time divided by those at risk for leaving because they were still on welfare at the beginning of the period. In a cross-sectional sample of cases, there will be very few who leave welfare in a short period of time (because short spells are undersampled) and many who are at risk (most of whom have long spells). Hence the hazard rate for short durations will be very low. As time goes on, however, the hazard rate will appear to increase. This, in fact, is what we get when we estimate a Weibull hazard with our data using standard methods.[10] This increasing hazard contradicts all of the research on welfare of which we are aware. Every other study has found that the rate of leaving welfare declines over time.[11]

Lancaster (1979) showed, however, that consistent estimates of the hazard function can be obtained by using a conditional maximum likelihood procedure that is described in greater detail in Hamerle (1991) and Guo (1993). This procedure requires knowing the starting times for each spell and the duration of the spell as of the time of sampling. We have this information for our

---

[9] In other work with the California data we have found that the median spell length for a cohort of those new to welfare is about two years. The cross-sectional sample has a median spell length of four and one-half years.

[10] All of the estimations in this paper have been done with TDA which is a very flexible and powerful program specifically designed to analyze event history data. The program is described in detail in Blossfeld and Rohwer (1995).

[11] There are two explanations for this decreasing hazard rate: heterogeneity in the population or duration dependence. Most research suggests that heterogeneity is the major reason for a decreasing hazard.

sample, and we can implement this method in any program allowing for time-varying covariates.

    Functional Form   With the relatively small amount of data that we have, it seems sensible to simplify the estimation problem by assuming some parametric form for the hazard function. There are many possible choices, but we have chosen the Weibull because it allows for both monotonic increasing and monotonic decreasing hazards, because it includes the exponential or constant hazard rate model as a special case, and because several piece-wise exponential models provided no better fit than the Weibull. The Weibull hazard h(t) is the following function of time (t) on aid:

    (1) $h(t) = b \, a^b \, t^{b-1}$

where "a" and "b" are unknown parameters which must be greater than zero. If b 1, then this reduces to the exponential model with a constant hazard rate, $h(t) = a$. The parameter "a" can be interpreted as the baseline level of the hazard function and the parameter "b" indicates how much it increases with time (for b greater than one) or decreases with time (for b less than one).

    The parameters "a" and "b" can be expressed in terms of covariates. The usual practice is to express only "a," the baseline level of the hazard function, in terms of covariates, and we have followed this approach. For a vector of covariates X (which include a column of ones for a constant term) we use a standard exponential linkage function so that:

    (2) $a = \exp(X \, A^*)$.

where A^* is a vector of parameters including a constant A. With this linkage function the values of A^* can be positive or negative and "a" will still be greater than zero as it must be. Although we do not use covariates for the "b" parameter we express it in the same way:

    (3) $b = \exp(B)$.

This reparameterization means that a value of zero for B indicates that a constant hazard rate is appropriate for the data. A negative value indicates a decreasing hazard, and a positive value

indicates an increasing hazard. It also means that a positive coefficient for a covariate implies that an increase in the covariate will increase the hazard rate, that is, the rate of leaving welfare.

Most research on AFDC exits has used models of this type with a single outcome or a single transition. Table 6 presents estimates of a Weibull model, described by equations (1-3), of transitions from AFDC to off-AFDC in which an exit is either an exit to SSI or an exit completely off aid. This model does not take into account the possibility that the explanation for a transition to SSI alone is different from a transition entirely off AFDC and SSI. The A coefficient reported at the bottom of the table is the constant in the vector A^* in equation (2). The B coefficient at the bottom of the table is the B in equation (3). Note that the estimate of B is significantly negative which strongly suggests a decreasing hazard. The remaining coefficients are the values of A^* for the non-constant covariates in the X vector.

As we would expect, higher education and having a partner in a household substantially increase the chances of leaving welfare while having children under six years of age reduces the chance of getting off welfare. There are no county effects. As with past research using models of this type, the disability effects are almost all statistically insignificant, they are substantively small compared to the impact of education or even having a partner in the household, and somewhat perversely, cases with a severely disabled mother are more likely to exit AFDC than cases with a moderately disabled mother. If disabilities matter, then this model does not seem to capture their impacts -- perhaps because the model conflates competing effects.

<u>Multiple Transitions and Competing Risks</u>   The possibility of competing effects leads to competing risks models. In these models it is assumed that people can end their current status, in our case being on AFDC, in more than one way and that these ways compete with one another. In our present situation, a competing risk model assumes that each individual can be characterized by two durations on AFDC (or on AFDC plus SSI). One duration, let us denote its

Table 6: Weibull Model of Transitions off AFDC
Without Distinguishing Between Exits off Aid and Exits to SSI
(Coefficients are Exponential of Weibull Coefficients)

	Coefficient	Standard Error
Demographic Char.		
Education	0.34***	0.06
Age (25-40)	-0.10	0.16
Age (> 40)	-0.30	0.22
Black	-0.66***	0.17
Latino	-0.17	0.14
Partner in Household	0.70***	0.12
Number of Children < 6	-0.26***	0.08
Number of Children >= 6	-0.03	0.06
County Effects		
Alameda County	0.14	0.16
San Bernardino County	0.03	0.16
San Joaquin County	0.01	0.15
Disabilites		
Moderately Disabled Child(ren)	0.08	0.16
Severely Disabled Children	-0.55	0.30
Moderately Disabled Mother	-0.35*	0.16
Severely Disabled Mother	-0.24	0.23
Weibull Hazard Parameters		
A coefficient	-4.75	0.25
B coefficient	-0.17	0.08
Log Likelihood	-2541.12	

*p<.05, **p<.01, ***p<

length by T_1, ends with a transition off aid entirely (i.e., not receiving AFDC or SSI). The other duration, let us denote its length by T_2, ends with a transition off AFDC to SSI alone. Only one of these transitions is observed, and it is the one for which the duration T_1 or T_2 is smallest because it occurs first. If T_1 and T_2 are correlated, then there are severe limitations on what can be estimated (Lawless, 1982, Chapter 10), but if they are assumed independent, then it is straightforward to generalize standard models to estimate competing risks models. We assume that T_1 and T_2 are independent to make progress in understanding the impact of disabilities.

A competing risks formulation assumes that there are two hazard rates, $h_1(t)$ for the transition from AFDC to off aid entirely and $h_2(t)$ for the transition from AFDC to being on SSI alone. Each hazard rate is assumed to have separate parameters: a_1 and b_1 for $h_1(t)$ and a_2 and b_2 for $h_2(t)$. As we did above, we only allow a_1 and a_2 to vary with the covariates and we use a standard exponential linkage function:

(4) $a_1 = \exp(X A_1{}^*)$ and $a_2 = \exp(X A_2{}^*)$.

Although we do not use covariates for the "b" parameter we express it in the same way:

(5) $b_1 = \exp(B_1)$ and $b_2 = \exp(B_2)$.

Thus with two competing risks we will obtain two columns of estimates for each model instead of just one as in Table 6.

B. Final Results

Table 7 presents estimates of three different versions of the competing risks models. The first set of columns, "Transitions off Aid," are for the transition from AFDC to being completely off aid. The second set of columns is for "Transitions to SSI." Each model yields one set of estimates for transitions off aid and another for transitions to SSI. The three models are estimated with different sets of covariates   "Demographics and County Dummies Only,"

Table 7: Competing Risks Weibull Model of Transitions off AFDC
(Cell Entries are Exponential of Weibull Coefficients, Standard Errors in Parentheses)

	Transitions off Aid			Transitions to SSI		
	Demographics/ Cnty. Only	Disability Only	Full Model	Demographics/ Cnty. Only	Disability Only	Full Model
Demographic Char.						
Education	0.38*** (0.07)	-	0.36*** (0.07)	0.02 (0.18)		0.07 (0.22)
Age (25-40)	-0.19 (0.17)		-0.11 (0.17)	0.43 (0.67)		0.04 (0.73)
Age (> 40)	-0.62* (0.24)		-0.42 (0.24)	1.29 (0.82)		0.92 (0.87)
Black	-0.81*** (0.19)		-0.78*** (0.19)	0.18 (0.41)		0.07 (0.42)
Latino	-0.06 (0.15)		-0.09 (0.14)	-2.33* (0.98)		-2.30* (1.06)
Partner in Household	0.78*** (0.13)		0.72*** (0.13)	0.23 (0.36)		0.49 (0.40)
Number of Children < 6	-0.29*** (0.08)		-0.27*** (0.08)	0.06 (0.22)		0.06 (0.24)
Number of Children >= 6	-0.04 (0.06)		-0.03 (0.06)	0.13 (0.18)		0.08 (0.20)
County Effects						
Alameda County	0.18 (0.17)		0.21 (0.16)	-0.31 (0.56)		-0.49 (0.61)
San Bernardino County	-0.05 (0.18)		-0.03 (0.17)	0.65 (0.52)		0.56 (0.56)
San Joaquin County	-0.05 (0.18)		-0.02 (0.16)	0.51 (0.49)		0.42 (0.52)
Disabilites						
Moderately Disab. Child(ren)		-0.23 (0.19)	-0.08 (0.17)		1.63** (0.59)	1.65* (0.64)
Severely Disabled Child(ren)		-1.64*** (0.49)	-1.39** (0.44)		2.15** (0.76)	2.26** (0.83)
Moderately Disab. Mother		-0.40* (0.18)	-0.34* (0.16)		-0.23 (0.52)	-0.41 (0.55)
Severely Disabled Mother		-0.68* (0.30)	-0.59* (0.28)		1.32* (0.57)	0.94 (0.52)
Weibull Hazard Parameters						
A coefficient	-4.87 (0.26)	-4.31 (0.09)	-4.78 (0.25)	-7.88 (1.19)	-8.20 (0.91)	-8.66 (1.46)
B coefficient	-0.21 0.09+B28	-0.28 (0.09)	-0.17 (0.08)	0.04 (0.25)	-0.01 (0.24)	-0.04 (0.28)
Log Likelihood	-2644.41	-2683.88	-2614.32			

N=1605

*p< 05, **p<.01, ***p<.001

"Disability Only," and a "Full Model" including everything in the other two models.

Consider the A and B parameters which describe the shape of the hazard. For all models, the transitions off aid are described by a decreasing hazard rate because B_1 is significantly negative while the transitions to SSI are described by a constant hazard rate because B_2 is not significantly different from zero. This is interesting because it suggests that the timing of movements to SSI are a Poisson process which occur truly randomly -- perhaps because disabilities strike at random times or because information and knowledge about SSI is obtained randomly.

As for the covariates other than disabilities, education and having a partner facilitate leaving AFDC while being Black or having young children impedes leaving.[12] There is some evidence that older women are less likely to leave aid. The number of children six and older have no impact on leaving aid, and there are no county effects. Turning to exits to SSI, only being Latino seems to matter.

This leaves us with the parameters of most interest, the disability variables. These variables have very substantial impacts on the movement to SSI with severe disabilities having a greater impact than moderate ones and with children's disabilities seeming more important than mother's disabilities. In addition, moderately disabled children seem likely to move their family to SSI whereas moderately disabled mothers do not. This greater importance of children's disabilities might be a real effect, but it also might be the result of our greater ability to measure children's disabilities and their transitions to SSI. Whatever the explanation for these differences, it is hardly surprising to find that disabilities move families to SSI.

It is much more surprising, at least given the previous literature, to find that disabilities substantially reduce the ability of families to move to complete independence off AFDC and SSI.

---

[12]   In other models, we have included participation in FG or U as a dummy variable, and we have found that this is significant only if the partner variable is omitted.

The impact is very substantial for severely disabled children, and it is still quite substantial for severely disabled and even moderately disabled mothers. For example, the impact of a severely disabled child is about double that of not having a partner in the household. Or it is about equal to a four year reduction in educational level. The impact of a severely disabled mother is about one-half of this effect.

Figure 1 presents a simulation of the impact of having severely disabled children. The top two lines are for transitions off aid. The very top line is for transitions off both AFDC and SSI for a family with no disabled children. The hazard rates for this group suggest about a .015 chance of leaving aid entirely for the first few months and a chance of around .009 (less than one percent) of leaving after being on aid for a few years. A family with a severely disabled child has much smaller chances, about one-third the size, of leaving aid entirely as indicated by the dashed and dotted line on Figure 1. The bottom two lines are for transitions to SSI. The family's chances of going to SSI alone are increased substantially from the dashed line to the dotted line above it if the family has a disabled child, although the hazard rate is still very low — only about one-fifth of one percent.

Figure 2 presents a simulation of the impact of having a severely disabled mother. As before, the top-most line is the hazard for leaving aid entirely. The next line down is the hazard for a case with a severely disabled mother which is roughly only two-thirds as likely to leave aid entirely with a hazard rate of about one-half of a percent. The transition rates to SSI are very low for either situation as indicated by the bottom two lines, but they are about double for cases with a severely disabled mother compared to those without a severely disabled mother.

Figure 1

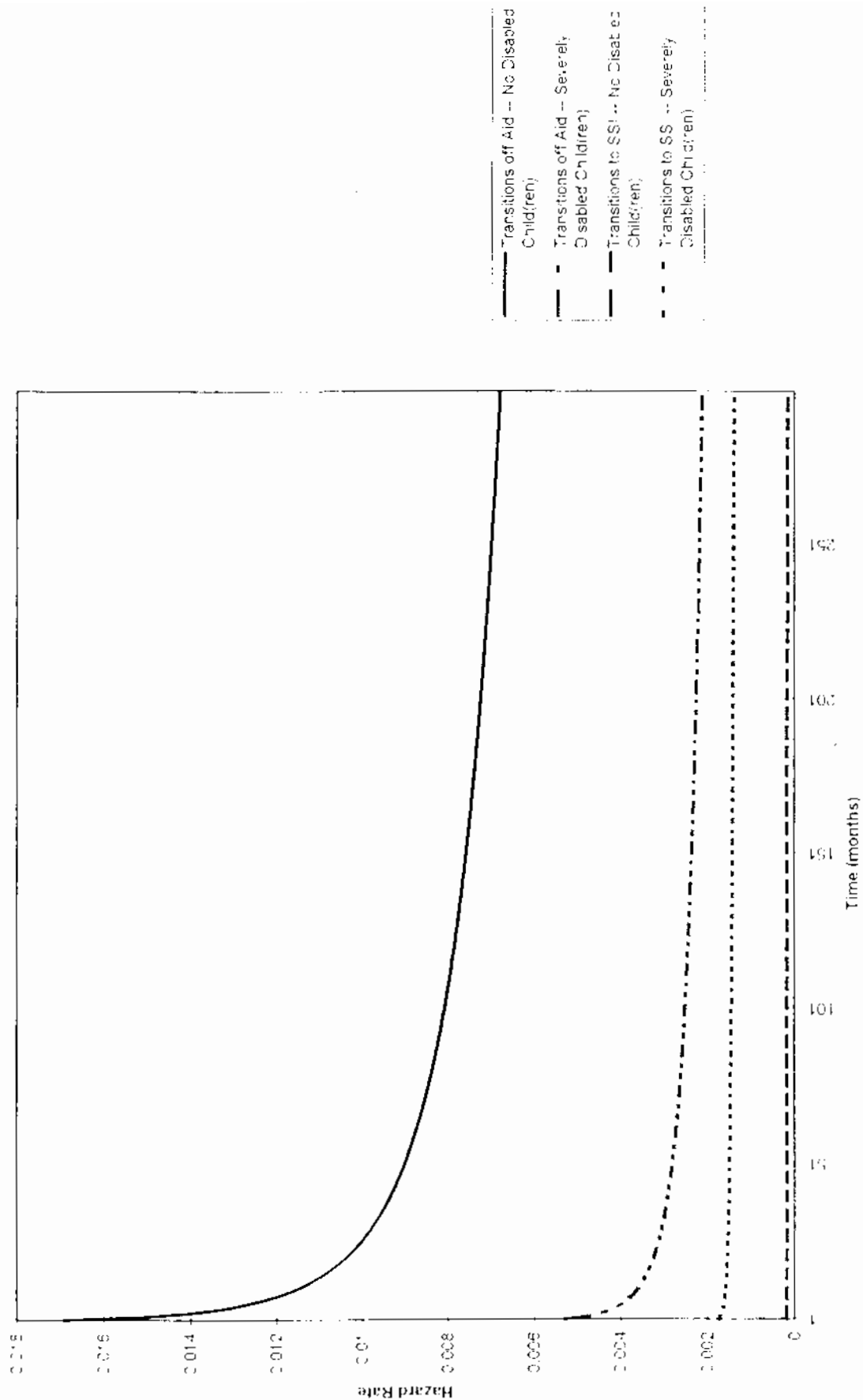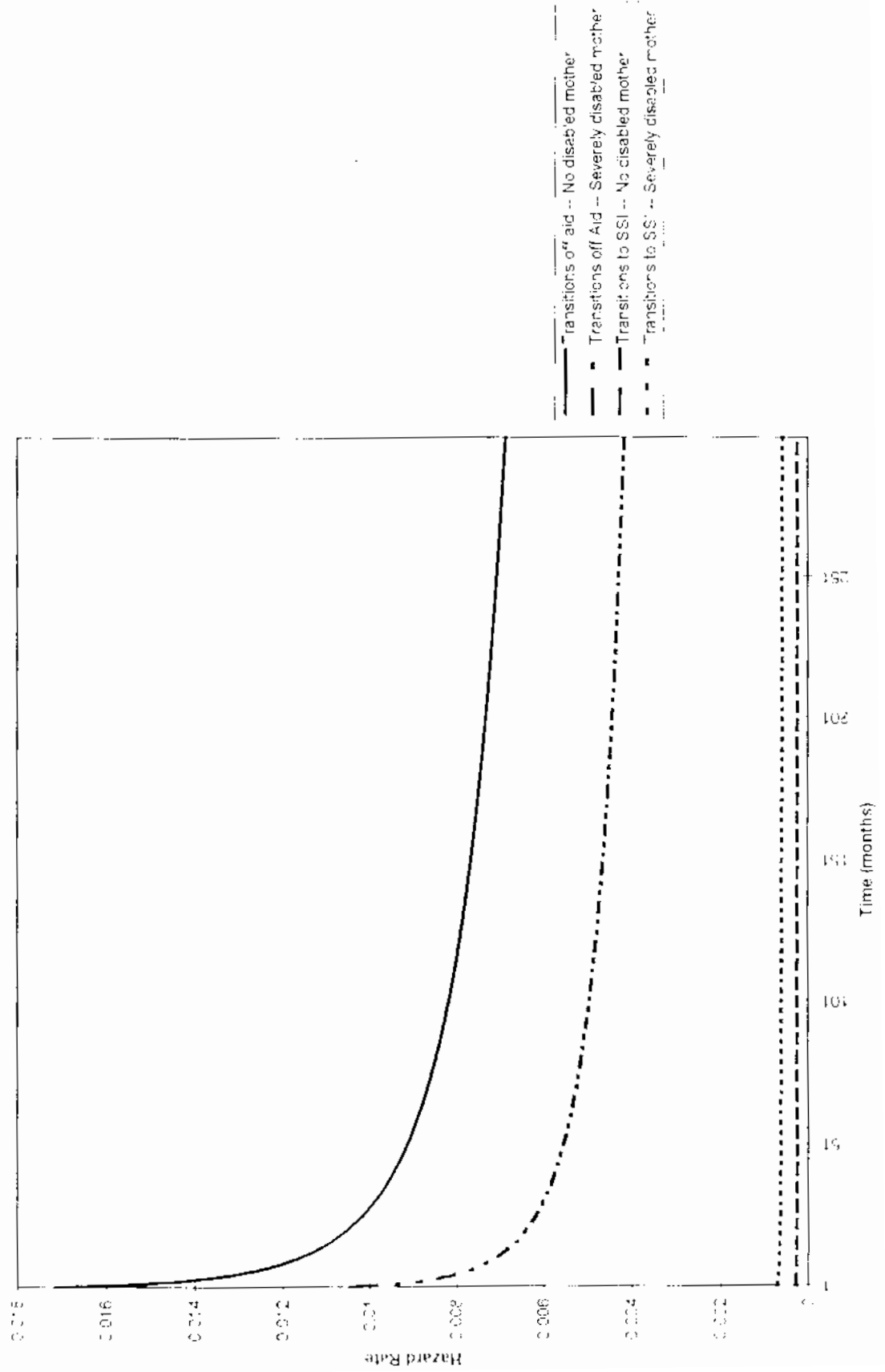AFDC Transitions and the Effects of Having a Severely Disabled Child

Figure 2

AFDC Transitions and the Effects of Having a Severely Disabled Mother

V. Conclusions

This analysis suggests that disabilities and health problems have been a significant factor in transitions out of the AFDC program in several ways. They have significantly decreased the chances that households leave welfare entirely (that is, make transitions to no aid) through changes in behavior or other circumstances, and they have increased the probability that households leave welfare through administrative mechanisms by making transitions to the SSI program. In policy terms, these exits might be thought of as transitions to "independence" and to "partial independence" respectively. It is especially interesting that children's disabilities have a very significant impact of the ability to achieve complete independence.

The prevalence and impact of disabilities and health problems in the welfare population have important implications for welfare and disability policies. Using data for four counties representing almost half of the caseload in the state of California, we find that disabilities and health problems are very common among AFDC recipients. As many as 40 percent of households report some type of limiting condition for a child or mother. More significantly, approximately 14 percent had a severely disabled mother or child. These estimates are similar to those of other analysts using nationally representative samples.

Furthermore, the data in the paper show that there is a significant group of AFDC families who have severely disabled members and who do not receive SSI. The third row of Table 4 indicates that there are 104 families with severely disabled members who receive AFDC only. This is 6.5 percent of the total sample, and another 2.4 percent has both an adult and a child with moderate disabilities. It is not clear why these families have not been able to obtain SSI, but we do know that the new TANF program of the Work and Personal Responsibility Reconciliation Act of 1996 puts pressure on these families to limit their receipt of TANF and to work. At the same time the Act restricts SSI benefits for several categories of recipients,

including children with maladaptive behaviors and some other developmental/functional limitations. These new requirements limit the options of those welfare families with disabilities, especially those families with disabled children, and it makes it even more unlikely that those on TANF will be able to move to SSI.

This has important implications for the new legislation which allows a 20 percent exemption for families who cannot meet the new requirements. If we add together the 9.0 percent of our cross-sectional sample who are on AFDC and SSI at the end of our observation period (and who might be at risk for losing their SSI benefits under the new legislation) with the 6.5 percent of the families with severely disabled members identified above, we have a total of almost 16 percent. This comes perilously close to the 20 percent exemption, and it does not include families on AFDC with members who are moderately disabled, women with very young children, caretaker relatives, and other groups that might also be considered for exemption.

Households with disabled members are already over-represented in the welfare caseload. If states succeed in meeting goals to reduce caseloads and increase participation in work-fare in the next few years, they are likely to do so because women with fewer barriers to independence increase their work effort and reduce their reliance on welfare. This will leave behind the hardest to serve, least employable recipients, including families with the most seriously disabled members. This paper suggests that this group faces significant barriers to leaving the welfare rolls.

References

Acs, G. and P. Loprest. 1997. "The Effect of Disabilities on Exits from AFDC. Washington, DC: The Urban Institute.

Bane, M.J. and D. Ellwood. 1986. "Slipping Into and Out of Poverty: The Dynamics of Spells." *Journal of Human Resources*, 21: 1-23.

Bane, M.J. and D. Ellwood. 1983. "The Dynamics of Dependence: routes to Self-Sufficiency." Report prepared for Office of Income Security Policy." U.S. Department of Health and Human Services.

Barr, N.A. and R.E. Hall. 1981. "The Probability of Dependence on Public Assistance." *Economica*, 48:109-123.

Blank, R.M. 1989a. "Analyzing the Length of Welfare Spells." *Journal of Public Economics*, 39: 245-73.

_____. 1989b. "The Effect of Medical Need and Medicaid on AFDC Participation," *The Journal of Human Resources*, XXIV: 54-87.

Blank, R.M. and P. Ruggles. 1996. "When Do Women Use AFDC and Food Stamps? The Dynamics of Eligibility vs. Participation," *The Journal of Human Resources*, XXXI: 57-89.

Blank, R.M. and P. Ruggles. 1994. "Short-Term Recidivism Among Public Assistance Recipients." *American Economic Review, Papers and Proceedings*, Volume 84: 49-53.

Blossfeld, H.P and G. Rohwer. 1995. *Techniques of Event History Modeling*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc.

Boisjoly, J., K.M. Harris, and Greg J. Duncan. 1996. "Initial Welfare Spells: Trends, Events, and Duration, With Implications for Welfare Reform." Paper presented at the APPAm Annual Research Conference.

Brady, H.E. and S.C. Luks. 1995. "Defining Welfare Spells: Coping with Problems of Survey Responses and Administrative Data." Paper presented at the American Political Science Association Annual Meeting, August 30, 1995, Chicago, IL.

Burkhauser, R., Haveman, R.., & Wolfe, B. 1993. How People With Disabilities Fare When Public Policies Change. *Journal of Policy Analysis and Management*, 12(2) 251-269.

Fitzgerald, John. 1991. "Welfare Durations and the Marriage Market: Evidence from the Survey of Income and Program Participation," *The Journal of Human Resources*, XXVI: 545-61.

Fitzgerald, John. 1995. "Local Labor Markets and Local Area Effects on Welfare Duration."

Journal of Policy Analysis and Management, Volume 14: 43-67.

Freedman, Ruth I., Litchfield, Leon C., and Warfield, Marji Erickson. 1995. "Balancing work and family: perspectives of parents of children with developmental disabilities." *Journal Families in Society: The Journal of Contemporary Human Services*, v76, n8 (Oct. 1995):507-514.

Grossman, M. 1972a. *The Demand for Health: a Theoretical and Empirical Investigation*. New York: Columbia University Press.

Grossman, M. 1972b. On the concept of health capital and the demand for health. *Journal of Political Economy*, 80, 223-255.

Guo, G. 1993. "Event-History Analysis for Left-Truncated Data," In Peter V. Marsden (ed.) *Sociological Methodology*, Washington, DC: American Sociological Association.

Hamerle, A. 1991. "On the Treatment of Interrupted Spells and Initial Conditions in Event History Analysis." *Sociological Methods and Research*, 19(3): 388-414.

Harris, K.M. 1996. "Life After Welfare: Women, Work, and Repeat Dependency." *American Sociological Review*, Volume 61: 407-426.

Harris, K.M. 1992. "Work and Welfare among Single Mothers in Poverty." Paper presented at the APPAM Annual Research Conference, October 29, 1992 in Denver, CO.

Harris, K.M. 1991. "Teenage Mothers and Welfare Dependency: Working Off Welfare," *Journal of Family Issues*, Volume 12: 492-518.

Haveman, R., Wolfe, B., Buron, L. & Hill, S. 1995. The Loss of Earning Capability from Disability/Health Limitations: Toward a New Social Indicator. *Review of Income and Wealth* 41(3): 289-308.

Haveman, R., Wolfe, B., Kreider, ? & Stone, ? 1994. ????

Heckman J.J. and B. Singer. 1985. "Social Science Duration Analysis," In J.J. Heckman and B. Singer (eds.), *Longitudinal Analysis of Labor Market Data*. Cambridge: Cambridge University Press.

Hoffman, S. and Greg Duncan. 1988. "A Comparison of Choice-Based Multinomial and Nested Logit Models: The Family Structure and Welfare Use Decisions of Divorced or Separated Women." *The Journal of Human Resources*, XXIII: 550-562.

Hoynes, H. and T. MaCurdy. 1994. "Has the Decline in Benefits Shortened Welfare Spells?" *The American Economic Review*, 84(2): 43-48.

Hutchens, R. 1981. "Entry and Exit Transitions in A Government Transfer Program: The Case

of Aid to Families with Dependent Children," *The Journal of Human Resources*, XVI: 217-237.

Jacobs, P. and S. McDermott. 1989. "Family Caregiver Costs of Chronically Ill and Handicapped Children: Method and Literature Review," *Public Health Reports*, 104: 158-163.

Kimmel, Jean. 1995. "The Effectiveness of Child-Care Subsidies in Encouraging the Welfare-to Work Transition of Low-Income Single Mothers," *Papers and Proceedings of the American Economic Association*," Volume 85: 271-275.

Klawitter, M., Robert Plotnick, and Mark Edwards. 1996. "Determinants of Welfare Entry and Exit by Young Women." Institute for Research on Poverty, Discussion Papers.

Lancaster, T. 1979. "Econometric Methods for the Duration of Unemployment." *Econometrica*. 47(4): 939-956.

Lansky, S., N. Cairns, G. Clark, J. Lowman, L. Miller, and R. Trueworthy. 1979. "Childhood Cancer: Nonmedical Costs of the Illness," *Cancer*, 43: 403-408.

Lawless, J.F. 1982. *Statistical Models and Methods for Lifetime Data*. New York: John Wiley and Sons.

Leonard, B., J.D. Brust, and J.J. Sapienza. 1992. "Financial and Time Costs to Parents of Severely Disabled Children," *Public Health Reports*, 107: 302-312.

Loprest, P. & Acs, G. 1995. Profile of Disability Among Families on AFDC. Unpublished manuscript. Washington D.C.: Urban Institute.

Mauldon, J. 1991. Employment of Mothers with Disabled Children. Paper presented at the Association for Public Policy Analysis and Management Annual Research Meeting, Bethesda MD.

Meyers, M.K., Lukemeyer, A. & Smeeding, T. Forthcoming, 1998. Work, Welfare and the Burden of Disability: Caring for Special Needs Children in Poor Families. Social Service Review.

McNeil, J.M. 1993. "Americans with Disabilities, 1991-92," *Current Population Reports*, No. P70-33. Washington, DC: U.S. Bureau of the Census.

Moffitt, Robert. 1992. "Incentive effects of the U.S. welfare system: a review." *Journal of Economic Literature* v30. n1 (March, 1992):1 (61 pages).

Newacheck, P. 1988. "Testimony before the Senate Finance Committee U.S. Congress." *Children's Health Care Issues: Hearings before the Senate Committee on Finance*. Washington, DC: U.S. Government Printing Office.

Newacheck, P. and M. McManus. 1988. "Financing Health Care for Disabled Children." *Pediatrics*, 81: 385-94.

Newacheck, P. and W.R. Taylor. 1992. "Childhood Chronic Illness: Prevalence, Severity, and Impact." *American Journal of Public Health*, 82: 364-71.

O'Neill, J.A., L.J. Bassi, and D.A. Wolf. 1987. "The Duration of Welfare Spells." *The Review of Economics and Statistics*, 69: 241-248.

Pavetti, L.A. 1992. "The Dynamics of Welfare and Work: Exploring the Process by Which Young Women Work Their Way Off Welfare." Paper presented at the APPAM Annual Research Conference, October 29, 1992, Denver.

Plotnick, R. 1983. "Turnover in the AFDC Population: An Event History Analysis." *The Journal of Human Resources*, XVIII(1): 65-81.

Sandefur, Gary D. and Steven D. Cook. 1997. "Duration of Public Assistance Receipt: Is Welfare a Trap?" Institute for Research on Poverty, Discussion Papers.

Salkever, D.S. 1982. "Children's Health Problems and Maternal Work Status." *Journal of Human Resources*, 17: 94-109.

Skinner, C.J., D. Holt, and T.M.F. Smith. 1989. *Analysis of Complex Surveys*. Chichester: John Wiley and Sons.

Tuma, N.B. and M.T. Hannan. 1984. *Social Dynamics: Models and Methods.*" New York: Academic Press.

U.S. House of Representatives. 1993. *1994 Green Book*. Washington, D.C.: Committee on Ways and Means.

Wenger, B.L., Kaye, H.S. & LaPlante, M.P. 1996. "Disabilities Among Children." *Disability Statistics Abstract, 15:* 1-4.

Wolfe, B & Hill, S. 1995a. "The Effect of Health on the Work Effort of Single Mothers." *The Journal of Human Resources,* 30(1): 42-62.

Wolfe, B & Hill, S. 1995b. "The Health, Earning Capacity, and Poverty of Single Mother Families." In *Poverty and Prosperity in the USA in the Late Twentieth Century,* D. Papadimitriou & E. Wolff (ed). Macmillan Press Ltd.

Appendix 1

Determining AFDC spell lengths with the combined data is a multi-stage process. All families included in this analysis were receiving AFDC payments as of December 1992, but we do not have a precise date of when the spells began or ended. To make either determination, we must decide what constitutes a break in AFDC. This is not as easy as simply taking any break in aid as the beginning or end of a spell. Often in administrative data, a case will appear to be off aid due to "administrative churning," which can result from the recipient not turning in the required forms on time or a data entry mistake in the county office. Clearly, this type of break has nothing to do with the family's needs. Another common scenario occurs when the respondent gets a job that lasts only a few weeks, or picks up enough temporary work to push her over the income limit for a short period of time. Although these recipients are working, conceptually it is difficult to determine if they are "off aid." To deal with these problems, we find the start of AFDC spells by looking for a break in receipt that is at least three consecutive months. If we do not find such a break before January 1987 when our administrative data begins, we look for a break of just two months. Brady and Luks (1995) provide a discussion of why two or three months seems like the best definition of a break in aid.
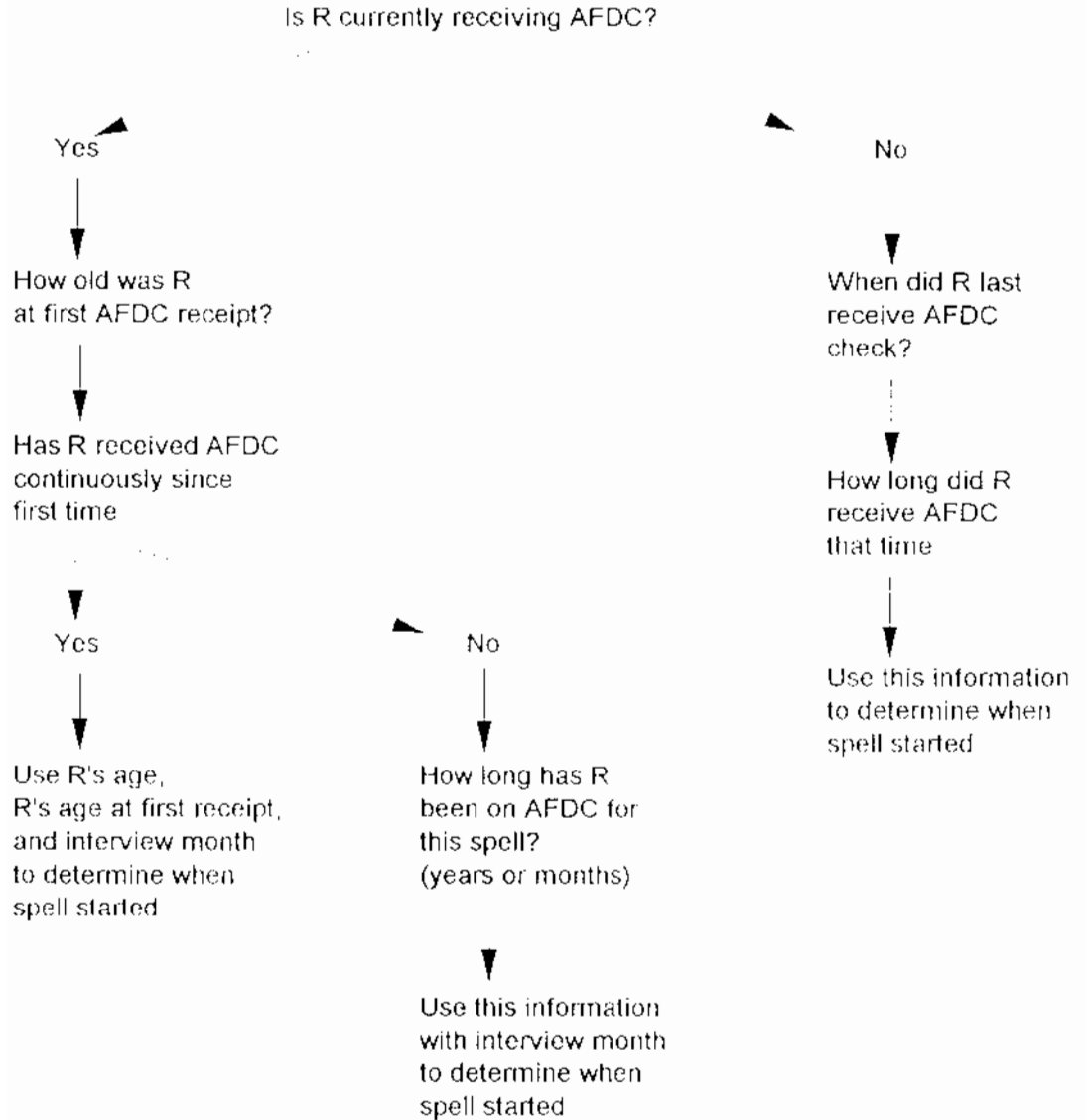
Because the MEDS data only go back to January 1987, they cannot be used to establish the exact beginning of AFDC spells for the 27.5% percent of the respondents who do not have two or three month breaks between January 1987 and December 1992. These cases, then, would be left-censored if we could only use the administrative information to determine their beginning date. Traditionally in events history analysis, left-censored cases are dropped from the analysis, although there is good reason to worry about this practice. To preserve these cases we construct the beginning of the spell length using the Wave I retrospective responses on when the spell began.

A series of questions about the receipt of AFDC was asked in the Wave I survey (See Figure 3). First, the respondent was asked how old she was the first time she went on AFDC. Then she was asked if she had been off of welfare since the beginning of her first spell. For those respondents who had no break in their spells, the length of their current spell was calculated by subtracting their age at their first aid receipt from their current age. Those respondents who did have a break in their spells but were still on welfare were asked how long ago (in years) their most recent spell started. If the period of time was less than one year, the respondent was asked how many months she had been on aid. Using the date of the interview and the reported spell length, the approximate month and year the spell started was constructed. Some respondents, however, had already left aid by the time of the first interview. These respondents were asked when they last received aid and how long they were on aid that time. From this information, the month and year they started aid was constructed.

We use all three data sources to determine SSI receipt. County administrative data were used to collect identifying information for all persons associated with an AFDC case. The statewide (MEDS) administrative data were then used to determine whether and when these persons were receiving SSI between January 1987 and December 1995. This administrative data provides one list of SSI recipients. A second list was obtained through survey questions about the respondent's and her children's participation in SSI at the time of the survey. For children receiving SSI, the survey also asked when the child started SSI. Our goal was to use the administrative data because these data provide monthly information about when an individual was receiving SSI.

Figure 3

Using Wave I Survey Data to Determine Beginning of AFDC Spell

Is R currently receiving AFDC?

Yes

How old was R
at first AFDC receipt?

Has R received AFDC
continuously since
first time

Yes

Use R's age,
R's age at first receipt,
and interview month
to determine when
spell started

No

How long has R
been on AFDC for
this spell?
(years or months)

Use this information
with interview month
to determine when
spell started

No

When did R last
receive AFDC
check?

How long did R
receive AFDC
that time

Use this information
to determine when
spell started

There are discrepancies between the survey data and the administrative data. Of the individuals who reported SSI receipt on one of the survey waves, 78.5 percent also appear on the administrative data. It seems quite possible that we might have missed the remaining 21.5 percent in our attempts to find SSI recipients in the administrative data. Consequently, we assumed that all of these cases reported on the survey were genuine cases of SSI receipt.

Of the individuals receiving SSI on the administrative data, 55.5 percent also appear on the surveys. Some of these may have started to receive SSI after the survey, but the leading explanation for this rather low concordance is that administrative data probably picked up people who are not part of the case — this includes former partners of the respondent, absent fathers, grand-parents, aunts, uncles, and other adults on whom information might have been collected at some point. To minimize this problem, we matched individuals in the administrative data who were receiving SSI to those in the survey using the following rules:

1. Individuals on the county records were matched by age and sex to the respondent on the survey (age had to be within three years of the survey response). If two individuals were matched to the respondent, the one closer in age was assumed to be the respondent. This person's SSI experience recorded in the administrative data was used to help characterize the case.

2. All other adults found on the administrative data were excluded from our characterization of the case. This includes non-respondent parents for AFDC-U cases. We excluded them because we did not ask the non-respondent parent about his or her disabilities on the survey.

3. Individuals on the county records under 16 who were not matched as the respondent were marked as children and their SSI experience was used to characterize the case of which they were a part.[13]

Once these more restrictive rules were used to match cases were made, 77.8 percent of the administratively identified SSI recipients also appeared on the survey, and only 19.0 percent of the unmatched administrative cases appeared to receive SSI according to the survey. We included all of the cases that appeared in the administrative data that satisfied the matching rules.

The monthly information on the remaining individuals was aggregated into cases: if any respondent or child in the case was receiving SSI in a given month, the case was recorded as receiving SSI for that month. Then, for those cases that claimed SSI receipt, but for whom administrative data were unavailable, the SSI information on the survey was used. The survey asks detailed questions about whether any child in the case receives SSI and when the child first went on SSI. The questions about the mother are less precise; she is only asked if she receives SSI. If she does, we assume that she has received SSI for the entire time she has been on AFDC. Because the survey data does not contain information about when SSI receipt ends, we assume that the case is still on SSI at the end of the time period of the data.

---

[13] We also did many other checks, and we excluded a small number of cases for other reasons. For example, children receiving SSI on the administrative data who were in a survey case that showed only the mother on SSI were dropped. Similarly, mothers matched to a survey case that showed only children on SSI were dropped — that is, the administrative data were not used for this case.