

# Welfare and Work Outcomes after Substance Abuse Treatment

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Employment and welfare outcomes are investigated for women who received both welfare and substance abuse treatment in Florida from 1994 to 1999. By linking information from three statewide administrative databases, we identify 4,236 women who meet both criteria. Over the study period, there was a significant increase in the proportion of women moving from welfare to work. Predictors of posttreatment employment include demographic characteristics, treatment-related characteristics, and working during the month of admission. Both completion of treatment and length of time in treatment are associated with employment.

## Introduction

Historically, the majority of financial assistance to poor families in the United States has been provided through the entitlement program Aid to Families with Dependent Children (AFDC). Welfare reform, enacted by Congress through the Personal Responsibility and Work Opportunity

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Reconciliation Act of 1996, mandates the transition of 50 percent of adult welfare recipients into the workforce by 2002. It also abolishes the AFDC program, replacing it with the transitional block grant program Temporary Assistance for Needy Families (TANF). As its name suggests, TANF is designed to provide time-limited assistance. Temporary Assistance to Needy Families, which presumes that successful transition to employment and economic self-sufficiency is possible, mandates a lifetime limit of 5 years of federal or federally supported welfare payments. This new law places personal responsibility on individuals to gain and maintain employment. The outcomes of this shift in policy are just beginning to unfold.

Many former welfare recipients have gained employment. Studies funded through the U.S. Department of Health and Human Services, Office of the Assistant Secretary for Planning and Evaluation (OASPE), demonstrate that welfare caseloads have declined 59 percent over the past several years, dropping from 14.2 million recipients in 1994 to 5.8 million in June 2000 (2001). The same studies demonstrate that about 60 percent of the single parent welfare leavers were employed during any quarter and that employment averaged about 40 hours per week when including work experience and community service (Office of the Assistant Secretary for Planning and Evaluation 2001).

In evaluating the new welfare reform policies, it is important to identify and target special subpopulations that may face specific employment barriers, such as individuals with substance abuse problems (Montoya and Atkinson 2002). Substance abusing women on TANF exhibit more barriers to employment than women in the general welfare population (Gutman et al., in press), and employment rates are lower for substance abusers than for nonabusers (Vaillant 1988; Platt 1995). In addition, welfare recipients with substance abuse problems are less likely to maintain full-time employment over time than other recipients of welfare (Montoya, Atkinson, and Struse 2001). Although the relationship between substance abuse or substance dependence and welfare dependence is difficult to characterize fully, nonworking welfare recipients are more likely than working welfare recipients to be substance dependent (Pollack et al. 2002). Lost productivity is greater for substance abuse than for any other chronic behavioral health problem (National Institutes of Health 1997) and includes lower earnings and work not performed due to illness, incarceration, or premature death. The potential severity of the problem is illustrated by a single-city study that finds a complete lack of employment within a group of women who both used "hard drugs" and received TANF benefits (Montoya et al. 2001). It is important to recognize, however, that while welfare recipients are more likely than the general population to have substance abuse problems, these problems are not found in the majority of women who receive welfare (Pollack et al. 2002). A study using national survey data

shows that approximately 19 percent of welfare recipients reported illicit drug use during the past 12 months, compared with 7 percent of working-age women who were not receiving welfare cash assistance (Jayakody, Danziger, and Pollack 2000).

Substance abuse treatment is generally considered to result in increased employment. Studies conducted prior to TANF (with AFDC recipients) demonstrate positive work-related outcomes for welfare recipients who take part in substance abuse treatment: improvements are noted in employment and wages earned when employed (Wickizer et al. 2000). Other studies report increases in employment and decreases in welfare receipt after participation in substance abuse treatment (Kirby and Anderson 2000).

Within this context, the current study seeks to describe the employment and welfare outcomes of women in Florida who received both welfare and substance abuse treatment from 1994 to 1999. While these analyses are not causal, they examine the associations among treatment status, welfare, and employment outcomes for these women.

## Materials and Methods

Three statewide administrative databases are linked by Social Security number. The State of Florida Substance Abuse Office of the Department of Children and Families (DCF) provides data on substance abuse treatment episodes through the State Integrated Substance Abuse Reports (SISAR) database. The SISAR provides information on the sociodemographic and treatment characteristics of clients of all licensed substance abuse treatment programs in Florida (571,727 records). The DCF also provides a database of Florida adults receiving cash assistance (762,510 records). This information consists of a monthly history of receipt (yes or no) of cash assistance during the study period. Finally, employment information, based on quarterly employer payrolls throughout Florida, is provided by the Florida Education and Training Placement Information Program (FETPIP; 213,229 records). This employment information is derived from part of the wage report system that is used to manage the state unemployment compensation program.<sup>1</sup>

The study group is drawn from 21,515 unique individuals who were discharged from substance abuse treatment services during the period between October 1, 1994, and September 30, 1999, who were 18 years or older at the time of discharge, who received cash assistance at some time during the study period, and who had valid data for treatment placement and discharge reason. For individuals with multiple discharges during the study period, the latest discharge is selected for study. Cases discharged due to death or incarceration are not included; neither employment nor receipt of welfare would be possible under these circumstances. The study group is further limited to women who received

welfare benefits (in the form of cash assistance) within 3 months prior to admission to treatment. A total of 4,236 clients meet the criteria for study inclusion.

Employment and welfare outcomes during the first 3-, 6-, and 12-month periods after discharge from substance abuse treatment are determined by linking the SISAR study group records to both welfare (DCF) and employment (FETPIP) records. Since the SISAR database reports dates, the welfare database is reported in months, and the employment database reports quarterly data, it is necessary to construct a monthly history of employment and welfare status for each client for the first 12 calendar months after the month of discharge. In the case of employment status, a monthly employment history is constructed from quarterly data by assigning the value of the quarterly employment status in each month of the quarter.

A four-level categorical outcome measure is constructed to denote work and welfare outcomes. The four possible outcomes are working only, working and receiving welfare, receiving welfare only, and neither working nor receiving welfare benefits. Work and welfare outcomes are determined for the periods 3, 6, and 12 months after discharge. The latest observable discharge in the study group is September 30, 1999. As a result, the number of clients whose work and welfare status can be determined varies over the 3-, 6-, and 12-month outcomes. For example, a client must have been discharged on or before September 30, 1998, in order to be included in the 12-month work and welfare status outcome. Cumulative follow-up measures are also considered in order to ascertain changes in proportions as time out of treatment increases. Employment and welfare outcomes are also examined for a random sample of 7,595 welfare recipients who were not enrolled in substance abuse treatment during the study period. Follow-up periods for the nontreatment sample are measured after the first occurrence of receipt of cash assistance during the study period.

Explanatory variables include client characteristics, treatment characteristics, and the year the client was discharged from treatment. Client-level variables include sociodemographic variables: age in years at discharge from treatment, completion of high school or GED, marital status, arrests in the 24 months prior to treatment admission, source of referral to substance abuse treatment (self, provider, court, or social agency), primary substance abuse problem at admission, history of injection drug use, number of substance abuse problems at admission, number of prior admissions to substance abuse treatment, and employment status during month of admission. Treatment variables include treatment completion, length of stay (measured in months), treatment modality (residential, outpatient, special, or detox), and type of treatment services (educational or GED, mental health services, or vocational or job training).

Statistical analyses consist of cross-tabulations and chi-square tests of independence as well as multinomial logistic regressions (Aldrich and Nelson 1984; Agresti 1990; Demaris 1992). Stata Version 6 is used. A multinomial logistic model of work and welfare status measuring 1–6 months postdischarge is fitted by including theoretically relevant predictors (age, education, arrest history, and marital status), as well as predictors that are statistically significantly associated with the outcome measure in bivariate analyses. The multinomial model reflects only the 1–6 month postdischarge period because the relationships observed are similar for the other time periods. All interactions between treatment variables (completion, length of stay, and modality) and year of discharge are submitted to a likelihood ratio test and are found not to be statistically significant. In addition, collinearity among the three treatment variables is minimal. In the multinomial logistic model, one level of the outcome variable is designated as the reference category, then the probability of membership in each category is compared to the probability of membership in the reference category. For a four-level outcome, three equations are required to describe the relationship between the outcome variable and the independent variables. In this case, however, we present all six possible contrasts (derived from a single model) among the four levels of the outcome variable in order to facilitate interpretation of the model.

## Results

A description of the characteristics of the women in substance abuse treatment is presented in table 1. The mean age at discharge is 32 years. The mean educational level is eleventh grade, and only about half (53 percent) of the women have completed high school. Only 14 percent have no dependents; almost three quarters (71 percent) have between one and three dependents. The most common treatment referral source is court referral (38 percent), followed by social agencies and self-referrals (approximately one quarter each). About half of the women (52 percent) were arrested at least once in the 24 months prior to treatment entry. Over the study period, the number who were arrested one or more times in the last 2 years decreases from 56.5 percent in 1994–95 to 45.8 percent in 1998–99 (data not shown). Crack cocaine and cocaine are the most common primary substances of abuse (49 percent) followed by alcohol (26 percent). Only 7 percent of the women have a history of injection drug use. Over half (57 percent) have more than one substance abuse problem. The proportion listing cocaine or crack use as their primary problem decreases from 57.8 percent in 1994–95 to 49.4 percent in 1998–99. Other reported primary problems at admission increase from 16.7 percent in 1994–95 to 27.4 percent in 1998–99 (data not shown).

Table 1

## SELECTED CHARACTERISTICS OF SISAR STUDY POPULATION

	N	Percent	
Married	4,052	12.2	
High school graduate	4,158	53.1	
Referral source (collapsed)	3,932		
Self		23.6	
Provider		10.4	
Court		38.2	
Social agency		27.8	
Arrested in past 24 months	3,977	51.6	
Primary problem at admission	4,061		
Alcohol		26.0	
Cocaine or crack		49.3	
Other		24.7	
History of IV drug use	3,730	7.2	
More than 1 problem	3,983	57.5	
Placement type (collapsed)	4,236		
Residential		19.7	
Detoxification		6.0	
Outpatient		62.7	
Special		11.5	
Prior admission	3,926	54.0	
Completed treatment	4,236	48.7	
Educational services or GED	4,236	14.6	
Vocational or job training	4,236	16.6	
Received mental health services	3,338	19.7	
Working during month of admission	4,236	24.3	
	N	Mean	Standard Error
Age at discharge (years)	4,219	32.3	.1
Education level	4,158	11.2	.03
Length of stay (months)	4,236	3.2	.06
Number of prior admissions	3,926	1	.02

NOTE.—SISAR = State Integrated Substance Abuse Reports; IV drug use here refers to both intravenous and intramuscular injection; GED refers to a general education degree, equivalent to a high school diploma.

Most women in the study (63 percent) receive treatment services in an outpatient setting. Almost half complete treatment (49 percent). The average length of stay in substance abuse treatment is approximately 3 months. Just over half (54 percent) have at least one prior admission to substance abuse treatment. Few clients receive educational or vocational services while in treatment (less than 17 percent), and one-fifth (20 percent) receive mental health services. Only about one-fourth of clients (24 percent) work during the month of admission.

There are some notable changes by year of discharge from treatment (data not shown). Median length of stay increases significantly over time and ranges from a low of 1.9 months in 1994–95 to a high of 3.9 months in 1997–98, with a slight subsequent drop in 1998–99 to 3.6 months.

Treatment completion increases significantly and steadily from 38 percent in 1994–95 to 58.3 percent in 1998–99 with sharp rises in 1998–99. Additionally, the percent working during month of admission increases steadily from a low of 14.9 percent in 1994–95 to a high of 35.8 percent in 1998–99. The percent of clients receiving vocational or job training services and educational services increases significantly, from 13.9 percent to 24.8 percent and from 14.9 percent to 21.8 percent, respectively, with sharp rises in 1998–99. Additionally, the percent working during month of admission increases steadily each year from a low of 14.9 percent in 1994–95 to a high of 35.8 percent in 1998–99.

Figures 1–3 show the groups' employment and welfare outcomes for three time frames between 1994 and 1999. These figures present cumulative time periods representing the months since clients were discharged from substance abuse treatment (1–3, 1–6, 1–12 months) and demonstrate that the proportion of substance abuse treatment participants moving from welfare to work ("work only") substantially increases over time. For example, at the 1–3 month postdischarge period, 9 percent of participants were working and off welfare in 1994–95, compared to 34 percent in 1998–99. This pattern also holds for the 6- and 12-month follow-up periods. Similarly, the proportion of women receiving welfare only and not working ("welfare only") decreases over time. For example, at 1–6 months postdischarge, 52 percent received welfare only in 1994–95, compared to 25 percent in 1998–99. This trend holds true for the 3- and 12-month follow-up periods. The changes in employment and welfare status over time are statistically significant (Likelihood ratio  $\chi^2(df = 12) = 299.84, p \leq 0.0001$ ). Of course, this trend occurred during the welfare reform period.

Two additional outcomes are examined: receiving both welfare benefits and working ("welfare and working"), as well as neither receiving welfare benefits nor working ("neither"). The "neither" group represents close to one-fourth of the study group at 1–3 months postdischarge across all time periods. At 1–6 months postdischarge, this group decreases to approximately one-fifth of the study group, and it decreases in size even further (closer to one-tenth) at the 12-month follow-up period. Conversely, the proportion of women who are both receiving welfare and working increases over the 12-month period.

We also examine matching outcomes for a random sample of welfare recipients who do not participate in substance abuse treatment during the study time frame ( $N = 7,595$ ). As shown in table 2, which presents 1–6-month postdischarge outcomes, the substance abuse treatment participants have consistently higher rates of "work only" than the comparison group. Notably, 5 years of steady increases culminate in a "work only" rate of 33.7 percent for the substance abuse treatment group, compared to 13 percent of the comparison welfare group, but this "work only" rate represents an overall increase of over 300 percent for both groups. How-

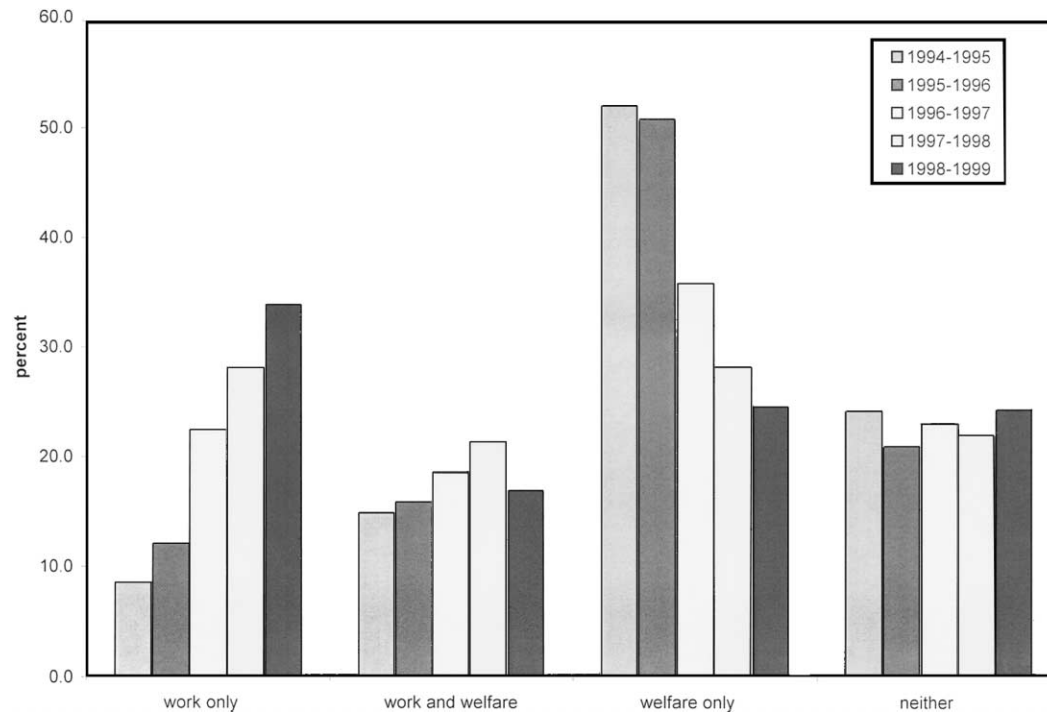


FIG. 1—Work and welfare status 1-3 months postdischarge

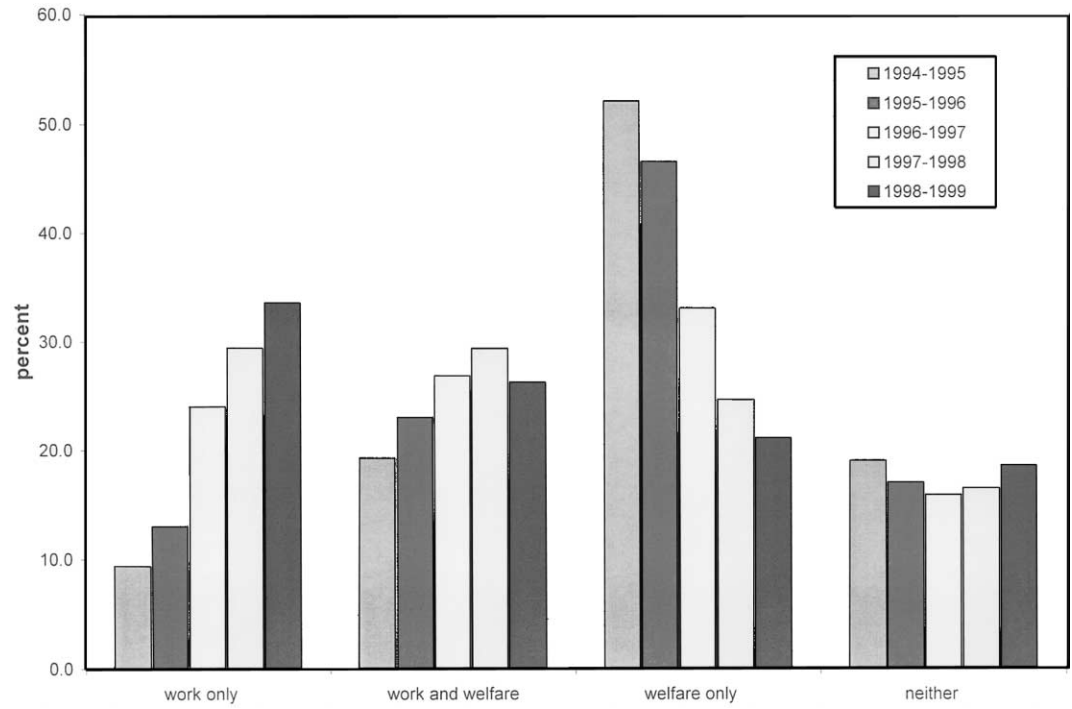


FIG. 2—Work and welfare status 1-6 months postdischarge

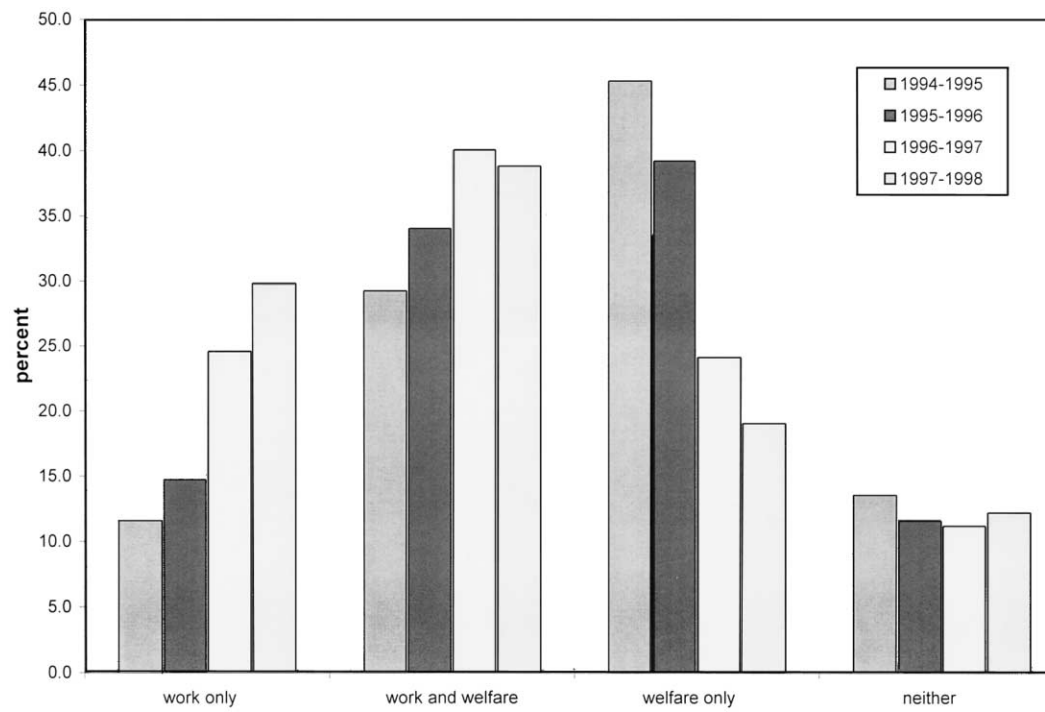


FIG. 3—Work and welfare status 1-12 months postdischarge

Table 2

WORK AND WELFARE COMPARISON 1–6 MONTHS POSTDISCHARGE (%)

	SISAR Study Group	Welfare Comparison Group
1994–95	( <i>N</i> = 403)	( <i>N</i> = 4,300)
Work only	9.4	3.6
Work and welfare	19.4	30.1
Welfare only	52.1	62.4
Neither	19.1	3.9
1995–96	( <i>N</i> = 1,011)	( <i>N</i> = 1,142)
Work only	13.2	6.6
Work and welfare	23.1	37.1
Welfare only	46.7	51.1
Neither	17.1	5.3
1996–97	( <i>N</i> = 911)	( <i>N</i> = 821)
Work only	24.0	8.7
Work and welfare	26.9	44.3
Welfare only	33.2	41.7
Neither	15.9	5.4
1997–98	( <i>N</i> = 947)	( <i>N</i> = 756)
Work only	29.5	15.9
Work and welfare	29.4	44.3
Welfare only	24.6	29.6
Neither	16.6	10.2
1998–99	( <i>N</i> = 439)	( <i>N</i> = 324)
Work only	33.7	13.0
Work and welfare	26.4	46.0
Welfare only	21.2	32.7
Neither	18.7	8.3

NOTE.—SISAR = State Integrated Substance Abuse Reports.

ever, substance abuse treatment participants are also more likely than the comparison groups to neither receive welfare nor to work.

Table 3 presents the results of the multinomial logistic regression, illustrating how the variables in the model are related to each work or welfare outcome. As described in the methods section, while only one logistic model is fitted, odds ratios are presented for each of the six possible unique contrasts that can be made among the four categories of the outcome variable.

Treatment-related characteristics associated with work and welfare status include treatment completion and treatment intensity as indicated by both length of stay and type of placement (residential placement is assumed to be more intense). Clients who complete treatment are more likely to work (with or without welfare) during the first 6 months after discharge, even after controlling for age, education, marital status, arrest history, and year of discharge. Coefficient sizes are similar across all comparisons of level of work status (odds ratios range from 1.3 to 1.7). Treatment completion, however, does not differentiate between levels of work (work only compared to work and welfare) (Odds Ratio = 1.09, 95 percent Confidence Interval 0.89–1.35).

**Table 3**

MULTINOMIAL LOGISTIC REGRESSION OF EMPLOYMENT AND WELFARE STATUS 1–6 MONTHS AFTER DISCHARGE  
(Odds Ratios and 95% Confidence Intervals)

	Work Only vs. Work and Welfare		Work Only vs. Welfare Only		Work and Wel- fare vs. Welfare Only		Work Only vs. Neither		Work and Wel- fare vs. Neither		Welfare Only vs. Neither	
Completed treatment	1.09	(.89, 1.35)	1.42	(1.16, 1.73)	1.30	(1.08, 1.57)	1.69	(1.34, 2.13)	1.55	(1.23, 1.94)	1.19	(.96, 1.47)
Length of stay (months)	1.07	(1.04, 1.11)	1.05	(1.02, 1.07)	.97	(.94, 1.01)	1.00	(.97, 1.03)	.93	(.90, .96)	.95	(.92, .98)
Residential placement	1.11	(.87, 1.42)	1.54	(1.21, 1.97)	1.39	(1.10, 1.75)	.90	(.69, 1.18)	.81	(.63, 1.05)	.59	(.46, .75)
Arrested in past 24 months	1.07	(.87, 1.30)	1.01	(.83, 1.22)	.94	(.79, 1.13)	.74	(.59, .93)	.70	(.56, .87)	.74	(.60, .91)
Age at discharge (years)	1.02	(1.00, 1.04)	.98	(.96, .99)	.96	(.94, .97)	.98	(.96, .99)	.96	(.94, .98)	1.00	(.98, 1.02)
High school graduate	1.15	(.94, 1.42)	1.65	(1.36, 2.01)	1.44	(1.19, 1.73)	1.50	(1.19, 1.89)	1.30	(1.05, 1.63)	.91	(.74, 1.12)
Married	1.04	(.77, 1.40)	1.48	(1.10, 2.00)	1.43	(1.07, 1.90)	.85	(.62, 1.17)	.82	(.60, 1.12)	.58	(.43, .78)
Discharge year:												
1995–96	1.04	(.64, 1.68)	1.58	(1.03, 2.42)	1.52	(1.09, 2.13)	1.60	(.99, 2.59)	1.54	(1.03, 2.31)	1.01	(.72, 1.42)
1996–97	1.58	(.99, 2.51)	4.15	(2.73, 6.32)	2.64	(1.87, 3.72)	3.07	(1.91, 4.93)	1.95	(1.30, 2.94)	.74	(.52, 1.05)
1997–98	1.72	(1.08, 2.73)	6.51	(4.28, 9.90)	3.79	(2.68, 5.35)	3.76	(2.35, 6.02)	2.19	(1.46, 3.29)	.58	(.41, .83)
1998–99	2.05	(1.24, 3.38)	8.09	(5.06, 12.93)	3.96	(2.62, 5.98)	3.52	(2.0, 5.89)	1.72	(1.08, 2.74)	.44	(.28, .67)

NOTE.— $N = 3,366$ ;  $\text{pseudo}R^2 = .0447$ .

In contrast, length of stay in treatment is significant in discriminating among receipt of welfare (either alone or in addition to working) and “work only” or “neither.” Women who stay in treatment longer are more likely to “work only” than to receive welfare (either alone or in addition to work) and are correspondingly less likely to receive welfare (either alone or in addition to work) than to neither work nor receive welfare.

Women who are placed in residential treatment programs are more likely to work (either alone or in addition to receiving welfare) than to receive welfare only. Women in residential programs are also less likely to receive welfare than to neither work nor receive welfare. Less than one-fifth of the women in treatment receive vocational services, and they are also less likely than other women to be employed at follow-up.

Client characteristics associated with work and welfare outcomes include arrest history, age, educational level, and marital status. Clients arrested at least once in the 24 months prior to treatment entry are less likely either to work or to receive welfare during the first 6 months after discharge. Younger clients are more likely to work or work and receive welfare. Older clients are more likely to work than to both work and receive welfare. High school graduates are more likely to work, either without or in addition to receiving welfare. Married women are less likely than unmarried women to receive welfare.

The multinomial model also demonstrates how work and welfare outcome status changes over time, independent of both client and treatment characteristics. The largest change occurs in the likelihood of “working only,” rather than receiving “welfare only”; this likelihood increases steeply over time, relative to the initial time frame of 1994–95. The likelihood of working in addition to receiving welfare, as opposed to only receiving welfare, also increases over time.

## Discussion

Three findings emerge from the present study. First, change over time (in the direction of increased work and less receipt of welfare) is independent of other variables in the model. Second, a sizable number of drug treatment participants are neither working nor receiving welfare benefits in the periods following discharge. A history of arrest is associated with this outcome. Third, both treatment completion and treatment intensity, as measured by length of stay and residential placement, are associated with favorable work outcomes.

The first major finding presents an optimistic scenario, indicative that welfare reform is meeting its stated objectives, even within this presumably challenged subgroup of substance abusers who participate in treatment. The data demonstrate that the proportion of women discharged from substance abuse treatment who move from “welfare” to “work only” increases over 300 percent from 1994 to 1999. These findings parallel

trends among welfare users throughout the United States, from the mid-to late 1990s. Our results also demonstrate that welfare recipients who participate in substance abuse treatment in Florida have more favorable outcomes than a group of randomly selected welfare recipients who do not participate in substance abuse treatment. Specifically, almost one-third of substance abuse treatment participants have successfully made the transition from welfare to "work only" in 1998–99, compared to 15 percent of our random sample of welfare recipients. Although we do not know the demographic and drug or alcohol use characteristics of the random comparison sample, it is possible that a proportion of them may have unmet needs for services, such as substance abuse treatment or mental health counseling. This would explain the outcome differentials.

Optimism must be tempered with caution, since the second finding demonstrates that a sizable number of welfare recipients consistently fail to move from welfare to work. Of particular concern are women who move off the welfare rolls but who are not reflected in state employment data. There are several reasons why individuals may not be reflected in state employment data. They may obtain employment with the military or in another state. They may change marital status, receive monetary support from family and friends, or engage in legitimate work that is not reported, such as hairdressing, baby-sitting, or housekeeping. However, some individuals not reflected in the employment rolls may obtain economic support through income-producing crimes, such as prostitution, drug dealing, and theft, or may simply be bereft of resources. Women with a history of arrest are more likely to be neither working nor receiving welfare benefits. Criminal history may be a barrier to employment, while women with a criminal history may more frequently experience sanctions that result in the loss of benefits.

Another possibility, suggested by examination of cumulative follow-up periods, is that women who are neither receiving welfare nor working at a specific point in time may later return to the welfare rolls. Return to welfare after initially leaving the rolls is evident in studies in several states (U.S. Government Accounting Office 1999). However, some women who continue to have substance abuse problems may choose not to apply for TANF benefits, due to resistance to reentering treatment, fear of losing child custody, or some other reason (Merrill et al. 2001).

The third finding, based on multivariate analyses, demonstrates that treatment intensity (indicated by length of stay and residential treatment modality) and completion of treatment are significantly associated with increased employment and decreased receipt of cash benefits. This finding is consistent with previous studies that demonstrate the positive effects of substance abuse treatment on subsequent employment and increased earnings (Sells 1974; Hubbard et al. 1989; Gerstein et al. 1994; Lanehart et al. 1996; Ohio Department of Alcohol and Drug Addiction Services 1996; Metsch et al. 1999; Delva et al. 2000; Wickizer et al. 2000).

For policy makers, it should be noted that treatment intensity (e.g., participation in residential treatment and longer lengths of stay) is associated with higher levels of movement off welfare and of employment for women. Further research is needed to determine whether these associations reflect the benefits of treatment or are related to selection bias.

Various study limitations associated with the use of administrative databases must be considered. First, analysis is limited to data already being collected for administrative purposes. In the present study, outcome data are unavailable regarding drug use subsequent to treatment discharge and the availability of social support services (e.g., child care). Also unmeasurable are the roles of sanctions, barriers, and facilitators that may be important in the transition to economic self-sufficiency. A further limitation of working with administrative databases is the inconsistency in measurement; in this case, each database records time in different units: days, months, and yearly quarters. By creating a calendar month level of measurement for purposes of analysis, a positive outcome may have been favored if actual employment did not span the total duration of the quarter.

Additionally, the validity of the results presented is dependent on the quality and inclusiveness of the administrative databases used in the study. For example, cases in all databases with invalid Social Security numbers are omitted from the analyses, although this number was small. Only 195 of 311,262 records in a SISAR database of new admissions have invalid Social Security numbers, as do 1.6 percent of 762,510 welfare records, and 0.25 percent of 213,229 FETPIP records. In terms of inclusiveness, it is important to recognize that the SISAR system may not capture all members of the population; personal and treatment characteristics may not be recorded, and outcome information may not be available for each member. For example, FETPIP does not capture employment that is outside of the state unemployment compensation system, such as participation in the armed forces or employment outside of the state of Florida. In addition, the current analyses incorporate individuals who are potentially not in the labor force at the time of discharge, including students and individuals with disabilities. The available data do not provide a reliable means for their exclusion.

It is also important to recognize that results from the study group in the present analysis cannot be generalized to all welfare recipients with substance abuse problems; we do not know what proportion of all welfare recipients with substance abuse problems in Florida are identified and then referred for treatment. It is possible that our study group is disproportionately composed of women who are more motivated to enter treatment and to leave welfare for work. Similarly, without a comparison group of welfare recipients with substance abuse problems who were not in treatment, we cannot address the efficacy of substance abuse treatment in moving substance abusers from welfare to work. While our

comparison group of a random sample of welfare recipients is useful in examining their welfare and employment status in general, specific inferences cannot be made because we do not have information about their drug use and other demographic characteristics.

Despite the limitations inherent in analyses of administrative databases, the present findings provide employment and welfare outcomes for a group of definable substance users who entered drug treatment within a time frame that included sweeping welfare reform policy changes. In addition, our study demonstrates the use of statewide administrative databases, which provide almost population-level data to track social outcomes. As long-term follow-up studies with clinical populations are very expensive and time consuming, the ability to track individuals through administrative databases represents an attractive and efficient methodology for providing timely information to policy makers and public health officials. Despite the inherent limitations discussed above, this approach takes advantage of data already being collected and avoids the potential criticism associated with self-report data that is typical of many long-term follow-up studies.

Further research is needed to track both the outcomes associated with recently enacted welfare reform policies on the general TANF population and the impact of these policies on special populations (Schmidt and McCarty 2000; Nakashian 2002). Particularly for substance-using women who have children, outcomes should be expanded to include effects on children and families. Also of interest are the possible interactions between child custody status (mothers who lose child custody would likely lose welfare eligibility) and welfare sanction status (perhaps due to drug use or drug treatment compliance problems), as those interactions relate to posttreatment welfare use and employment. Further studies are needed to fully evaluate the success of these new policies by documenting the types of employment obtained and specific wages earned. These studies should also address the potential hazards associated with low-wage, low-income employment. The relative impact of specific services, treatment modalities, and their components must also be monitored and evaluated. In addition, long-term studies are needed to determine the sustainability and consistency of emerging trends. These will be particularly salient as more employable welfare recipients move off the TANF rolls, leaving a greater proportion of welfare recipients who may face significant barriers to employment.

## References

- Agresti, Alan. 1990. "Multinomial Response Models." Pp. 313–17 in *Categorical Data Analysis*, edited by Alan Agresti. New York: John Wiley & Sons.
- Aldrich, John Herbert, and Forest D. Nelson. 1984. *Linear Probability, Logit, and Probit Models*. Beverly Hills, Calif.: Sage.
- Delva, Jorge, Yehuda D. Neumark, Carolyn D. M. Furr, and James C. Anthony. 2000. "Drug

- Use among Welfare Recipients in the United States." *American Journal of Drug and Alcohol Abuse* 26 (2): 335-42.
- Demaris, Alfred. 1992. *Logit Modeling: Practical Applications*. Newbury Park, Calif.: Sage.
- Gerstein, Dean R., Robert A. Johnson, Henrick J. Harwood, Douglas Fountain, Natalie Suter, and Kay Malloy. 1994. *Evaluating Recovery Services: The California Drug and Alcohol Treatment Assessment (CALDATA)*. Contract no. 92-00110. Sacramento, Calif.: State Health and Welfare Agency, Department of Alcohol and Drug Programs.
- Gutman, Marjorie A., James McKay, Robert D. Ketterlinus, and A. T. McLellan. In press. "Potential Barriers to Work for Substance Abusing Women on Welfare: Findings from the 'CASAWORKS for Families' Pilot Demonstration." *Evaluation Review*.
- Hubbard, Robert L., M. E. Marsden, J. Valley Rachal, Henrick J. Harwood, E. Cavanaugh, and H. Ginzburg. 1989. *Drug Abuse Treatment: A National Study of Effectiveness*. Chapel Hill: University of North Carolina Press.
- Jayakody, Rukmalie, Sheldon Danziger, and Harold Pollack. 2000. "Welfare Reform, Substance Use, and Mental Health." *Journal of Health Politics, Policy and Law* 25 (4): 623-51.
- Kirby, Gretchen, and Jacquelyn Anderson. 2000. "Addressing Substance Abuse Problems among TANF Recipients: A Guide for Program Administrators." Final Report. Mathematica Policy Research, Inc., Washington, D.C.
- Lanehart, Rheta E., Hewitt B. Clark, J. Paul Rollings, Diane Kratochvil Haradon, and Leashia Scrivner. 1996. "The Impact of Intensive Case-Managed Intervention on Substance-Using Pregnant and Postpartum Women." *Journal of Substance Abuse* 8 (4): 487-95.
- Merrill, Jeffrey C., Sara Ring-Kurz, Delia Olufokunbi, Sherril Aversa, and Jennifer Sherker. 2001. "Women on Welfare: A Study of the Florida WAGES Program." *Journal of Health and Social Policy* 14 (2): 25-43.
- Metsch, Lisa R., Clyde B. McCoy, Michael Miller, Heather McAnany, and Margaret Pereyra. 1999. "Moving Substance Abusing Women from Welfare to Work." *Journal of Public Health Policy* 20 (1): 36-55.
- Montoya, Isaac D., and John S. Atkinson. 2002. "A Synthesis of Welfare Reform Policy and Its Impact on Substance Users." *American Journal of Drug and Alcohol Abuse* 28 (1): 133-46.
- Montoya, Isaac D., John S. Atkinson, and Heidi M. Struse. 2001. "A Comparison of Psychosocial Barriers among Welfare Recipients: Implications for Drug Treatment." *Substance Use and Misuse* 36 (6-7): 771-88.
- Nakashian, Mary. 2002. "Substance Abuse and Welfare Reform." *Journal of the American Medical Womens Association* 57 (1): 36-37, 40.
- National Institutes of Health. 1997. "Disease-Specific Estimates of Direct and Indirect Costs of Illness: An NIH Update." Department of Health and Human Services, Washington, D.C.
- Office of the Assistant Secretary for Planning and Evaluation. 2001. "Status Report on Research on the Outcomes of Welfare Reform. Appendix B: Findings from ASPE-Funded Leavers Studies." Department of Health and Human Services, Washington, D.C.
- Ohio Department of Alcohol and Drug Addiction Services. 1996. "Cost-Effectiveness Study of Alcohol and Other Drug Treatment Programs." Ohio Department of Alcohol and Drug Addiction Services, Columbus.
- Platt, Jerome J. 1995. "Vocational Rehabilitation of Drug Abusers." *Psychology Bulletin* 117 (3): 416-33.
- Pollack, Harold A., Sheldon Danziger, Kristin S. Seefeldt, and Rukmalie Jayakody. 2002. "Substance Use among Welfare Recipients: Trends and Policy Responses." *Social Service Review* 76 (2): 256-74.
- Schmidt, Laura A., and Dennis McCarty. 2000. "Welfare Reform and the Changing Landscape of Substance Abuse Services for Low-Income Women." *Alcoholism: Clinical and Experimental Research* 24 (8): 1298-1311.
- Sells, S. B. 1974. *Studies of the Effectiveness of Treatments for Drug Abuse*, vols. 1 and 2. Cambridge, Mass.: Ballinger.
- U.S. General Accounting Office. 1999. "Welfare Reform: Information on Former Recipients' Status." Report to the Chairman, Committee on Finance, U.S. Senate, and the Chairman, Subcommittee on Human Resources, Committee on Ways and Means,

- House of Representatives, GAO/HEHS-99-48, General Accounting Office, Washington, D.C.
- Vaillant, George E. 1988. "What Can Long-Term Follow-Up Teach Us about Relapse and Prevention of Relapse in Addiction?" *British Journal of the Addictions* 83 (10): 1147-57.
- Wickizer, Thomas M., Kevin Campbell, Antoinette Krupski, and Kenneth Stark. 2000. "Employment Outcomes among AFDC Recipients Treated for Substance Abuse in Washington State." *Milbank Quarterly* 78 (4): 585-608.

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1. Memoranda of agreement were signed by the researchers and cooperating agencies to ensure the confidentiality of client records. When the databases were linked and analytical data files prepared, all identifiers were removed. All statistical analyses are conducted on a dedicated computer accessible only to project staff.