

The Impact of Welfare Reform on Health Insurance and Health Outcomes ¹

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Abstract

Evaluating the impact of recent state and federal welfare reforms is the subject of a large and growing literature. The research has established that recent welfare reforms (through state waivers and TANF implementation) have led to reductions in welfare caseloads and increases in the employment of low-skill women. There is increasing interest in moving beyond caseloads and employment to examine the impact of reform on child and family well-being. This paper addresses an important dimension of well-being by estimating the impact of reform on health insurance and health outcomes. Our primary data source is the Behavioral Risk Factor Surveillance System (BRFSS), a nationally-representative monthly household survey conducted by the Centers for Disease Control and Prevention (CDC). The BRFSS provides extensive information on health care utilization, health status, risky behavior, and health insurance and covers the adult population (age 18 and over). We also use data from the March Current Population Survey to measure private and public health insurance and self-rated health status for samples of children and women. We estimate pooled cross-sectional models and the effects of welfare reform are identified through variation in the timing and incidence of reforms across states. Our results show that welfare reform is associated with a decrease in the likelihood of having health insurance and not working and an increase in the likelihood of having insurance and working. Reform is also associated with decreases in health care utilization; evidence about reform and health status is mixed. The results show that Hispanics have been particularly hard hit by welfare reform, with declining health insurance coverage and health care utilization, and increases in having needed care but having found it unaffordable.

1 Introduction

Evaluating the impact of state and federal welfare reform is the subject of a large and growing literature. The recent welfare reform period in the United States started with state waivers from the former Aid to Families with Dependent Children (AFDC) program in the early 1990s. This period of active state experimentation culminated in the passage of the 1996 Personal Responsibility and Work Opportunity Act (PRWORA) which eliminated AFDC and replaced it with Temporary Assistance for Needy Families (TANF). This federal reform dramatically changed the economic incentives facing low income individuals with children or considering having children. In particular, these reforms imposed lifetime time limits, strengthened work requirements, and limited the eligible population.

A number of recent studies have shown that state waivers and TANF implementation have played an important role in the dramatic declines in welfare caseloads and increases in the employment of less skilled women.¹ The research shows that other factors are also important including the strong labor market and the expansion in the Earned Income Tax Credit (EITC). Now that this first wave of research has established these important results, there is increasing interest in broadening our evaluation of welfare reform by examining the impacts on family and child well-being. This paper addresses an important and largely unexplored dimension of well-being by examining the impact of welfare reform on health insurance and health outcomes.

There are likely many pathways by which welfare reform can affect health. First, with the decline in welfare participation, many families may have lost Medicaid coverage. In fact, recent studies of welfare leavers have shown that the majority of families also stop receiving food stamps and Medicaid despite maintaining eligibility for these programs.² This loss in public coverage may be offset by increased private coverage either due to increases in mother's employment or coverage from another family member. However, these new workers are likely to be employed in industries/occupations with traditionally low rates of employer-provided health insurance. Therefore, an important outcome that we examine is the impact of reform on overall, private, and public health insurance coverage. Changes in insurance can subsequently impact health care utilization and health outcomes.

¹See the recent review of the literature by Blank (2002).

²See summary of leaver studies in Dion & Pavetti (2000) and Families USA Foundation (1999).

Second, welfare reform may impact the family's economic resources. While the evidence is less clear on this point, research suggests that welfare reform has led to an overall increase in the incomes of low-skill families, but that families at the bottom of the distribution may have been made worse off.³ These changes in a family's economic well-being could then have direct impacts on health care utilization and health status. Third, increases in employment lead to changes in a parent's time endowment which in turn can affect choices about health care utilization, diet, and health. Fourth, welfare reform could lead to increases (or decreases) in stress, which in turn can affect health.

To examine this issue, we present data from several nationally-representative household data sets covering the late 1980s through the late 1990s. Our primary data source is the Behavioral Risk Factor Surveillance System (BRFSS), a monthly household survey conducted by the Centers for Disease Control and Prevention (CDC). The BRFSS is designed to produce uniform, state-representative data on preventive health practices and risky behaviors and covers all civilian, noninstitutionalized persons age 18 and over. We use the BRFSS data for women aged 18–54 covering 1990–2000 and construct a wide range of health and behavioral outcomes including health insurance, preventive health care utilization (e.g., checkups, breast exams, Pap smears, and mammograms), smoking and drinking behavior, self-rated health status, days limited from usual activities, and obesity. The BRFSS data, while not used extensively in the economics literature, has been recently used in studies of drinking (Dee (2001), Ruhm (2000), and Ruhm & Black (2001)); smoking (Evans, Ringel & Stech (1999) and Gruber & Zinman (2001)); and risky behaviors (Dee & Evans (2001)).⁴

We also use data from the March Current Population Survey (CPS) which provides data on health insurance status, and, since 1995, health status as rated by the respondent. Using the CPS, we create a sample of children aged less than 16 and a sample of women aged 18–54 for survey years 1989–2000. Our health insurance measures include any coverage, private coverage, and Medicaid coverage. These measures can be created for children and women. As discussed further in Section 4, however, there were survey changes to the CPS health insurance questions that affect the consistency of the Medicaid data.

³Again, see the recent review by Blank (2002).

⁴We hope to add the National Health Interview Survey to this analysis as it complements the BRFSS well by providing detailed data on health service utilization and health conditions. In addition, the NHIS covers children who we can not examine using the BRFSS data. Using the NHIS requires gaining access to sensitive data for the state identifiers which we have not yet obtained.

We augment the BRFSS and CPS household survey data with welfare reform variables including the presence and timing of state waivers and the timing of state implementation of the PRWORA legislation. We also include state-level controls for Medicaid generosity, labor market conditions, and other measures of welfare program parameters. We estimate pooled cross-sectional models relating the health outcomes to these state-level variables, demographic controls, and state and year fixed effects. Hence, the effects of welfare reform are identified through variation in the timing and incidence of reforms across states. To focus our analysis on groups likely to be heavily impacted, we present results for blacks, Hispanics, and women who are high school dropouts.⁵

Our results show that welfare reform is associated with a decrease in the likelihood of having health insurance and not working and an increase in the likelihood of having insurance and working. Adult women are more likely to experience declines in health insurance following reform compared to children. Quite strikingly, our results show that Hispanics are extremely hard hit by welfare reform—they are more likely to suffer declines in coverage due primarily to large losses of insurance through Medicaid while not working. We also find that among Hispanic women, welfare reform is more likely to be associated with increases in having needed care but having found it unaffordable. For most groups, welfare reform is also associated with decreases in health care utilization. This decline in utilization may come in part through some change in insurance status, but it may also be due to reductions in time availability due to increased employment. The evidence on the impact of welfare reform on health status is more mixed.

The remainder of the paper proceeds as follows. Section 2 describes the changes in welfare programs and their expected effects on health insurance and health outcomes. Section 3 presents the prior literature on welfare reform and health. In section 4 we describe our data, while in section 5 we discuss our empirical model. The results are presented in section 6, and we conclude in section 7.

2 Welfare reform in the 1990s and implications for health

Beginning in the early 1990s, many states were granted waivers to make changes to their AFDC programs. As shown in the top panel of Table 1, about half of the states implemented some sort of

⁵In general, when referring to the data and results, we use the terms black and white as shorthand for black, non-Hispanic and white, non-Hispanic. Hispanics may be of any race.

welfare waiver between 1993 and 1995. On the heels of this state experimentation, PRWORA was enacted in 1996, replacing AFDC with TANF. While the nature of PRWORA and waivers varied considerably across states, in general, the changes led to a reduction in the generosity of welfare, except in some cases when combined with pro-work or pro-marriage policies. The tightening aspects of reform include work requirements, financial sanctions, time limits, family caps, and residency requirements.⁶ The loosening aspects of reform include liberalizing earnings disregards (lowering the tax rate on earned income while on welfare to promote work), increasing asset limits, and expanding eligibility for two-parent families.

During this same period, health insurance for low income families was expanding. Historically, eligibility for Medicaid for the non-elderly and non-disabled was tied one-for-one to receipt of cash public assistance. In particular, the AFDC income eligibility limits adopted by a state would also be used for Medicaid and AFDC conferred automatic or adjunctive eligibility for Medicaid. Thus, a family that received AFDC benefits would also be eligible for health insurance through Medicaid. Conversely, if a family left AFDC, they would also lose Medicaid coverage.⁷ However, in a series of federal legislative acts beginning in 1984, states were required to expand Medicaid coverage for infants, children, and pregnant women beyond the AFDC income limits. States were also required to extend eligibility to some two-parent families that qualified under income limits but were categorically ineligible for AFDC. This legislation, described and reviewed by Gruber (1997), led to a substantial increase in eligibility. For example, Gruber calculates that between 1988 and 1992 the percent of children eligible for Medicaid increased to over 30 percent from 20 percent. States were also required to provide transitional Medicaid coverage for families leaving AFDC due to an increase in earnings. The PRWORA legislation further weakened the link between AFDC and Medicaid by requiring states to cover any family that meets the pre-PRWORA AFDC income, resource and family composition eligibility guidelines (Haskins (2001*a*)). In addition, in August 1997, legislation was passed to create the State Children's Health Insurance Program (CHIP), which extends funds to states to cover children above Medicaid eligibility (up to 200% of poverty). State CHIP programs can operate within existing Medicaid programs or as part of separate, state-run

⁶Family caps mean that there is no increase in welfare benefits when additional children are born on aid. Residency requirements are cases where unmarried teen parents are required to live in the household of a parent or other guardian.

⁷This is not precisely correct. States could and did set up Medically Needy programs that allowed states to provide Medicaid benefits to families above the AFDC income cutoff if they had high medical expenses.

programs.

In the context of these dramatic changes in the social safety net for families in the United States, what are the expected effects of these AFDC reforms on the health of low income families with children? There are many pathways that welfare reform may affect health outcomes. One representation of these pathways is presented in Figure 1.

First, welfare reform reduces welfare caseloads which consequently leads to a decline in Medicaid coverage. The AFDC caseload has declined more than 60 percent since its peak in 1994 (U.S. Department of Health and Human Services (2002)). During this time period, the number of nondisabled adults and children on Medicaid also fell (Ku & Bruen (1999)). Between 1995 and 1997, the number of nondisabled adults on Medicaid fell by 10.6 percent, while the number of children on Medicaid dropped by 3 percent. These declines were much larger if the population is restricted to the cash welfare recipients (e.g., AFDC/TANF) on Medicaid. The noncash Medicaid caseload, on the other hand, experienced increases reflecting the separation of AFDC eligibility from Medicaid eligibility described above. The connection between AFDC and Medicaid participation can also be seen by examining the participation status of families after leaving welfare. Several of these “leaver” studies show that from half to two-thirds of welfare recipients leave Medicaid after leaving welfare (Ellwood & Lewis (1999), Garrett & Holahan (2000), and Tweedie (2001)). There are many hypotheses presented in the literature that explain this falloff in Medicaid participation including: complexity in new rules, lack of knowledge of Medicaid expansions by caseworkers and clients, cross-agency institutional barriers, and actual loss of eligibility (Dion & Pavetti (2000), Ellwood (1999), and Haskins (2001*a*)).

This expected loss in public coverage may be offset by increased private coverage due to increases in mother’s employment or coverage from another family member. However, these low-skill workers are likely to be employed in industries/occupations with traditionally low rates of employer-provided health insurance (e.g., Currie & Yelowitz (2000)). In sum, the first prediction is that welfare reform should be associated with a decrease in Medicaid coverage, an increase in private insurance, and likely a decrease in overall insurance. A decline in insurance can lead to less health service utilization—for example less preventive care and prenatal care (Nathan & Thompson (1999), Lyons (1999))—and can subsequently impact health outcomes.

The impact of welfare reform on insurance status is expected to vary across groups. A priori,

we expect larger effects for women compared to children since children are more likely to be covered by the Medicaid expansions (and later CHIP). We also expect larger effects among Hispanics due to restrictions in PRWORA for access to aid for new immigrants.⁸ Ellwood (1999) concludes that Medicaid takeup rates among immigrants have declined faster than takeup for other groups. We might also expect a larger negative effect for the waiver period since the AFDC/Medicaid decoupling was not complete until PRWORA.

Second, welfare reform may impact the family's economic resources. While the evidence is less clear on this topic, research suggests that welfare reform has led to an overall increase in the incomes of low-skill families (see the review by Blank (2002) and studies by Schoeni & Blank (2000), Grogger (forthcoming), and Moffitt (1999)). More descriptive work, however, shows that the most disadvantaged families have suffered decreases in income during this period (e.g., Haskins (2001*b*), Primus, Rawlings, Larin & Porter (1999), and Zedlewski, Giannarelli, Morton & Wheaton (2002)). These changes in a family's economic well-being could then have direct impacts on health care utilization and health status. Third, increases in employment lead to changes in a parent's time endowment which in turn can affect choices about health care utilization, diet, and health. Fourth, welfare reform could lead to increases (or decreases) in stress, which in turn can affect health. Lastly, in Bitler, Gelbach & Hoynes (2002), we show that welfare reform leads to changes in family structure and living arrangements. For example, reform is associated with a significant increase in the fraction of black children living with neither parent (grandparents, other relatives, or foster care) and a significant increase in divorces for black women. These types of changes could lead to changes in insurance availability, health service utilization, behavior, and health outcomes.

3 Literature Review

The existing research on the impacts of welfare reform on health insurance and health outcomes comes from three sources: randomized experimental analyses of waivers for state AFDC programs in the early 1990s, Medicaid caseload analyses, and studies of welfare leavers. This evidence, while providing a good starting point, tends to be very limited and not necessarily representative of the effects of later PRWORA welfare policies.

⁸Immigrants legally admitted to the U.S. prior to PRWORA continue to be eligible for full Medicaid coverage, but immigrants entering after PRWORA are not eligible until five years after entry.

The first source is experimental analyses of changes to state AFDC programs. Most of these studies examine changes that states implemented through the waiver process in the early 1990s. The results in these studies compare outcomes for families randomized into the old AFDC program to families randomized into a modified version of the AFDC program. While the evaluation of these programs is focused on changes in earnings and welfare participation, there is a little evidence on health insurance, health care utilization, and health status. For example, in a recently released analysis of Iowa's welfare program, Fraker, Ross, Stapulonis, Olsen, Kovac, Dion & Rangarajan (2002) show that the changes to the state program led to increases in health insurance for children, worsening of child health, and increases in checkups. However none of these effects were statistically significant. Morris, Huston, Duncan, Crosby & Bos (2001) review several other state experiments and find that welfare reforms with generous earnings supplements lead to improvements in children's health status. However, the more typical case of mandatory work requirements is associated with declines in children's health.

There are several limitations to this experimental evidence. First, there is scant information on health. Second, it is unlikely that these studies are representative of the welfare reforms put in place following PRWORA. The studies examine a select group of state programs that were established during the waiver period. These state programs tend to be the more generous reforms.

The second source is leaver studies—national- or state-level studies that examine the characteristics of families leaving welfare. These studies provide some evidence on health insurance status for a sample of families who left welfare in the mid-1990s. The studies uniformly show that welfare leavers experience a decline in insurance. While private insurance increases, public health insurance (e.g., Medicaid) declines more, leading to an increase in the percent uninsured.⁹ One state leaver study (Danziger et al. (2000)) found that working leavers experienced less hardship—such as going without medical care for oneself or a child—compared to nonworking leavers. An often-cited national leaver study (Loprest (1999)) compares leavers to working-poor nonrecipients and finds higher rates of insurance among previous welfare recipients. This is due to higher rates of participation in Medicaid. Working prior welfare recipients, on the other hand, are less likely to have health insurance than are working nonrecipients.

⁹Leaver studies that examine health insurance are reviewed in Greenberg (1998) and include Ellwood & Lewis (1999), Danziger, Corcoran, Danziger & Heflin (2000), Garrett & Holahan (2000), and Tweedie (2001).

These leaver studies provide an excellent snapshot of the experiences of those families that have left welfare. However, as discussed recently in Blank (2002), the leaver studies cannot tell us about how welfare reform affects families for several reasons. First, leavers are a selected sample. The typical leaver study examines families leaving welfare in the mid-1990s after welfare caseloads have already fallen by 20 to 30 percent. Further leavers themselves are a select group of the already-selected caseload. Second, leaver studies are limited because they cannot examine the impacts on nonentrants—those families that would have gone on aid prior to welfare reform but did not. By all accounts this is a very important aspect of the effects of welfare reform. Third,, one cannot tell why families left welfare and who would have left regardless of reform. Fourth,, examining a single cohort of leavers makes it impossible to separately identify impacts of leaving welfare from other events occurring at the same time such as the strengthening labor market and other policy changes (e.g., expansion of the EITC).

The last source of information on impacts of welfare reform on health is caseload analyses. Following the literature on welfare reform and AFDC/TANF caseloads, Ku & Garrett (2000) examine the impact of welfare reform on Medicaid caseloads. In particular, they pool state level administrative data on Medicaid caseloads from the pre-PRWORA period and examine the impact of welfare waivers on Medicaid caseloads for adults and children. The results show that AFDC waivers lead to a (statistically insignificant) decline in the Medicaid caseload. They also look at specific aspects of AFDC waivers and find that state adoption of less restrictive waivers (higher exemption rates from job programs, expansions for two parent families, and more generous earnings disregards) is associated with increases in Medicaid caseloads.

4 Data

We use two large cross-sectional data sets to examine the effects of welfare reform on health insurance, health care utilization, and health outcomes. The first data set is the March Current Population Survey (CPS) and the second is the Behavioral Risk Factor Surveillance System. This section discusses the two data sets and the outcomes of interest.

4.1 CPS data

Our first source of data about health insurance and general health is the March Current Population Surveys (CPS) for 1989–2000. The March CPS is an annual demographic file of between 50,000 and 62,000 households and includes information about the insurance and general health of individuals. The CPS provides information on health status at the time of the survey as well as information about health insurance (and the sources of insurance) and labor market and income information covering the preceding calendar year. We choose to begin the sample in 1989 for three reasons. First, there was essentially no activity in welfare waivers until the early 1990s, so adding earlier years would do little to identify effects of reform. Second, by starting in 1989, we are able to use data during a complete business cycle, from the peak in the late 1980s, through the early 1990s recession, and then through the long expansion of the 1990s. Third, there was a major revision in the health insurance questions in 1988 and large changes in the rest of the survey in 1989 making 1989 a natural seam year.

We use two main CPS samples. The first is a sample of all children, whom we define as those aged younger than 16.¹⁰ Our second sample includes women aged 18–54.¹¹ Because of CPS design, a given CPS household is surveyed in two consecutive CPS March samples. However, if a household's members move, they will appear only once. The second year the household is surveyed, the Census Bureau interviewers attempt to interview the current residents of the housing unit. To minimize any biases arising from the possibility of nonrandom movers, for each sample we select only those respondents whose households are in the first four months-in-sample.¹² Including data from the years 1989–2000, our samples contain 209,385 children and 228,476 women.

The CPS has asked about health insurance and its sources since 1980. Thus, measures of the share uninsured from the CPS are a residual—namely persons who do not report having had any kind of insurance in the last year. Thus, whenever new questions are added about a type of insurance, the share uninsured could appear to go down without any actual change in uninsurance.

¹⁰We use this restrictive definition of children in order to avoid including a large number of potential teen parents as children, since teen parenthood is potentially endogenous to welfare reform.

¹¹We restrict our women's sample in order to make our results more comparable to those from the BRFSS, which only surveys persons 18 and older. The next version of this paper will include data from the Youth Risk Behavior Surveillance System, which covers children in 9th–12th grade, and will thus cover the age group omitted here.

¹²This approach also allows us to avoid covariance estimation problems arising from dependent unobservables for repeatedly-observed households, an issue often left unaddressed in studies using the March CPS.

There have been a number of changes from 1989–2000 in both the CPS questions about health insurance and the order in which these questions were asked; we discuss only those relevant for our analysis. The CPS asks about health insurance from various sources for the previous calendar year. However, a number of studies have concluded that people respond to this question as if they were describing their current insurance status (e.g., Swartz (1986) and Bennefield (1996)). Since 1988, all persons aged 15 or older have been asked about employment-based insurance; this change picked up persons covered by COBRA who had previously been missed.

The health insurance questions were altered significantly in the March 1995 CPS.¹³ The relevant changes for this analysis were as follows. The wording of some questions was altered as was the order. A number of follow-up questions were added to capture people covered by private insurance including questions about whether the private plan covered anyone outside the household as well as whether there were any individually purchased private plans. The questions about Medicaid were expanded to list state-specific names for Medicaid. The question about Medicare also included a richer definition of what the Medicare program is. The question about military health insurance was expanded to describe this coverage more fully. The question about whether anyone in the household was covered by a plan of someone outside the household was expanded to cover the full sample rather than merely children aged less than 15. A follow up question was also added about other health insurance which included a variety of state run and state funded plans. Furthermore, the sample frame was updated to include 1990 Decennial Census counts.

From 1998 forward, coverage under the Indian Health Service was no longer included in the Medicaid totals. In 2000, a verification question was asked; this resulted in a 7.4 percent decline in the share reported to be uninsured (Nelson & Mills (2001)).¹⁴

The general consensus is that the 1995 changes had no noticeable impact on overall health insurance estimates (e.g., U.S. Bureau of Labor Statistics (1995)). However, they may have affected the reported source of insurance resulting in more reported coverage through military care (U.S. Bureau of Labor Statistics (1995)), more reported employer-based coverage, and less reported private coverage purchased directly from an insurance company (see Fronstin (1997)). However,

¹³Our discussion of changes in the 1995 health insurance status is drawn from Swartz (1997) and from personal communication with Census staff who work on the CPS health insurance measures.

¹⁴There were further changes in the March 2001 health insurance questions, however, we do not discuss them since our sample ends with the March 2000 CPS and they are not relevant to our analysis.

Medicaid in general is underreported in the CPS and it is unclear how, pre-2001, the coverage of children with CHIP is reported. Moreover, Czajka & Lewis (1999) find that Medicaid coverage in the CPS, unlike other CPS health coverage measures, represents annual-ever enrollment rather than current coverage. As part of the 1995 changes, a general 5 point health status indicator was also added; this is the only available health indicator in the CPS.

The Census Bureau reports a number of different CPS-based statistics about health insurance coverage (see U.S. Bureau of the Census (2002)). We focus on three of these measures: were you covered at all last year, were you covered by private insurance, and were you covered by Medicaid. Because the CPS measures use all the available information for every year of data, their measures may capture changes in coverage status that are due solely to changes in the survey instrument.¹⁵ We also experimented with alternate codings of these variables that minimized the effects of the questionnaire changes by excluding information from the new questions from 1998 forward, by recoding persons covered by the Indian Health Service to be covered by Medicaid from 1998 on, by recoding persons 15 and older who were only covered by the plan of someone outside the household to not be covered, and by ignoring the additional follow up questions added in 1995. These changes produced estimates of coverage that were nearly identical to those obtained from using the original values; results using these alternate codings are available upon request.

Means for the CPS outcomes of interest (as well as for CPS demographic measures, other controls and welfare reform variables) are reported in Table 2. The vast majority of children (87%) and women (84%) were covered by some insurance last year. However, a smaller fraction were covered by private insurance (69% of children and 74% of women) and a substantial number (21% of children and 9% of women) were covered by Medicaid. Coverage varied by race and ethnicity. Only 84% of black children and only 73% of Hispanic children were covered at all last year, and both black and Hispanic children were much less likely than other children to be covered by private insurance and much more likely to be covered by Medicaid (only 46% of black children and 43% of Hispanic children were covered by private insurance while 42% of black children and 34% of Hispanic children were covered by Medicaid). There were similar differences in coverage among

¹⁵The 1995 version of the experimental health measures was not attached to the March 1995 CPS release but is available at the Census web site. In order to match reported Census insurance totals, we use the revised version of the March 1993 weights which incorporate the 1990 Decennial Census adjustments (also available from the Census FTP site) and we adjust the weights of 9 women from the 1992 March CPS as per the 1992 March CPS Technical Documentation's User Note.

women of different racial and ethnic groups. Very few children were reported as being in bad or poor health (2%) while around 8% of women were reported as being in bad or poor health.¹⁶ This varied as well by race and ethnicity; nearly 4% of black children and 3% of Hispanic children were reported as being in bad or fair health while 12% of black women and 9% of Hispanic were reported as being in bad or fair health.

The CPS has some strengths and weaknesses for looking at the effects of welfare reform on health insurance. While it offers large samples and was designed to be nationally-representative, it can only estimate those not covered by health insurance as the residual once those covered are removed. There is some question about whether the reference period for the questions about health insurance is last year or at the point the questions are administered. Comparisons of Medicaid participants suggest that there may significant undercounting of Medicaid participants in the March CPS (see Czajka & Lewis (1999)). These weaknesses led us to augment our analysis with the BRFSS data. The BRFSS is discussed in the next subsection.

4.2 BRFSS data

The BRFSS is a nationally-representative telephone survey of the civilian, noninstitutionalized adult population conducted by the Centers for Disease Control and Prevention in partnership with the states, Washington, D. C., and some territories. First fielded in 1984 in 20 states, the BRFSS now covers all states and is designed to yield uniform, state-representative data on risky behavior and preventive health practices by all persons 18 and older. The BRFSS is administered monthly in participating states. The probability of participation is intended to be equally likely in different months within the calendar year.¹⁷ States must follow CDC approved methods for sampling, and are required to ask core questions (asked every year in every participating state). The states are permitted to select questions from modules which are not asked every year and to propose their own questions. The BRFSS is a telephone survey, so households with no phones are excluded.¹⁸

¹⁶In a later draft, we will examine whether the health measure is different for the respondent (who self-reports) and others in the household (whose health is reported by the respondent). Children under 15 always have their health reported by others as they cannot be the respondent.

¹⁷Because of this uniform probability of participation within state within year, we do not drop states that are missing specific months within a year from our BRFSS sample.

¹⁸While 95% of households in the U. S. have phones, coverage is lower for persons living in the south, some racial groups, and for those in lower socioeconomic groups (U.S. Bureau of the Census (1994)).

Unlike the CPS and most other large household surveys, no proxy answers are permitted and only one adult (aged 18 or older) is interviewed per household. These two factors lead to the BRFSS having a lower response rate than many other surveys. Not every state participated in the BRFSS in every year, and a number of states began participating in 1990, thus we restrict our sample to 1990-2000 and to the set of states that asked each question every year. Since some questions were only asked from 1991, 1992, or 1993 forward, this selection rule means we have a slightly different set of states in our sample for different outcomes. The advantage of this is that we have a balanced panel of states for each outcome and thus can obtain average treatment effects for the states in the sample.¹⁹ Again unlike the CPS, the BRFSS does not produce fully imputed data. While the analysis weights allow the number of persons to match national CPS totals by year, age and state, there is no attempt to allocate responses for persons who do not know or refuse to answer specific questions. As a first pass, we ignore missing items (item non-response is fairly minor for most of our outcomes of interest).

Along with potential weaknesses, there are a number of advantages of the BRFSS for our analysis. Unlike the CPS, the BRFSS asks about insurance coverage directly and at the interview date. Moreover, this question has not changed over time, making it an important source of information about insurance coverage. Since the BRFSS asks if the respondent is currently employed, we can combine this information with information about insurance to see if changes in insured status are associated with working or not working. Our first three outcomes of interest in the BRFSS are thus: are you insured now, are you insured and working, and are you insured and not working.

In addition to collecting information about marital status, race and ethnicity, education, age, employment, and insurance status, the BRFSS asks about a wide range of health service utilization and health status and behavior outcomes. We focus on a number of these outcomes. Health care utilization outcomes we analyze include whether or not a women has had a checkup, breast exam, Pap smear, or mammogram (if she is 40 or older) in the last year. Another health care utilization measure we examine is whether a woman needed care but could not afford it.

¹⁹States that were excluded from all the analysis include D.C. (missing for all of 1995), Rhode Island (missing for all of 1994), and Wyoming (missing for all of 1993). The last missing year for other states was 1990 for Alaska, 1992 for Arkansas, 1991 for Kansas, 1991 for Nevada, and 1990 for New Jersey, thus these states are excluded from analysis of variables that were collected in the years they were missing. Furthermore states that did not ask a question for part of the period it was asked in most other states were excluded from those samples. A list of states and years in the sample for each outcome is available on request.

We also consider the following health behavior and health status outcomes: whether self-reported health status is fair or poor, the number of days in the last month the respondent reported that her mental or physical health limited her from her usual activities, whether or not the respondent is obese, whether she is a current smoker, and how many times in the last month she reported having had at least five drinks. We selected these outcomes both because they were available in a large cross-section of states and because they are important health indicators or indicators of stress.

Means for the outcomes of interest in the BRFSS are in Table 3 while means for both BRFSS and other controls and welfare reform variables are in Table 4. Means for insurance coverage in the BRFSS data also vary by race and ethnicity. While 88% of white women report being covered, only 80% of black women and 67% of Hispanics report being covered. One might expect the BRFSS measure of insurance to be lower than the CPS measure because it is a point in time measure, however since the BRFSS asks are you insured or not, rather than asking about specific types of insurance, the BRFSS measure might be expected to be higher than a corresponding CPS measure. Most women who are covered are also employed except for dropouts (as one would expect). A large share of women said they needed to see a doctor last year and could not afford it (14% of whites, 18% of blacks, 23% of Hispanics and 25% of dropouts). Self-reported general health was worse for all groups than the CPS health status measures. A substantial number of women reported adverse health behaviors or were at risk from their weight. Around one-fifth of blacks, Hispanics, and dropouts are obese while between 15% and 32% are current smokers. More than 20% of all women reported having had at least one binge of five or more drinks in the last month.

5 Empirical Model

The standard approach in the nonexperimental welfare reform literature is to use pooled cross-sections and run regressions of outcome measures on demographic covariates, state-level controls, policy variables, and state and year fixed effects. We follow this basic approach.

We estimate linear regression models where y_{ist} indicates an outcome for individual i in state s in year t and has the following form:²⁰

²⁰As described above, the outcome variables examined here are primarily indicator variables such as insurance

$$y_{ist} = X_{ist}\delta + L_{st}\alpha + R_{st}\beta + \gamma_s + \nu_t + \epsilon_{ist}. \quad (1)$$

Here, X_{ist} is a vector of demographic characteristics, including controls for the person’s age and its square, race and ethnicity, and in the women’s sample, dummy variables for her completed education level. In the children’s sample, these variables all measure the children’s characteristics. In particular, because of possible endogeneity of the household head’s identity, we do not include any characteristics of the head (such as education level) in X_{ist} . In the CPS samples, we also include controls for geographic location including dummy variables indicating residence in an urban area (MSA) and a central city (we also include dummies indicating whether the CPS censuses a household’s MSA or central-city status). These controls are not available in the BRFSS data.

L_{st} is a vector of state-level labor market variables meant to control for economic opportunities in the state. These variables include current and one-year lags of unemployment and aggregate employment growth rates. L_{st} also includes public assistance program variables (other than the reform variables) including the real maximum welfare benefit level for a family of three and measures of a state’s Medicaid generosity. The γ_s and ν_t terms represent state and year fixed effects. The state (year) fixed effects control for unobserved factors that differ across states and not over time (over time and not across states). In the BRFSS sample, we also include fixed effects for calendar month. Unobservable determinants are captured by ϵ_{ist} . All regressions and summary statistics are weighted.

Our main focus is on the coefficients of R_{st} , a vector of dummy variables for state-level welfare reform. The welfare reform variables we use can be classified into two categories: those related to state waivers in the pre-PRWORA era and those related to post-PRWORA TANF programs. Our main focus is on simple dummy variables indicating whether or not the given reform—waiver or TANF—is in place (implemented) in a state. Following the convention in the literature, we code a waiver as being in place only if it was “major”, in the sense of involving a significant deviation from the state’s AFDC program, and if it was in place statewide. Our primary data source for the dating of state reforms is a set of tables available on the website of the Assistant Secretary for

status and poor/fair health. While sensitivity checks show that the estimates are not sensitive to the linear probability model assumptions, future drafts of the paper will present probit models for all indicator variables.

Planning and Evaluation (ASPE) for the Department of Health and Human Services.²¹ For TANF, we construct a dummy variable indicating whether the state TANF plan had been implemented. In general, we coded states as having implemented a policy in a given month if the policy was implemented by the last day of the previous month.

The time period t varies across the data sets and outcome variables. The CPS data is collected in March and asks respondents about insurance coverage during the prior calendar year. The BRFSS data is collected monthly; some of the questions refer to contemporaneous measures, some refer to events in the last month, and others ask about the past 12 months. For contemporaneous variables, the state policy and labor market variables (L_{st} and R_{st}) are measured as of the month before the survey month.²² In the case of the retrospective questions, we construct the state variables over the same time period, either the previous calendar year for the CPS or the 12 month period before the month before the interview month for the BRFSS. If a reform (either waiver or TANF) is implemented at some time during the 12 month recall period, the reform variable is the fraction of the 12 month period that the reform is in place.²³

Some observers object that the simple dummy-variable approach taken here assumes that reform effects occur instantaneously at the time of implementation. However, this objection is on target only if one assumes that reform's effects are constant (over time and across states). In our view, this assumption would be unreasonable even if instantaneous effects could be presumed. Detailed aspects of state reforms and economic conditions are difficult to observe. Moreover, there is no reason to think that different demographic groups will respond to the same reforms in the same way. Given all this, we believe strongly that the coefficients on R_{st} should be interpreted as averages of heterogeneous treatment effects over the post-reform period.

Given this model specification, the impacts of welfare reform are identified using differences across states in the timing and presence of reform. The top panel of Table 1 reports the first year

²¹Specifically, these tables classify a waiver as “major” only if it related to one of the following policies: termination time limits, work exemptions, sanctions, increased earnings disregards, family caps, or work requirement time limits (Crouse (1999)). More specific details regarding our construction of reform variables are available on request in a data appendix.

²²The BRFSS reported month is the month during which the interview was completed. We chose this coding to be able to use the same reform variables for contemporaneous and during-the-last-month BRFSS outcomes.

²³As discussed above, many argue that the CPS insurance data captures current rather than last year's insurance status. In our empirical results, we present results alternatively treating the CPS health insurance variables as retrospective and contemporaneous.

for which we coded observations in each state as subject to a waiver by March 1. The table also lists the states that never implemented major statewide waivers according to ASPE. It is clear from the table, as well as previous literature, that there is substantial variation in the implementation of state waivers across states and time. Unfortunately for empirical researchers, variation in TANF implementation was much less extensive—all states implemented their TANF programs within a 14-month period. The bottom panel of Table 1 shows that for all states, the first March of TANF implementation occurred in either 1997 or 1998. One might thus expect imprecise estimates for the coefficients on TANF variables. However, the TANF coefficients are formally identified, so this precision issue is ultimately an empirical one.

Because we treat waivers and TANF implementation distinctly, our econometric models involve a “dual treatment” specification. It is thus important to consider carefully the interpretation of our estimated reform effects. States may be classified into four groups at any given time: (*i*) those who currently have neither an AFDC waiver nor TANF implemented; (*ii*) those who currently have AFDC waivers implemented; (*iii*) those who currently have TANF implemented and at some point in the past implemented an AFDC waiver; and (*iv*) those who currently have TANF implemented and never implemented a waiver.

Our focus will generally be on the least restrictive specification of reform effects, which is simply to include dummy variables for three of these four categories. This approach allows distinct effects for each of the three reform regimes. We have chosen to make our baseline group be category (*i*), state-year combinations for which neither reform is in place. That leads to three estimated reform effects—the impact of waivers, the impact of TANF for a state that had an earlier waiver (“ever waiver”), and the impact of TANF for a state that did not have a waiver (“never waiver”). Each of these coefficients is measured relative to the baseline period. In our empirical specifications, the waiver dummy is always set to 0 once the state’s TANF program is implemented. Hence, the coefficients on these variables are all comparable to each other (i.e., none of them must be added together to get the total effect of the given reform).²⁴

Lastly, we note that our standard errors have been adjusted to allow arbitrary correlation within state-by-year (for CPS) or state-by-month (for BRFSS) cells. Hence, our precision is not spuriously

²⁴More restrictive approaches have been used in the literature including constraining TANF effects to be uniform across waiver and nonwaiver states, or constraining reform effects to be constant across all reforms. For more discussion of this dual treatment method, see Bitler et al. (2002).

driven by the fact that we use microdata while the policy variation occurs at the state-year or state-month level.

6 Results

We report the main results in this section. We begin by presenting our results using the CPS samples of children aged less than 16 and women aged 18–54. Using the CPS, we examine the impact of reform on health insurance by type (any, private, and Medicaid) and also on health status. We then present results using the BRFSS sample of women aged 18–54. The BRFSS analysis covers health insurance, health service utilization, behaviors, and health outcomes.

For the women’s samples in the CPS and BRFSS, we present the results for three groups: blacks, Hispanics, and high school dropouts. For the CPS children’s sample, we present the results for blacks and Hispanics. We do not present a dropout children sample since they have not yet completed their education. These subgroups are chosen because of their relatively high rates of participation in the welfare system. An analysis of the March CPS in the pre-welfare reform period (1988–1992), shows that about 31 percent of black children and 19 percent of Hispanic children live in households with some AFDC income compared to about 12 percent among all children. Among women, about 18 percent of black women, 11 percent of Hispanic women, and 18 percent of high school dropout women live in households with some AFDC income compared to about 6 percent among all women.²⁵

Each of the model estimates are from linear probability models, and we provide the pre-reform mean to help in interpreting the magnitude of the estimated treatment effect. We report only the coefficients on the welfare reform variables (along with χ^2 statistics for joint significance of the reform variables). However, as discussed above, each of the models also include controls for age (of the child or woman) and its square, race/ethnicity (if applicable), educational attainment (for the women’s samples), MSA and central-city status (in the CPS samples), state labor market conditions, state public assistance programs (other than reform variables), state fixed effects, year fixed effects, and calendar month fixed effects (for the BRFSS sample).

²⁵We argued in earlier work (Bitler et al. (2002)) that the highest impact groups are black, central-city children and women, with AFDC participation rates of 37 percent and 22 percent respectively. The BRFSS does not identify central-city status, so to make results comparable across the data sets we use all blacks. See Bitler et al. (2002) for more details on these AFDC participation rates.

6.1 Results for CPS samples of children and women

The CPS estimates are presented in Table 5 (blacks), Table 6 (Hispanics) and Table 7 (dropout women). The first two tables of estimates have two panels, with each column in each panel presenting estimates from a separate regression. The top panel presents estimates for the children’s samples while the bottom panel presents estimates for the women’s samples. For the dropout’s table, there is only one panel with results for women but each column still presents estimates from a separate regression.

There are seven columns in each table. There are three health insurance outcomes: any insurance, private insurance, and Medicaid. As discussed above, the CPS health insurance variables are intended to measure any coverage last calendar year. However, there is considerable speculation and some evidence that the survey responses more closely approximate current coverage status. To explore the importance of these differences, the first three columns of the table present estimate models where the CPS health insurance outcomes are treated as coverage at the survey date (March). The second three columns treat the CPS health insurance outcomes as any coverage during the last calendar year. The difference between these two models amounts to the measurement of the welfare reform variables—in particular whether they correspond to current policies or policies in place last year.²⁶ The last column in the table presents estimates for general health—where the dependent variable equals one if each individual’s health is rated by the respondent as fair or poor.²⁷

The results for blacks, presented in Table 5, show significant sensitivity to whether we interpret the health insurance variables as current or last year’s coverage. Beginning with the first three columns, reform is associated with increases in private coverage. This is an expected consequence of reform, as discussed in Section 2. These effects tend to be larger for black children compared to black women, and the results tend to be larger for TANF compared to waivers. Using the pre-reform base rate of 46 to 56 percent for private insurance coverage, these results suggest increases of 1 to 9 percent.

The effects for Medicaid, however, are somewhat surprising and show increases in coverage

²⁶This also affects the measurement of the other state policy variables that enter as controls in the regressions; columns 1–3 use controls for the survey year and columns 4–6 for the previous calendar year.

²⁷The sample sizes are smaller for the self-rated health measure because it is only available beginning with 1995 survey. The insurance variables are available for the full 1989–2000 survey period.

associated with PRWORA reform. The effects of waivers are negative, as expected, but insignificant. There are two likely reasons for these results. First, in the later years in the sample (1998–2000) CHIP programs were established and expanding and it is largely unknown whether the children covered by this program end up classified as Medicaid.²⁸ Second, in this preliminary draft of this paper, we do not as of yet have a full set of controls to capture the expanding coverage for children through the Medicaid expansions and new CHIP programs. These omission, however, should affect primarily the estimates in the children’s sample.

The effects on any insurance coverage for blacks are somewhat mixed. For children, there are insignificant effects of waivers and positive and significant effects of TANF on overall coverage. For women, waivers are associated with a significant decline in coverage while TANF implementation in states that did not previously have a waiver is associated with significant increases in coverage. Aside from the Medicaid estimates, the results are in line with the basic predictions that the adverse effects of insurance would be worse for women, and worse during the waiver period.²⁹

The next three columns present results for the same insurance outcomes for women and children where the coverage variables are assumed to capture any coverage last calendar year. These results show overall declines in coverage, coming through a loss in private insurance associated with reform. This negative impact on private insurance is counter to our expectations and is somewhat difficult to explain unless there is some endogenous supply response in the insurance market. For the rest of the discussion of the CPS results, we rely on the results treating health insurance as current coverage.³⁰

The last column of Table 5 presents the results for health status. The medical outcome literature provides very compelling evidence that self-rated health is an important predictor of health outcomes (such as mortality). While the mechanism is not clear, it is clear that self-rated health is an independent predictor of mortality even when controlling for background and other health status variables (Idler & Benyamini (1997)). The results show that reform is associated with some improvements in self-rated health (a decline in the fraction citing fair or poor health), with larger

²⁸In fact, many states set up their CHIP programs within their existing Medicaid programs.

²⁹Note that any coverage does not equal any private plus Medicaid. There are other coverage types that are not presented here (e.g., military insurance). Furthermore, individuals can report coverage in more than one category (and may indeed have had coverage from more than one source over the past year).

³⁰We made considerable efforts to create health insurance variables that were consistent across the 1995 survey changes, when possible. The results based on those measures were not qualitatively different from those presented.

and significant effects for children. This evidence is consistent with the larger gains in insurance for black children.

Next, we turn to the results for Hispanics, presented in Table 6. These results suggest less positive effects of reform for Hispanic children and women. This is consistent with the expectations laid out in Section 2. Looking at the first three columns in the table, reform is associated in a mixed fashion with private insurance, with increases for waivers and insignificant positive (for children) and negative (for women) effects for TANF. While not statistically significant, the point estimates show consistent negative impacts of reform on Medicaid coverage for Hispanic children. This is consistent with the descriptive evidence cited above on the sharp declines in public insurance coverage among immigrants. Overall, waivers are associated with increases in any coverage while TANF is associated with decreases in any coverage. The last column of the table shows that reform is associated with improvements in health, with larger effects for children and with TANF reforms. None of these coefficients are significant, however.³¹

Finally, Table 7 presents the results for the sample of high school dropout women. Welfare waivers are associated with significant increases in private coverage and insignificant decreases in Medicaid, combining for an overall increase in any coverage. None of the estimates of the effects of PRWORA are significant, but they suggest modest increases in coverage.

6.2 Results for BRFSS women sample

Now we turn to the BRFSS results for black, Hispanic, and dropout women. There are three tables for each group—one each for health insurance coverage, health care utilization, and health behaviors and outcomes. Like the CPS tables, each column presents estimates from a separate regression. Note that the sample sizes vary across the different columns in the BRFSS tables. As discussed above, that is the result of several factors: no imputation for nonresponse, because some variables are not available in all years, and because some variables were not asked by all states during the years these variables were collected.³² Some of the BRFSS outcomes correspond to the time of the survey (e.g., insurance status) and others correspond to the last 12 months (e.g., checkups). The reform variables and state policy variables are constructed to match the appropriate time periods.

³¹Results for whites, not presented here, show very small and no statistically significant results. This is expected given their lower average participation rates in AFDC/TANF.

³²For example, Pap smears were only asked about from 1991 on.

Table 8 presents the results on the effects of reform on insurance for black women. The BRFSS includes an overall insurance variable and does not ask about particular insurance types. To try to disentangle the impacts of reform on private versus Medicaid coverage, we created two additional insurance measures: insured and working, and insured and not working.

The results for black women show that reform is associated with an increase in the propensity to be working and have health insurance coverage. The results for not working and insured are mixed, with increases associated with waivers and decreases associated with TANF. Overall, waivers and TANF in states that had waivers are associated with increases in any insurance. Only one of these coefficients, however, is statistically significant.

Consistent with the CPS results and our prior expectations, the health insurance coverage of Hispanic women is much more adversely impacted by reform. Table 9 presents these results. The results show that reform is associated with a consistent negative impact on any health insurance coverage. While the fraction of Hispanic women who are working and insured generally increases with reform, this is offset by negative impacts of reform on the propensity to be insured and not working. These negative impacts on insured and not working are relatively large—suggesting decreases of 12–23 percent relative to the pre-reform baseline.

The results for high school dropout women are presented in Table 10. These results show a similar pattern—reform is associated with an increase in those insured and employed and a decrease in those insured and not employed. For dropouts, however, the overall effect of reform on insurance is positive but not statistically significant.

The results for health care utilization are presented in Tables 11–13. We have five measures of health care utilization. The first four correspond to whether the woman has had preventive services in the past 12 months including: a checkup, a Pap smear, a professional breast exam, and (for women aged 40–54 only) a mammogram. A positive coefficient for these measures represents an increase in health care utilization associated with reform. The final measure is equal to one if the woman reports she needed care in the past 12 months but that it was unaffordable. Here a positive coefficient suggests an adverse impact of reform. Looking across the tables, the results show almost uniformly that welfare reform is associated with a reduction in health care utilization and an increase in unaffordable care. Consistent with the earlier results on health insurance, the results are particularly adverse for Hispanic women. For example for this group, the results show

that TANF is associated with a 5 percent decrease in the likelihood of having a checkup, and that welfare reform in general is associated with a 13 to 28 percent increase in the propensity to need care but find it unaffordable. While many of the results are not statistically significant, the results also suggest larger negative impacts of TANF relative to waivers.

It is worth pointing out that these negative impacts on utilization are not necessarily inconsistent with the (mixed but generally) positive impacts of reform on health insurance coverage for blacks and dropouts. The movement away from public coverage combined with a decrease in free time (associated with increases in employment) could itself lead to reductions in utilization.

The final set of estimates correspond to health behaviors and outcomes and are presented for the three groups of women in Tables 14–16. We present three measures of health status and two measures of adverse health behaviors. The health status variables include self-rated health (measure is equal to one if health is fair or poor), the number of limited days due to poor health, and an indicator for obesity.³³ The behaviors include smoking (dummy equals one if you are coded as a current smoker), and drinking (number of times in the last month the woman had at least 5 drinks).³⁴

These measures show somewhat weaker and more mixed effects of reform, compared to the results for health insurance coverage and health care utilization. The results for black women, presented in Table 14, show very small and insignificant effects on self-rated health status. Welfare waivers lead to significant declines in the number of limited days and TANF leads to positive but insignificant effects on limited days. Welfare reform is associated with a consistent negative (but insignificant) impact on heavy drinking for black women, while the results for smoking show that waivers are associated with a significant decline in current smoking. The results for Hispanic women show that reform is associated with stronger improvements in self-rated health. However, waivers

³³We construct the obesity variable by using the height and weight variables provided in the BRFSS. Following usual CDC conventions, obesity is an indicator variable for $BMI \geq 30$.

³⁴The BRFSS current smoking variable underwent a change in 1996. Before 1996, the BRFSS coded you as a current smoker if you had smoked at least 100 cigarettes in your life and also said you currently were a smoker. From 1996 on, the current-smoker question was replaced by a question—only asked of those persons who had ever smoked at least 100 cigarettes—asking whether you now smoked everyday, some days or not at all; the BRFSS coded you as a current smoker if you had smoked 100 cigarettes and now smoked everyday or some days. While this change in coding could cause a spurious change in the average probability of being reported to be a current smoker, there is no way to consistently code this variable. There was little difference in the share of current smokers before and after this change. If there was a discrete change in the reported share of persons currently smoking, it should be picked up by year fixed effects in the multivariate regressions.

are associated with a significant increase in limited days. The results for obesity, smoking, and binge drinking show no uniform pattern and the welfare reform coefficients are insignificant. The results for dropout women, presented in Table 16, are more consistent. Reform is associated (but not statistically significantly) with improvements in self-rated health and reductions in the number of limited days. However, reform is also associated with an increase in obesity and an increase in the probability of being a current smoker.

7 Conclusion

In the context of fundamental changes in welfare programs, falling AFDC/TANF caseloads, and declines in Medicaid participation, this paper presents estimates of the impact of welfare reform on health insurance coverage, health care utilization and health status. The health of low income families is extremely important and to date we know almost nothing about health is affected by the recent state and federal reforms. We use data from the Behavioral Risk Factor Surveillance System (BRFSS) and the Current Population Survey covering the 1990-2000 period. Using the CPS we construct samples of children and adult women and examine the impact of state waivers and TANF implementation on health insurance (by type), and health status. Using the BRFSS data, we construct a sample of adult women and examine the impact of welfare reform on health insurance, preventive health care utilization (e.g., checkups, breast exams, Pap smears, and mammograms), smoking and drinking behavior, self-rated health status, days limited from usual activities, and obesity.

Our results show that welfare reform is associated with a decrease in the likelihood of having health insurance and not working and an increase in the likelihood of having insurance and working. Reform is also associated with decreases in health care utilization and evidence about reform and health status is mixed. The results show that Hispanics have been particularly hard hit by welfare reform, with declining health insurance coverage and health care utilization, and increases in having needed care but having found it unaffordable.

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Figure 1
Expected Effects of Reform on Health

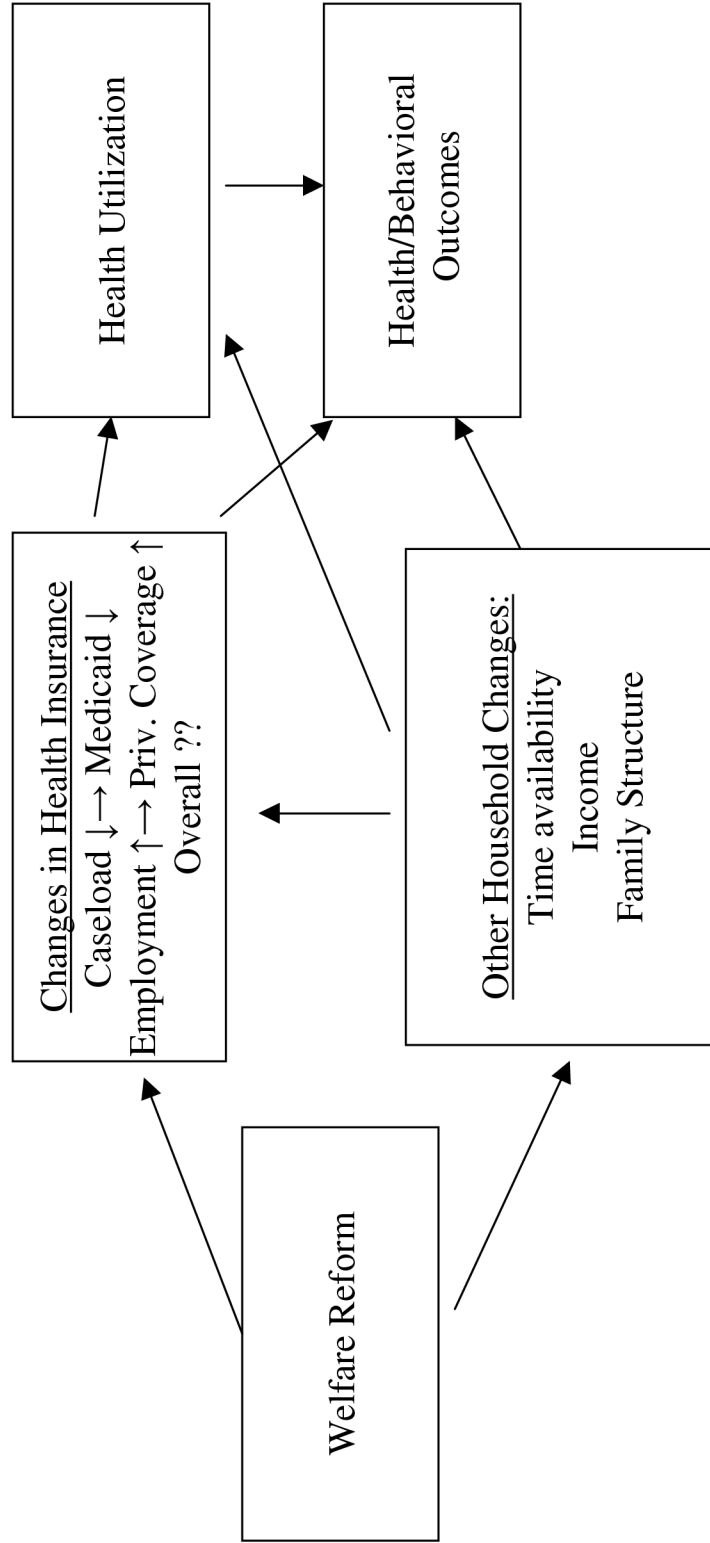


Table 1: State implementation of AFDC waivers and TANF programs, by March 1

	Ever had a waiver:					Never had Waiver
	<u>1993</u>	<u>1994</u>	<u>1995</u>	<u>1996</u>	<u>1997</u>	
First Year for which Major Waiver Implemented by March 1	California	Georgia	Arkansas	Arizona	Hawaii	Alabama
	Michigan	Illinois	South Dakota	Connecticut		Florida
	New Jersey	Iowa	Vermont	Delaware		Kansas
	Oregon			Indiana		Kentucky
	Utah			Massachusetts		Louisiana
				Mississippi		Maine
				Missouri		Maryland
				Montana		Nebraska
				Virginia		Nevada
				Washington		New Hampshire
				West Virginia		North Carolina
				Wisconsin		Ohio
						Oklahoma
						South Carolina
						Tennessee
						Texas
						Wyoming
						Alaska
						Colorado
						DC
						Idaho
						Minnesota
						New Mexico
						New York
						North Dakota
						Pennsylvania
						Rhode Island
First Year for which TANF Implemented by March 1					<u>1997</u>	<u>1998</u>
					Alabama	Alaska
					Florida	Colorado
					Kansas	DC
					Kentucky	Idaho
					Louisiana	Minnesota
					Maine	New Mexico
					Maryland	New York
					Nebraska	North Dakota
					Nevada	Pennsylvania
					New Hampshire	Rhode Island
					North Carolina	Arkansas
					Ohio	California
					Oklahoma	Delaware
					South Carolina	Hawaii
					Tennessee	Illinois
					Texas	Mississippi
					Wyoming	New Jersey
					Arizona	Wisconsin
					Connecticut	
					Georgia	
					Indiana	
					Iowa	
					Massachusetts	
					Michigan	
					Missouri	
					Montana	
					Oregon	
					South Dakota	
					Utah	
					Vermont	
					Virginia	
					Washington	
					West Virginia	

Note: See text for data sources and explanation.

Table 2: CPS sample summary statistics, all children and women

	Children aged < 16	Women aged 18–54
Had any health insurance last year (CPS)	0.87 (0.34)	0.84 (0.37)
Had any private HI last year (CPS)	0.69 (0.46)	0.74 (0.44)
Had Medicaid last year (CPS)	0.21 (0.41)	0.09 (0.29)
General health is poor or fair	0.02 (0.15)	0.08 (0.26)
Waiver implemented	0.13 (0.34)	0.13 (0.33)
TANF implemented, ever had waiver	0.22 (0.41)	0.22 (0.41)
TANF implemented, never had waiver	0.09 (0.29)	0.10 (0.29)
Share of last cal. yr., waiver impl.	0.14 (0.33)	0.13 (0.32)
Share of last cal. yr., TANF, ever waiver	0.16 (0.36)	0.16 (0.36)
Share of last cal. yr., TANF, never waiver	0.07 (0.25)	0.08 (0.26)
Income limit (% of FPL), pregnant women's Medicaid elig.	166.19 (47.28)	166.30 (47.33)
Real max. AFDC/TANF benefits, family of three	5.17 (2.08)	5.17 (2.07)
State unemployment rate	5.59 (1.52)	5.58 (1.51)
State employment growth rate	1.95 (1.50)	1.91 (1.51)
Age	7.4 (4.6)	35.3 (10.1)
Black	0.159 (0.366)	0.133 (0.339)
Hispanic	0.12 (0.33)	0.09 (0.28)
Living in central city	0.24 (0.43)	0.25 (0.43)
Central city status unidentified	0.15 (0.36)	0.15 (0.36)
Living in MSA	0.78 (0.41)	0.80 (0.40)
MSA status unidentified	0.01 (0.08)	0.01 (0.07)
High school dropout		0.14 (0.34)
High school graduate		0.358 (0.480)
Some college, no 4 year degree		0.284 (0.451)
N	209,385	228,476

Note: Tabulations from the March CPS, 1989–2000, using only respondents in households in months 1–4 of sample. All figures in top row of each cell are means. Figures in bottom row are standard deviations. All figures weighted using March *psupwt* variable. Black and white refer to non-Hispanic blacks and whites. Sample is all children 15 and under for column 1 and all women 18–54 in column 2. See text for more information.

Table 3: BRFSS sample summary statistics for outcome variables, all women 18–54

	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>Dropouts</u>
Have any health insurance (private or public)	0.88 (0.33)	0.80 (0.40)	0.67 (0.47)	0.68 (0.47)
Have HI and employed now	0.66 (0.47)	0.59 (0.49)	0.44 (0.50)	0.34 (0.47)
Have HI and are not employed now	0.22 (0.42)	0.21 (0.40)	0.22 (0.41)	0.33 (0.47)
Last checkup was in the last 12 months	0.71 (0.46)	0.80 (0.40)	0.70 (0.46)	0.69 (0.46)
Last Pap. smear was in the last year	0.71 (0.45)	0.76 (0.43)	0.66 (0.48)	0.62 (0.49)
Last professional breast exam was in the last year	0.72 (0.45)	0.71 (0.45)	0.57 (0.49)	0.56 (0.50)
Last mammogram was in the last year	0.47 (0.50)	0.47 (0.50)	0.43 (0.49)	0.38 (0.49)
Needed to see a doctor but could not afford to in the last year	0.14 (0.34)	0.18 (0.39)	0.23 (0.42)	0.25 (0.43)
General health is fair or poor	0.09 (0.29)	0.17 (0.38)	0.21 (0.40)	0.26 (0.44)
Days in last month poor health kept R from usual activities	1.63 (5.21)	2.07 (5.92)	1.81 (5.50)	2.60 (6.88)
Obese (BMI \geq 30)	0.13 (0.33)	0.26 (0.44)	0.18 (0.39)	0.21 (0.41)
Current smoker	0.25 (0.43)	0.21 (0.41)	0.15 (0.36)	0.32 (0.47)
Number of times had at least 5 drinks in the last month	0.34 (1.63)	0.21 (1.31)	0.28 (1.34)	0.33 (1.81)
N	400,129	48,737	33,593	43,268

Note: Tabulations from the BRFSS, 1990–2000 with standard errors in parentheses. Weighting is based on *finalwt* variable. Black and white subgroups all defined as non-Hispanic. Sample for some outcomes is smaller than reported N because some states did not collect all data every year. Sample is all women 18–54 in the subgroup defined in the column label except for mammograms, where it is women 40–54. See text for more information.

Table 4: BRFSS sample summary statistics for control variables, all women 18–54

	<u>White</u>	<u>Black</u>	<u>Hispanic</u>	<u>Dropouts</u>
Waiver implemented	0.14 (0.35)	0.14 (0.34)	0.21 (0.41)	0.16 (0.37)
TANF implemented, ever had waiver	0.22 (0.42)	0.24 (0.43)	0.30 (0.46)	0.25 (0.43)
TANF implemented, never had waiver	0.11 (0.31)	0.12 (0.33)	0.10 (0.30)	0.10 (0.30)
Share of last yr., waiver impl.	0.14 (0.32)	0.14 (0.32)	0.22 (0.39)	0.16 (0.34)
Share of last yr., TANF ever waiver	0.20 (0.38)	0.21 (0.40)	0.26 (0.42)	0.22 (0.40)
Share of last yr., TANF, never waiver	0.09 (0.28)	0.11 (0.30)	0.09 (0.28)	0.09 (0.27)
Income limit (% of FPL), pregnant women’s Medicaid elig.	171.71 (39.02)	172.03 (38.75)	186.89 (41.64)	176.47 (42.04)
Real max. AFDC/TANF benefits, family of three	5.08 (1.94)	4.45 (1.90)	5.53 (2.30)	4.97 (2.14)
State unemployment rate	5.57 (1.56)	5.53 (1.41)	5.92 (1.55)	5.73 (1.52)
State employment growth rate	1.88 (1.53)	1.89 (1.43)	2.15 (1.59)	2.01 (1.52)
Age	36.0 (9.9)	35.1 (10.0)	33.9 (9.8)	35.2 (10.9)
High school dropout, no GED	0.08 (0.27)	0.12 (0.32)	0.28 (0.45)	1.00 (0.00)
High school diploma or GED only	0.33 (0.47)	0.36 (0.48)	0.30 (0.46)	0.00 (0.00)
Some college/technical school, no 4 year degree	0.31 (0.46)	0.31 (0.46)	0.25 (0.44)	0.00 (0.00)
N	400,129	48,737	33,593	43,268

Note: Tabulations from the BRFSS, 1990–2000 with standard errors in parentheses. Weighting is based on *finalwt* variable. Black and white subgroups all defined as non-Hispanic. Sample for some outcomes is smaller than reported N because some states did not collect all data every year. Sample is all women 18–54 in the subgroup defined in the column label. See text for more information.

Table 5: Health status and insurance (black children and women in the CPS)

<i>Health insurance last year</i>							
	<u>Any</u>	<i>Current controls:</i>		<u>Any</u>	<i>Lagged controls:</i>		<i>Current Cont.:</i>
		<u>Any private</u>	<u>Medicaid</u>		<u>Any private</u>	<u>Medicaid</u>	<u>Health is</u>
							<u>Fair/poor</u>
<i>A. Children's sample</i>							
Any major waiver	-0.005 (0.014)	0.037 (0.025)	-0.029 (0.021)	0.002 (0.017)	0.008 (0.024)	-0.002 (0.024)	-0.027** (0.011)
<u>TANF in force:</u>							
Ever had waiver	0.068*** (0.023)	0.042 (0.039)	0.059* (0.031)	-0.059* (0.035)	-0.130*** (0.046)	0.051 (0.043)	-0.025* (0.014)
Never had waiver	0.088*** (0.024)	0.031 (0.039)	0.103*** (0.034)	-0.011 (0.033)	-0.108** (0.045)	0.110** (0.045)	0.002 (0.014)
χ^2 for joint sig., ref. (<i>p</i> -value)	14.637*** (0.002)	2.732 (0.435)	12.074*** (0.007)	6.910* (0.075)	9.587** (0.022)	7.846** (0.049)	8.343** (0.039)
Pre-reform mean	0.844	0.462	0.431	0.844	0.465	0.430	0.051
N	26,549	26,549	26,549	26,549	26,549	26,549	12,107
<i>B. Women's sample</i>							
Any major waiver	-0.025* (0.015)	-0.004 (0.017)	-0.015 (0.012)	-0.009 (0.019)	0.007 (0.020)	-0.012 (0.014)	-0.012 (0.016)
<u>TANF in force:</u>							
Ever had waiver	0.006 (0.023)	0.008 (0.021)	0.021 (0.024)	-0.036 (0.029)	-0.042 (0.042)	0.016 (0.027)	-0.011 (0.021)
Never had waiver	0.049** (0.024)	0.040* (0.021)	0.026 (0.024)	0.009 (0.031)	0.000 (0.043)	0.015 (0.028)	0.006 (0.017)
χ^2 for joint sig., ref. (<i>p</i> -value)	13.191*** (0.004)	5.711 (0.127)	3.460 (0.326)	7.965** (0.047)	5.947 (0.114)	1.153 (0.764)	1.346 (0.718)
Pre-reform mean	0.791	0.556	0.231	0.790	0.557	0.230	0.158
N	24,176	24,176	24,176	24,176	24,176	24,176	11,326

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are coefficients and associated standard errors from OLS regressions. χ^2 statistic is for test that all reported coefficients are 0. All specifications are weighted using March CPS *psupwgt* variable, with robust variance calculations to account for state-by-year-level clustering. Welfare reform and economic variables refer to the survey year for columns 1–3 and 7 and to the previous calendar year for columns 4–6. Additional control variables are: age of child and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for residence in central city and MSA; dummy for central-city status being censored; dummy for MSA status being censored; dummy for whether any Medicaid expansion has been enacted in the state; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; dummies for educational attainment (only for the women's sample); and year and state dummy variables.

Table 6: Health status and insurance (Hispanic children and women in the CPS)

<i>Health insurance last year</i>							
	<u>Any</u>	<i>Current controls:</i>		<u>Any</u>	<i>Lagged controls:</i>		<i>Current Cont.:</i>
		<u>Any private</u>	<u>Medicaid</u>		<u>Any private</u>	<u>Medicaid</u>	<u>Health is</u>
							<u>Fair/poor</u>
<i>A. Children's sample</i>							
Any major waiver	0.017 (0.019)	0.034* (0.019)	-0.026 (0.019)	0.039* (0.021)	0.042* (0.023)	0.001 (0.025)	-0.004 (0.011)
<u>TANF in force:</u>							
Ever had waiver	-0.007 (0.033)	0.026 (0.023)	-0.038 (0.048)	-0.006 (0.032)	0.008 (0.028)	-0.023 (0.025)	-0.015 (0.011)
Never had waiver	-0.010 (0.035)	0.036 (0.028)	-0.036 (0.047)	-0.002 (0.033)	0.036 (0.034)	-0.030 (0.028)	-0.021* (0.012)
χ^2 for joint sig., ref. (<i>p</i> -value)	0.984 (0.805)	5.398 (0.145)	2.067 (0.559)	3.955 (0.266)	6.012 (0.111)	1.249 (0.741)	3.349 (0.341)
Pre-reform mean	0.731	0.436	0.328	0.732	0.433	0.333	0.044
N	33,442	33,442	33,442	33,442	33,442	33,442	17,057
<i>B. Women's sample</i>							
Any major waiver	0.040*** (0.015)	0.030** (0.014)	0.012 (0.009)	0.021 (0.016)	-0.002 (0.017)	0.029*** (0.011)	-0.007 (0.013)
<u>TANF in force:</u>							
Ever had waiver	-0.002 (0.021)	-0.012 (0.019)	0.023* (0.014)	0.054** (0.026)	0.029 (0.027)	0.022 (0.014)	-0.013 (0.014)
Never had waiver	-0.020 (0.026)	-0.017 (0.023)	0.005 (0.015)	0.031 (0.025)	0.026 (0.025)	0.000 (0.019)	-0.000 (0.014)
χ^2 for joint sig., ref. (<i>p</i> -value)	7.187* (0.066)	5.480 (0.140)	5.076 (0.166)	5.222 (0.156)	1.309 (0.727)	9.636** (0.022)	1.465 (0.690)
Pre-reform mean	0.663	0.499	0.158	0.662	0.497	0.160	0.131
N	28,781	28,781	28,781	28,781	28,781	28,781	14,475

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are coefficients and associated standard errors from OLS regressions. χ^2 statistic is for test that all reported coefficients are 0. All specifications are weighted using March CPS *psupwgt* variable, with robust variance calculations to account for state-by-year-level clustering. Welfare reform and economic variables refer to the survey year for columns 1–3 and 7 and to the previous calendar year for columns 4–6. Additional control variables are: age of child and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for residence in central city and MSA; dummy for central-city status being censored; dummy for MSA status being censored; dummy for whether any Medicaid expansion has been enacted in the state; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; dummies for educational attainment (only for the women's sample); and year and state dummy variables.

Table 7: Health status and insurance (dropout women in the CPS)

<i>Health insurance last year</i>							
	<u>Any</u>	<i>Current controls:</i>		<u>Any</u>	<i>Lagged controls:</i>		<i>Current Cont.:</i>
		<u>Any private</u>	<u>Medicaid</u>		<u>Any private</u>	<u>Medicaid</u>	<u>Health is</u>
							<u>Fair/poor</u>
<i>A. Women's sample</i>							
Any major waiver	0.022 (0.016)	0.030** (0.014)	-0.013 (0.016)	0.030* (0.017)	0.013 (0.014)	0.019 (0.016)	-0.022 (0.014)
<i>TANF in force:</i>							
Ever had waiver	0.019 (0.023)	0.000 (0.024)	0.007 (0.030)	0.010 (0.025)	-0.039 (0.043)	0.048 (0.036)	0.025 (0.019)
Never had waiver	0.015 (0.026)	-0.001 (0.025)	0.013 (0.033)	0.004 (0.031)	-0.022 (0.044)	0.036 (0.037)	0.019 (0.018)
χ^2 for joint sig., ref. (<i>p</i> -value)	2.027 (0.567)	4.386 (0.223)	0.885 (0.829)	3.230 (0.358)	2.802 (0.423)	2.803 (0.423)	11.300** (0.010)
Pre-reform mean	0.705	0.429	0.274	0.702	0.427	0.273	0.218
N	33,158	33,158	33,158	33,158	33,158	33,158	14,500

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are coefficients and associated standard errors from OLS regressions. χ^2 statistic is for test that all reported coefficients are 0. All specifications are weighted using March CPS *psupwgt* variable, with robust variance calculations to account for state-by-year-level clustering. Welfare reform and economic variables refer to the survey year for columns 1–3 and 7 and to the previous calendar year for columns 4–6. Additional control variables are: age of child and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for residence in central city and MSA; dummy for central-city status being censored; dummy for MSA status being censored; dummies for being black and for being Hispanic; dummy for whether any Medicaid expansion has been enacted in the state; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year and state dummy variables.

Table 8: Insurance status (black women in the BRFSS)

	<i>Have health insurance and:</i>		
	<u>Insured</u>	<u>Employed</u>	<u>Not employed</u>
Any major waiver	0.021* (0.011)	0.017 (0.015)	0.005 (0.013)
<i>TANF in force:</i>			
Ever had waiver	0.026 (0.020)	0.033 (0.026)	-0.009 (0.023)
Never had waiver	-0.001 (0.020)	0.016 (0.026)	-0.018 (0.023)
χ^2 for joint sig., ref. (<i>p</i> -value)	6.252* (0.100)	2.424 (0.489)	1.006 (0.800)
Pre-reform mean	0.793	0.587	0.205
N	43,608	41,585	41,585

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey year. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 9: Insurance status (Hispanic women in the BRFSS)

	<i>Have health insurance and:</i>		
	<u>Insured</u>	<u>Employed</u>	<u>Not employed</u>
Any major waiver	-0.026 (0.016)	-0.000 (0.018)	-0.026 (0.017)
<i>TANF in force:</i>			
Ever had waiver	-0.016 (0.027)	0.034 (0.027)	-0.049* (0.027)
Never had waiver	-0.022 (0.026)	0.011 (0.027)	-0.032 (0.027)
χ^2 for joint sig., ref. (<i>p</i> -value)	3.777 (0.287)	2.846 (0.416)	4.233 (0.237)
Pre-reform mean	0.695	0.480	0.214
N	30,508	30,279	30,279

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey year. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 10: Insurance status (dropout women in the BRFSS)

	<i>Have health insurance and:</i>		
	<u>Insured</u>	<u>Employed</u>	<u>Not employed</u>
Any major waiver	-0.008 (0.016)	0.007 (0.016)	-0.022 (0.017)
<i>TANF in force:</i>			
Ever had waiver	0.020 (0.027)	0.049* (0.025)	-0.024 (0.026)
Never had waiver	0.027 (0.026)	0.039 (0.025)	-0.010 (0.026)
χ^2 for joint sig., ref. (<i>p</i> -value)	1.794 (0.616)	3.892 (0.273)	2.065 (0.559)
Pre-reform mean	0.753	0.392	0.359
N	37,852	36,336	36,336

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey year. Additional control variables are: age and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for being black-non-Hispanic, white-non-Hispanic and for being Hispanic (non-Hispanics of other races are the omitted category); income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 11: Health care utilization (black women in the BRFSS)

	<i>Within last year:</i>				
	<u>Check-up</u>	<u>Pap smear</u>	<u>Breast exam</u>	<u>Mammogram</u>	<u>Needed care, Unaffordable</u>
Any major waiver	0.016 (0.014)	-0.019 (0.016)	-0.011 (0.018)	0.020 (0.031)	0.016 (0.013)
<i>TANF in force:</i>					
Ever had waiver	0.003 (0.026)	-0.060** (0.027)	-0.012 (0.036)	0.046 (0.059)	0.004 (0.025)
Never had waiver	-0.017 (0.026)	-0.072*** (0.027)	-0.043 (0.036)	0.014 (0.059)	-0.017 (0.024)
χ^2 for joint sig., ref. (<i>p</i> -value)	3.770 (0.287)	8.090** (0.044)	5.765 (0.124)	1.891 (0.595)	3.766 (0.288)
Pre-reform mean	0.775	0.752	0.710	0.373	0.186
N	45,219	38,571	40,052	15,065	43,628

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the year before the survey. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 12: Health care utilization (Hispanic women in the BRFSS)

	<i>Within last year:</i>				
	<u>Check-up</u>	<u>Pap smear</u>	<u>Breast exam</u>	<u>Mammogram</u>	<u>Needed care, Unaffordable</u>
Any major waiver	-0.038* (0.023)	-0.017 (0.024)	-0.016 (0.025)	-0.005 (0.038)	0.067*** (0.020)
<i>TANF in force:</i>					
Ever had waiver	-0.035 (0.030)	-0.072** (0.035)	-0.036 (0.037)	0.006 (0.067)	0.061* (0.033)
Never had waiver	0.006 (0.031)	-0.051 (0.035)	-0.026 (0.039)	-0.046 (0.069)	0.032 (0.033)
χ^2 for joint sig., ref. (<i>p</i> -value)	6.272* (0.099)	4.429 (0.219)	1.097 (0.778)	2.392 (0.495)	12.046*** (0.007)
Pre-reform mean	0.730	0.650	0.590	0.336	0.239
N	30,625	27,701	27,586	9,139	30,526

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the year before the survey. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 13: Health care utilization (dropout women in the BRFSS)

	<i>Within last year:</i>				
	<u>Check-up</u>	<u>Pap smear</u>	<u>Breast exam</u>	<u>Mammogram</u>	<u>Needed care, Unaffordable</u>
Any major waiver	-0.036** (0.018)	0.011 (0.020)	-0.031 (0.021)	-0.013 (0.029)	0.015 (0.017)
<i>TANF in force:</i>					
Ever had waiver	-0.008 (0.030)	-0.010 (0.036)	-0.048 (0.035)	-0.010 (0.063)	0.020 (0.029)
Never had waiver	0.015 (0.031)	-0.016 (0.036)	-0.064* (0.035)	-0.008 (0.064)	0.001 (0.030)
χ^2 for joint sig., ref. (<i>p</i> -value)	5.134 (0.162)	0.702 (0.873)	5.392 (0.145)	0.212 (0.976)	1.536 (0.674)
Pre-reform mean	0.703	0.632	0.587	0.327	0.220
N	39,205	32,613	32,832	14,514	37,915

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the year before the survey. Additional control variables are: age and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for being black-non-Hispanic, white-non-Hispanic and for being Hispanic (non-Hispanics of other races are the omitted category); income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 14: Behavior and self-reported health status (black women in the BRFSS)

	<u>Health is</u> <u>Fair/poor</u>	<u>Days gen. health</u> <u>lim. R activ.</u>	<u>Obese</u>	<u>Current</u> <u>Smoker</u>	<u>Times at least 5</u> <u>Drinks, last month</u>
Any major waiver	-0.008 (0.013)	-0.398** (0.192)	0.006 (0.013)	-0.025** (0.012)	-0.014 (0.048)
<i>TANF in force:</i>					
Ever had waiver	0.003 (0.020)	0.081 (0.318)	-0.003 (0.024)	-0.007 (0.021)	-0.013 (0.056)
Never had waiver	-0.001 (0.020)	0.508 (0.321)	-0.008 (0.024)	-0.010 (0.020)	-0.050 (0.060)
χ^2 for joint sig., ref. (<i>p</i> -value)	1.165 (0.761)	8.963** (0.030)	0.410 (0.938)	5.798 (0.122)	0.858 (0.835)
Pre-reform mean	0.193	2.008	0.233	0.213	0.224
N	39,012	38,789	43,081	45,399	23,099

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey year. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 15: Behavior and self-reported health status (Hispanic women in the BRFSS)

	<u>Health is</u> <u>Fair/poor</u>	<u>Days gen. health</u> <u>lim. R activ.</u>	<u>Obese</u>	<u>Current</u> <u>Smoker</u>	<u>Times at least 5</u> <u>Drinks, last month</u>
Any major waiver	-0.024 (0.021)	0.575** (0.282)	0.016 (0.015)	-0.021 (0.014)	-0.047 (0.071)
<i>TANF in force:</i>					
Ever had waiver	-0.030 (0.025)	0.008 (0.318)	0.013 (0.024)	-0.001 (0.019)	0.006 (0.083)
Never had waiver	-0.043* (0.023)	-0.105 (0.338)	-0.023 (0.024)	0.009 (0.019)	0.058 (0.085)
χ^2 for joint sig., ref.4.793 (<i>p</i> -value)	(0.188)	5.142 (0.162)	5.420 (0.143)	2.632 (0.452)	1.127 (0.771)
Pre-reform mean	0.194	1.756	0.147	0.163	0.310
N	28,023	27,858	28,886	30,799	15,102

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey. Additional control variables are: age and its square; dummy for being a high school dropout; dummy for having a high school diploma but no more education; dummy for having more than a high school education but less than a college degree (omitted category is having at least a college degree); real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.

Table 16: Behavior and self-reported health status (dropout women in the BRFSS)

	<u>Health is</u> <u>Fair/poor</u>	<u>Days gen. health</u> <u>lim. R activ.</u>	<u>Obese</u>	<u>Current</u> <u>Smoker</u>	<u>Times at least 5</u> <u>Drinks, last month</u>
Any major waiver	-0.010 (0.017)	-0.025 (0.260)	0.040*** (0.014)	-0.011 (0.015)	-0.045 (0.070)
<i>TANF in force:</i>					
Ever had waiver	-0.005 (0.025)	-0.234 (0.416)	0.027 (0.024)	0.049** (0.024)	0.001 (0.091)
Never had waiver	-0.007 (0.023)	-0.012 (0.415)	0.017 (0.025)	0.039 (0.025)	0.013 (0.079)
χ^2 for joint sig., ref. (<i>p</i> -value)	0.562 (0.905)	0.988 (0.804)	8.092** (0.044)	7.313* (0.063)	0.658 (0.883)
Pre-reform mean	0.199	2.250	0.176	0.314	0.380
N	33,196	32,859	37,326	39,618	20,619

Note: ***, **, and * indicate statistical significance at the 1%, 5%, and 10% levels, respectively. All figures are OLS coefficients and associated standard errors. All specifications are weighted using BRFSS *finalwt* variable, with robust variance calculations to account for state-by-month clustering. Economic and welfare reform variables refer to the survey. Additional control variables are: age and its square; real maximum AFDC/TANF benefits for a family of three; current and one-year lagged values of state rates of unemployment and employment growth; dummies for being black-non-Hispanic, white-non-Hispanic and for being Hispanic (non-Hispanics of other races are the omitted category); income limit (as percentage of FPL) for pregnant women to be eligible for Medicaid; and year, state, and calendar-month dummy variables.