

# Program Recertification Costs: Evidence from SNAP

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## Abstract

We document low rates of recertification for the Supplemental Nutritional Assistance Program, which we attribute partly to procedural issues associated with the recertification process. Current recipients, who must complete a recertification interview by the end of their recertification month, are 9 percentage points less likely to recertify when assigned an interview date at the end rather than the beginning of the month. The majority of these cases “churn” back on the program shortly after suggesting that these discontinuations were likely not due to ineligibility. The effects are larger for long-term recipients and cases with children, characteristics associated with higher need.

Research documents low rates of enrollment among eligible recipients across a wide variety of programs, often citing under-awareness of program availability and eligibility rules as key barriers to take-up (Chetty, Friedman and Saez, 2013; Dahl, Løken and Mogstad, 2014). Several recent interventions demonstrate that informing likely-eligible individuals about program access leads to significant increases in enrollment (Armour, 2018; Barr and Turner, 2018; Bhargava and Manoli, 2015; Finkelstein and Notowidigdo, 2018; Goldin, Homonoff and Tucker-Ray, 2017). Similarly, automatic enrollment has been highly effective at increasing program participation (Madrian and Shea, 2001). In this paper, we turn our attention away from initial enrollment and toward another potential barrier to participation: program recertification.

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To ensure program integrity, recipients of all means-tested programs must document continued eligibility for the program through a periodic recertification process. For example, recipients of the Supplemental Nutrition Assistance Program (SNAP), the largest nutritional assistance program in the United States, must submit income documentation and complete a caseworker interview by the end of their certification period, usually every six to twelve months. A large fraction of recertification cases fail to recertify, but rejoin a short period later or “churn” (Mills et al., 2014) suggesting that recertification failure often occurs despite maintained eligibility.<sup>1</sup> SNAP churn has costs for both recipients and program administrators. For example, program participants lose essential benefits, while simultaneously increasing processing costs due to additional administrative workload associated with churn.

The low rate of recertification success among likely-eligible recipients is somewhat surprising even in spite of the existing literature on barriers to initial program enrollment. For example, awareness of a program’s availability is a key issue for program enrollment, but not for recertification. Similarly, individuals who have already applied for a program at least once are likely to have a better understanding of their eligibility and the application process than first time enrollees. Lastly, current participants have demonstrated a past preference for participation, while eligible but unenrolled individuals may have purposely chosen not to participate in the program for a variety of reasons such as stigma (Moffitt et al., 1983; Currie and Grogger, 2001). However, research from behavioral economics suggests that even small application costs can lead to large decreases in program participation (Bertrand, Mullainathan and Shafir, 2004; Mullainathan and Shafir, 2013).<sup>2</sup> This paper estimates the impact of administrative burden on recertification success by determining the effect of one seemingly trivial component of the recertification process: the initial recertification interview date assignment.

To successfully recertify for CalFresh (California’s SNAP program), recipients must complete a recertification interview by the end of the calendar month in which their certification period ends. While recipients may reschedule their interview for any point during the month, the CalFresh office

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<sup>1</sup>High rates of recertification failure are not unique to the SNAP program. For example, the Department of Education reported that in 2015, 57 percent of student loan borrowers who were enrolled in an income-driven repayment plan failed to recertify, experiencing large increases in their monthly loan payments.

<sup>2</sup>A related literature in the field of public administration demonstrates several instances in which administrative burden, conceptualized as a combination of learning, psychological, and compliance costs associated with interactions with government programs (Moynihan, Herd and Harvey, 2014), impacts program participation (Heinrich, 2015; Herd et al., Forthcoming).

assigns each case an initial interview date that is included in an appointment letter in their recertification packet. Specifically, these initial interview dates are *randomly assigned* across recipients with the same recertification month and staggered throughout the month to smooth caseworker workloads. Regardless of the assigned interview date, all recipients must complete the recertification process by the end of the calendar month. This means that recipients who are assigned a date at the start of the calendar month, and do not reschedule, have more than four weeks to complete their recertification requirements post-interview (such as compiling income documentation or rescheduling a missed interview), while others have as little as a few days.

To determine the effect of interview date on recertification and subsequent outcomes, we analyze a unique administrative data set from the San Francisco CalFresh office on the universe of recertification cases (roughly 41,000 cases) from November 2014 to November 2016. The data set contains information on recertification date, interview dates and outcomes (both initial and rescheduled), recertification outcome, and subsequent CalFresh reapplications for those who fail to recertify. This data allows us to examine how the timing of the administrative process affects both recertification and churn rates by comparing outcomes for those who were randomly assigned to early versus late initial interview dates.

First, we document an extremely high rate of recertification failure: only 48 percent of all cases successfully recertify. Using quarterly wage data from the Employment Development Department (EDD), we estimate that the vast majority of recertification cases are income-eligible, suggesting that most cases that fail recertification do so for reasons other than changes to eligibility. Consistent with this finding, we observe high rates of churn – almost half of cases that fail recertification successfully reapply for the program within the next 90 days with many re-entering the program within the first month after the recertification deadline.

Turning to the effects of interview assignment, our results demonstrate that the randomly assigned interview date has a large and significant impact on recertification success. We estimate that a one-day delay in the assigned interview date decreases the chances of successfully recertifying by one third of a percentage point. In other words, a case that has an initial interview on the 28th day of the month is 9.2 percentage points less likely to recertify than a case that has an initial interview scheduled on the first of the month – a 19 percent decrease in recertification success.

Using data on subsequent reapplications to CalFresh in the 90 days post-recertification, we then

consider the effect of interview date assignment on churn and longer-term discontinuances. We find that interview date assignment affects the churn rate in the opposite direction as the recertification rate. Each one-day delay in the interview date leads to a 0.30 percentage point increase in the likelihood of churning within 90 days of the end of the recertification period – an increase of 8.4 percentage points when comparing cases assigned to an interview at the end of the recertification month versus the first of the month (a 35 percent increase). Additionally, the likelihood of an eligible case being discontinued for at least one year post-recertification increases by 0.06 percentage points per interview day, an increase of 1.6 percentage points over the month (an 8 percent increase). These estimates are consistent with recent research demonstrating the effect of administrative hurdles on SNAP enrollment (Ganong and Liebman, 2018).<sup>3</sup>

The large negative impact of late interview date assignments on recertification is particularly surprising given that households can reschedule their appointment for any time during the recertification month. However, we find that only 3 percent of cases reschedule their interview prior to the assigned date. We estimate that roughly two thirds of the effect of interview assignment on recertification can be explained by differences in interview completion, reiterating that most of the effect is likely due to procedural issues, rather than differences in eligibility. However, we find that interview assignment has no impact on the likelihood of completing the *first* scheduled interview, suggesting that failure to complete an interview by the recertification deadline is not driven by differences in decision-making ability at different points of the calendar month (Carvalho, Meier and Wang, 2016), but rather is potentially caused by having fewer days to reschedule a missed interview. Additionally, we find suggestive evidence that participation in a voluntary text messaging program partially mitigates the effect of interview assignment on recertification success.

In terms of welfare implications, we find that the marginal case that fails recertification due to later interview assignment loses an average of almost \$500 in benefits in the year following recertification. This estimate is largely driven by cases that fail recertification and do not reenter the program, though we find significant benefit losses for cases that churn as well. Additionally, while interventions that increase initial SNAP applications lead to increases in processing costs

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<sup>3</sup>A related literature shows that shorter certification periods are associated with lower SNAP enrollment (Currie and Grogger, 2001; Kabbani and Wilde, 2003; Ribar, Edelhoj and Liu, 2008; Ganong and Liebman, 2018). In a slightly different context, Hastings and Shapiro (2018) use these certification periods as an exogenous source of variation in timing of exit from the SNAP program.

(Finkelstein and Notowidigdo, 2018), we show that increasing the recertification rate *decreases* processing costs in our context since administrative costs associated with cases that churn are up to twice as large as for cases that successfully recertify (Mills et al., 2014). This highlights important differences in the distribution of costs associated with recertification failure depending on the post-recertification outcome. Cases that remain off the program long term suffer large private costs in the form of missed benefits, but create no additional costs to program administrators. In contrast, cases that churn experience smaller private costs, but generate large administrative costs – in fact, the administrative costs of processing an additional churn case more than outweigh the cost of providing the prorated benefits missed by these same cases. We also find no evidence of a labor supply response to recertification failure and that over half of the long-term discontinued cases had no wage earnings at all in the year post recertification.

Our results contribute to a growing literature detailing instances in which administrative hassles lead to low rates of program participation (Sunstein, 2018). For example, increased application costs associated with local program office closures lead to significant decreases in participation in government programs such as WIC and disability insurance (Rossin-Slater, 2013; Deshpande and Li, 2019). Conversely, automatic enrollment, pre-population of application forms, and other types of application assistance significantly increase take-up of retirement savings programs, student financial aid, and nutritional assistance programs (Madrian and Shea, 2001; Bettinger et al., 2012; Finkelstein and Notowidigdo, 2018). A smaller literature on program recertification shows that reminders and flexibility in the recertification process can lead to higher rates of participation. For example, Castleman and Page (2016) find that text reminders to college freshman increase rates of FAFSA renewal. In the context of SNAP, Ganong and Liebman (2018) show that state waivers allowing for recertification interviews to take place over the phone as opposed to face-to-face are associated with increases in participation and Gray (2018) shows that online case management tools increase retention.

Our results also contribute to a literature examining the relationship between hassle costs associated with program participation and targeting efficiency. While standard models suggest that these application costs improve targeting efficiency (Nichols and Zeckhauser, 1982), behavioral models suggest that these costs are more likely to lead to failed recertification for the neediest households (Bertrand, Mullainathan and Shafir, 2004; Mullainathan and Shafir, 2013; Deshpande and Li, 2019).

We estimate the effect of the initial interview date assignment on recertification by case characteristics and find that the effects of interview assignment are largest for cases with children, cases with higher benefit amounts, and cases that have received CalFresh benefits for 5 or more years. These results are consistent with a model in which application costs screen out *more* needy households in line with several prior empirical findings on heterogeneity in response to barriers to program take-up (Currie and Grogger, 2001; Bhargava and Manoli, 2015; Deshpande and Li, 2019), while standing in contrast to others (Alatas et al., 2016; Finkelstein and Notowidigdo, 2018).

This paper is organized as follows. Section I reviews the institutional background on SNAP recertification and churn. Section II describes the CalFresh recertification process and interview random assignment. Section III describes the data sources used in the empirical analysis. Section IV presents estimates of the impact of initial interview date assignment on recertification and subsequent outcomes. Section V discusses possible mechanisms. Section VI estimates costs and benefit losses associated with later interview date assignments. Section VII concludes.

## I. Institutional Background

The Supplemental Nutritional Assistance Program (SNAP) is the largest nutritional assistance program in the United States, serving over 42 million individuals at an annual cost of \$69 billion (Congressional Budget Office, 2018). The program provides monthly food vouchers to low-income households via Electronic Benefits Transfer (EBT) cards with an average monthly benefit of \$126 per person (CBPP, 2018). The program is federally funded but administered by the states who are responsible for determining eligibility and distributing benefits.

SNAP is a means-tested program meaning that all recipients are subject to income eligibility requirements determined by the state.<sup>4</sup> To ensure that individuals receiving SNAP are eligible for program benefits, recipients must complete a recertification process at the end of each certification period. Certification periods are typically between six and twelve months long, though the exact length varies by state and household composition.<sup>5</sup> Additionally, Able-Bodied Adults Without

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<sup>4</sup>In California, eligibility requirements are based on two income tests: gross household income must be below 200% of the federal poverty line (FPL) and net income must be below 100% FPL. However, many households are only subject to the gross income test including those with only 1-2 member or recipients of other means-tested programs such as Temporary Assistance for Needy Families (TANF). Additionally, elderly or disabled individuals are also subject to slightly less restrictive eligibility requirements.

<sup>5</sup>For example, households in which all residents are either elderly or disabled may receive a longer certification

Dependents (ABAWD) may be subject to work requirements to maintain eligibility.<sup>6</sup>

To successfully recertify, households must complete the following three steps in any order by the end of the recertification period. First, households must fill out and submit a recertification application. This form elicits detailed information on household composition, income, and expenses to determine eligibility and benefit amount. Second, households must complete a scheduled interview – either in-person or over the phone – with a SNAP caseworker. Finally, households must submit documents (e.g., pay stubs) to verify income and other household circumstances described in the recertification application.

While the goal of the recertification process is to ensure program integrity, an unintended consequence of this requirement is that eligible households may fail to complete one or more of the recertification steps above leading to temporary or longer-term discontinuation of benefits. A recent USDA report estimated the proportion of SNAP households who exit the program but successfully rejoined within the next four months and found a churn rate between 17 and 28 percent across six states (Mills et al., 2014). The study also found that the vast majority of program churn – roughly three quarters or more in five of the six states studied – occurred during months in which households were required to recertify for the program or submit interim reporting. The study concluded that high rates of churn were largely due to procedural issues with the administration of SNAP, especially those concerning the recertification process.

Program churn carries substantial costs for both program administrators and recipients. Participants lose benefits for the days between the end of the certification period and the date of successful reapplication – a household of four could lose up to \$200 in benefits each week. Additionally, Mills et al. (2014) estimates that the administrative costs associated with cases that churn, such as increased caseworker contact hours, are up to twice as large as for cases that successfully recertify.<sup>7</sup>

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period of up to 24 months, though the state agency must have contact with the household at least once every twelve months. Conversely, households with “unstable” circumstances who are determined to likely to become ineligible in the near future may be assigned to certification periods as short as one month.

<sup>6</sup>ABAWDs, defined as individuals between the ages of 18 to 49 who are unemployed but not disabled and who do not have any dependent children, are limited to three months of eligibility in any given 36-month period or subject to work requirements. Importantly for this paper, all counties in California operated under a waiver of the ABAWD work requirements for the duration of our study period.

<sup>7</sup>In San Francisco’s SNAP offices, for example, an internal study estimated that 12 percent of all case work is spent processing churn cases.

## II. CalFresh Recertification and Interview Assignment Process

In 2016, CalFresh – California’s SNAP program – served over two million households at an annual cost of seven billion dollars. The majority of CalFresh recipients must recertify for the program every twelve months.<sup>8</sup> Households must submit the recertification application, along with accompanying income verification, and complete an interview with a CalFresh caseworker. While we will show that the requirement to complete an interview may serve as a barrier to recertification, the intention of the interview is to provide a touchpoint for cases to receive assistance from caseworkers in completing their recertification form and collecting the verification documentation.

The timing of the recertification process is as follows. Consider a case whose certification period ends in June 2016. All certification periods end on the last day of the calendar month so in our example, recertification must be complete by June 30, 2016. The recertification process begins with a Notice of Expiration of Certification (CF-377.2) which is generated and sent to all households 45 days before the end of the certification period (on May 15, 2016 in our example). This notice informs households that the end of their certification period is approaching, briefly details the recertification steps, and informs them that they will be receiving a detailed recertification packet and interview assignment in the mail.<sup>9</sup> Households that have opted in to receive text or email updates also receive a communication within the next few days informing them that their certification period is ending. Case workers then assign each case an initial interview date to take place within the first four weeks of June. Around the third week of May, case workers send out the Recertification, Reauthorization, and Renewal (RRR) packets.<sup>10</sup> These packets contain the recertification form (CF-37), an interview appointment letter (CF-29C), and several other unrelated forms (such as voter registration forms).<sup>11</sup>

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<sup>8</sup>Additionally, most households in California must complete a shorter semi-annual report called the SAR-7. Unlike the annual recertification, this interim reporting requirement does not include a caseworker interview, hence we focus only on annual recertification cases in this paper.

<sup>9</sup>See Appendix Figure 1-3 for an example of this form and other forms used in the CalFresh recertification process.

<sup>10</sup>Almost three quarters of the packets in our sample were sent between the 17th and 23rd of the month prior to the end of the certification period. While there is no formal policy regarding the order in which these packets are sent out, discussions with CalFresh caseworkers suggested that packets for cases assigned to early interview dates were distributed earlier than those with later interview dates – indeed, our data reveals that cases assigned to interview dates in the first two weeks of the month were sent their packet an average of 2.5 days earlier than cases assigned to interviews in the third and fourth weeks (see Appendix Figure 4 for a distribution of sent dates for early versus late interview dates). While these differences are small, we include specifications that control for packet sent date.

<sup>11</sup>Households must provide detailed information on the income and expenses for all household members, along with income verification, for the calendar month prior to the end of the certification period (May 2016 in our example). See <http://www.cdss.ca.gov/cdssweb/entres/forms/English/CF37.pdf> for a copy of the Recertification, Reauthorization, and Renewal form.

The appointment letter contains information on the initial interview date assignment, the time of day (either morning or afternoon), and whether the appointment is a phone or in-person interview.<sup>12</sup> The letter also provides information on how to reschedule the interview if the assigned time or date is inconvenient for the recipient. Recipients may reschedule their interview or complete an on-demand walk-in interview at the CalFresh offices at any time during the recertification month.<sup>13</sup> If an interview is missed or not completed, households receive a notice of missed interview (CF-386) and a voicemail instructing them to contact a case worker to reschedule their interview before the end of their certification period.

In San Francisco, the county in which our study takes place, program administrators *randomly assign* the initial interview date which is included in the appointment letter, staggering the interviews throughout the recertification month to smooth caseworker workload. The interview assignment process is as follows. Caseworkers are given the full list of CalFresh cases whose certification period ends in the following month. These cases are then grouped by case language and appointment type (phone or in-person).<sup>14</sup> Cases are then sorted within group by Case ID number and, subsequently, caseworkers repeatedly append the list of available interview dates<sup>15</sup> to cases until all cases are assigned an initial interview date.<sup>16</sup>

Figure 1 presents a graph of the distribution of initial interview dates for the recertification cases in our study population (described in Section III). The distribution is approximately uniform across the first three weeks of the month with fewer interviews scheduled after the 23rd of the month. This is largely due to the fact that interviews were not scheduled after the 24th during the first few

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<sup>12</sup>Cases that provided a phone number on the initial CalFresh application or subsequent case updates are assigned phone interviews; all other cases are assigned an in-person interview at the local CalFresh office.

<sup>13</sup>Administrators at the CalFresh offices in San Francisco report that all cases that place a request to reschedule before the end of the certification period are granted a rescheduled interview, even on the last day of the recertification month.

<sup>14</sup>The San Francisco CalFresh office offers interviews in six languages: English, Spanish, Chinese (Cantonese and Mandarin), Vietnamese, Tagalog, and Russian. Unsupported languages are served by staff without multilingual skills, using external translation services.

<sup>15</sup>The list of available interview dates excludes weekends, holidays, and the last two days of the calendar month with fewer interviews scheduled on the first day of the month to address increased call volumes associated with discontinuation of benefits. In-person interviews do not meet on Fridays. Lastly, the list adjusts for non-major language (Vietnamese, Tagalog, and Russian) caseworker availability.

<sup>16</sup>In three months of our study period, the interview process deviated slightly from the process described above. Specifically, rather than repeatedly appending the list of dates to the list of sorted Case IDs (which yields no correlation between interview day and Case ID), from June to September of 2015, cases with low ID numbers were assigned early interview dates while cases with high ID numbers were assigned to the later dates. While Case ID is not a meaningful variable in and of itself, it is correlated with the date on which the case first joined a California Human Services Agency assistance program; therefore, our regressions control for a rank ordering of Case ID. The inclusion of this variable or, alternatively, the exclusion of these months does not substantively alter our results.

months of our study period, but also partly due to a larger number of holidays falling at the end of the calendar month.

Regardless of when a case’s initial interview is scheduled, all households must complete the recertification process by the last day of the calendar month of their certification period. While interviews can be rescheduled for any time within the recertification month, only 3 percent of households reschedule their interview prior to the randomly assigned interview date. Therefore, most households that are assigned an initial interview date at the beginning of the month have over four weeks post-interview to complete the process – for example, to reschedule a missed interview, fix errors in the recertification application, or gather valid income verification – while cases that are assigned an interview at the end of the month may only have a few days.

### III. Data

Our sample population is comprised of the universe of CalFresh cases in San Francisco County scheduled for recertification between November 2014 and November 2016.<sup>17</sup> The core sample of recertification packets includes 45,952 recertification events for 34,360 unique households. The data include the case’s recertification month and the date the recertification packet was sent which are then merged with data on whether or not recertification was successful or whether the case was discontinued from the program. We then combine our sample with data containing information on all interviews scheduled with the CalFresh office, including both interviews initially assigned by the CalFresh office as well as interviews that were rescheduled by the program participant. Importantly, the data set also includes the date on which the interview was assigned, allowing us to determine the randomly assigned initial interview date. The data include the date and time of all scheduled interviews and whether the interview was successfully completed. We also obtain data on all walk-in appointments, as cases can complete an on-demand interview by visiting a CalFresh office. Records on the submission of recertification forms and verification documents, such as income verification documents were not available.

We exclude recertification cases that were inconsistent with administrative guidelines for schedul-

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<sup>17</sup>We focus on households that are current CalFresh recipients but that are not currently receiving CalWorks, California’s TANF program. We make this data restriction since the recertification interview assignment process differs for those cases in order to better align the recertification process for the two programs.

ing interviews. For example, we exclude cases that were sent a recertification packet but were not assigned a caseworker interview,<sup>18</sup> as well as cases in which the first interview was assigned in the recertification month or before the 13th of the month prior to the end of the recertification month.<sup>19</sup> We also drop cases that were not conducted in one of the three major case languages in San Francisco (English, Spanish, and Chinese), since the interview assignment process is constrained by staff availability for non-major languages. Finally, we exclude a small number of cases whose interviews were scheduled less than seven days after the recertification packets were sent. This leaves us with a final sample to 41,082 recertification cases across 31,174 unique households.

To examine the effect of initial interview date assignment on post-recertification outcomes, we merge our sample to data on all subsequent CalFresh applications through October 2017. This data allows us to follow the recertification cases in our sample for a year after the end of the certification period. From this data, we are able to determine whether a case that failed recertification rejoined the program within the following months (i.e., churned), or if the recertification process ended in a longer-term discontinuance from the program.<sup>20</sup>

To estimate whether each case met the income requirements for recertification, we use administrative data from the Employment Development Department (EDD). This data set contains individual wage earnings information in each quarter provided by employers for all individuals associated with a CalFresh case for a year after the end of the certification period.<sup>21</sup>

We obtain detailed demographic data on the case and the head of household. These data include information that is required as part of the initial CalFresh application process and is updated through prior recertifications or semi-annual reporting such as household size, number of children, and zip code. The data also contains information from administrative sources on each case's CalFresh participation history including the number of days the household had been on SNAP, the initial

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<sup>18</sup>The majority of these (roughly 1,800) cases occurred during the first six months of our sample period during a time when recertification interviews were waived for households in which all adults are elderly or disabled without income (<http://www.cdss.ca.gov/lettersnotices/EntRes/getinfo/acl/2013/13-58.pdf>).

<sup>19</sup>Recertification interviews occur in the recertification month, but are typically scheduled around the 15th of the prior month. Deviations from this schedule suggest that the interview assignment may not have followed the typical random assignment process.

<sup>20</sup>We do not have data on Inter County Transfers (ICTs), i.e., cases that are discontinued in San Francisco, but successfully reapply to CalFresh in a different county. However, calculations from the California Department of Social Services (CDSS) suggest that only 2 percent of cases that exit CalFresh in San Francisco in a recertification month appear on CalFresh in a different county the following month.

<sup>21</sup>CalFresh caseworkers have access to this data source, but the data is provided with a lag and so EDD data is not used as part of the recertification intake process to assess eligibility.

enrollment date, and the current monthly benefit amount. The data also include information about the head of household including date of birth, gender, ethnicity, and citizenship status.

Lastly, we collected data on receipt of text and email communications sent to households that opted in to this voluntary program. While these communications were used throughout our study period, San Francisco only began collecting individual-level data on texts and email for recertification cases due in October 2015 and after.

## **IV. Results**

### **A. Descriptive Statistics**

#### **i. Demographics and Randomization Checks**

Table 1 presents summary statistics of the demographics of our study population. Since our study focuses on the county of San Francisco – a large, urban city – a few characteristics of our population are worth comparing to the population of SNAP households nationwide. First, the average size of the households in our population is somewhat smaller than the average SNAP household – 1.6 people versus the national average of 2.0 people. Relatedly, just under one third of households in our sample had any children, while 43 percent of SNAP households have at least one child nationwide. San Francisco SNAP households are more racially diverse (with an especially high proportion of Asian heads of household), more likely to be headed by a non-US citizen, and more likely to receive the maximum SNAP benefit than SNAP households nationwide (FNS, FY2015).

Columns 2 and 3 of Table 1 present means of the same demographic characteristics for cases with early initial interview dates (between the 1st and 13th of the month) versus late interview dates (between the 14th and 29th of the month), respectively. The average demographic make-up of households initially assigned to early versus later interview dates are quite similar. Column 4 presents results from a test for equality of means between these groups and shows that the differences for most characteristics are small and not statistically significant, suggesting that interview date assignment was not correlated with observed case demographics. Two exceptions are citizenship and long-term CalFresh receipt – cases assigned to interview dates later in the month were slightly more likely to be US citizens and long-term CalFresh recipients than those assigned to earlier dates;

however, these differences disappear when controlling for the randomization characteristics (month, interview type, case language, and case ID order).

## ii. Recertification Outcomes

Table 2 presents summary statistics on various outcomes related to the recertification process. We observe a very high rate of recertification failure – only 48 percent of cases successfully recertified. While this may suggest that half of the cases were no longer eligible for CalFresh, data on post-recertification outcomes suggests that this might not be the case for at least a portion of our cases. We find that over half of cases that fail recertification reapply for CalFresh within the next 90 days and that the vast majority of these reapplications (93 percent) are approved, yielding a 90-day churn rate of 46 percent. In other words, roughly one quarter of the cases in our sample failed recertification, but were deemed eligible for the program within the following months.

Nonetheless, it may be that CalFresh recipients experience high levels of income volatility, which could lead to high rates of recertification failure followed by subsequent successful reapplications shortly after exiting the program. However, Figure 2 provides evidence against a story in which fluctuating eligibility is the main driver of the high observed churn rate. This figure shows that 78 percent of cases that churn within 90 days of recertification do so within the first month, many within the first week.

While it is possible that these cases were ineligible for CalFresh in their recertification month but became eligible again in the following weeks, a potentially more plausible story is that these cases failed recertification due to procedural issues such as by failing to complete a caseworker interview or to submit sufficient income verification by the recertification deadline. For example, the data suggests that only 76 percent of recertification cases successfully completed a caseworker interview. Section IV.C provides additional evidence that suggests that a substantial fraction of the 22 percent of cases that fail to recertify and remain off the program for at least one year (“long-term discontinuances”) appear to have maintained program eligibility, once again suggesting that procedural issues may have impacted the recertification success of many of the cases in our sample.

## B. Effect of Interview Assignment on Recertification

The statistics in Table 2 show that recertification success rates are very low, with one possible explanation being that elements of the administrative process of recertification may be difficult for participants to complete. This section looks at the effect of one of the components of the recertification process – the initially assigned interview date – to determine its effect on recertification success.

Figure 3 plots the relationship between the recertification success rate and the initial interview day assignment. Cases assigned to an initial interview on the first or second of the month have a recertification rate of 51 percent, while cases assigned to interview dates on the last two possible assignment dates have only a 44 percent recertification rate. The figure suggests that this gap in recertification success is not solely driven by cases assigned to interviews at the very end of the month, but rather there is an approximately linear downward trend in the probability of recertifying.

We use the following econometric model to estimate the impact of initial interview day assignment on recertification:

$$Y_{it} = \alpha + \gamma \text{InterviewDay}_{it} + \beta x_i + \theta z_i + \delta_t + \varepsilon_{it} \quad (1)$$

where  $Y_{it}$  is an indicator for whether a case successfully recertified,  $\text{InterviewDay}_{it}$  is the randomly assigned interview calendar day,  $x_i$  is a vector of case characteristics used in the randomization process,  $z_i$  is a vector of demographic characteristics, and  $\delta_t$  are recertification month fixed effects.<sup>22</sup>

Table 3 presents the results. Column 1, which includes no controls, suggests that a one-day delay in the initially assigned interview reduces the likelihood of recertifying by 0.30 percentage points. Column 2 includes recertification month fixed effects and column 3 adds case characteristics used in the interview randomization process (e.g., case language); the inclusion of these controls increases our coefficient of interest to -0.35 percentage points. Column 4 – our preferred specification – includes additional household demographic controls and finds that a one-day delay in the initially assigned interview reduces the likelihood of recertifying by 0.33 percentage points. This implies that a case that is assigned an initial interview on the 28th of the month is 9.2 percentage points less

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<sup>22</sup>Case characteristics are case language, interview type (in-person versus phone), and a rank ordering of Case ID. Demographic controls include case-level characteristics such as household size, presence of children, and time on the program (years since initial CalFresh application and an indicator for receiving CalFresh for 5 or more years), as well as head-of-household characteristics including sex, age, race, and citizenship.

likely to recertify than a case assigned an interview on the first of the month – a 19 percent decline in recertification success off the mean.

We perform a few additional robustness checks on our specification. Almost 10,000 cases had multiple recertifications during our sample period. Since initial interview assignment is independent across years, we can identify the effect of interview assignment on recertification within case by including household fixed effects. Column 5 reports these results and shows that the inclusion of these fixed effects imply a slightly more pronounced relationship between initial interview day assignment and recertification success: each one-day delay in assigned interview leads to a 0.43 percentage point decrease in the likelihood of recertifying. While it is encouraging that our estimates are robust to the inclusion of household fixed effects, it is important to note that to appear twice in our data set, a case must have eventually successfully recertified. Therefore, these estimates should not necessarily be interpreted as the effect of interview assignment for the overall population.

As mentioned in Section II, we observe a correlation between interview assignment and the recertification packet sent date: cases with assigned interviews in the first half of the recertification month receive their recertification packets an average of 2.5 days earlier than those with interview dates assigned in the second half of the month. Column 6 controls for the day on which the recertification packet was sent to the household and shows only a small decrease in the effect of interview assignment relative to column 4.<sup>23</sup>

Lastly, to account for potential non-linearities in the effect of interview day on recertification success, column 7 presents results from the following specification:

$$Y_{iwt} = \alpha + \sum_{w=2}^4 \theta_w \text{InterviewWeek}_{iwt} + \beta x_i + \gamma z_i + \delta_t + \varepsilon_{iwt} \quad (2)$$

where  $\text{InterviewWeek}_{iwt}$  indicates that household  $i$  in recertification month  $t$  was assigned an initial interview in calendar week  $w$  where  $w \in \{2, 3, 4\}$ .<sup>24</sup> The results confirm that the likelihood of recertifying monotonically decreases with interview date assignment. Cases with initial interviews in the second, third, and fourth weeks of the month are 1.1, 3.7, and 7.0 percentage points less

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<sup>23</sup>Since the packet sent date was not separately randomly assigned from the interview date, we do not include it in our main specification. Therefore, to the extent that receiving a recertification packet earlier increases recertification success, our estimates should be interpreted as the effect of receiving an earlier interview date combined with receiving a recertification packet a few days earlier on average.

<sup>24</sup>This specification excludes the 335 recertification cases that were assigned an initial interview date on the 29th. Including them in the fourth interview week does not qualitatively change our results.

likely to recertify relative to cases with initial interviews in the first week of the month. These estimates are not only statistically significantly different from the recertification rate of those with initial interviews in the first week, but they are also significantly different from each other.

### **C. Effect of Interview Assignment by Eligibility**

The results in Table 3 show that later interview date assignments lead to large decreases in the likelihood of recertification. However, our interpretation of these results for policy depends on whether those who fail to recertify due to later interview assignments are actually ineligible for benefits. Kleven and Kopczuk (2011) suggest that when there is incomplete information about a participant’s eligibility for a program, application complexity can serve as an important screening device to reduce false awards (type II errors) which may be justified even when this complexity contributes to incomplete take-up among eligible recipients (type I errors). While CalFresh caseworkers have access to payroll data from some large employers at the time of intake, this source is not verified upon receipt so cannot be used without verifying that income independently. Therefore, additional program “complexity” – defined in our scenario as later initial interview dates – could serve as an efficient screening mechanism.

In this section, we estimate the effect of the assigned interview date on recertification by our estimate of eligibility. This analysis is similar in spirit to Deshpande and Li (2019) who estimate the change in targeting efficiency associated with Social Security Administration office closures. They find that office closures, which increase the cost of disability program application, lead to fewer disability applications (10 percent), but an even larger decrease in enrollment (16 percent), suggesting that office closures disproportionately discourage applications from individuals who would have been accepted to the program had they applied. A key issue when estimating targeting efficiency in initial program applications is that researchers do not have data on the population of potential applicants, only those who actually apply. In contrast, in our setting, we know the entire population of potential recertifiers. Therefore, we can directly estimate eligibility of all cases that are up for recertification to determine the effect of assigned interview date on the two types of errors.

To estimate eligibility of the cases in our sample, we use quarterly wage earnings data from the Employment Development Department (EDD). As mentioned in Section I, to qualify for CalFresh,

all households must have gross income below 200 percent FPL<sup>25</sup> in the month prior to the recertification month.<sup>26</sup> Table 4 shows that the vast majority of cases in our sample appear eligible for the CalFresh program. Specifically, column 1 shows that 94 percent of recertification cases have average monthly wage earnings below the CalFresh gross income limit in the recertification quarter. One main limitation of using this data to estimate eligibility is that it only includes wage income, but not other types of income, such as self-employment income.<sup>27</sup> Because of this data limitation, we calculate two more conservative measures of eligibility: the proportion of cases with wage earnings below 130 percent FPL and the proportion of cases with no wage earnings at all. We find that 87 percent of cases have earnings below 130 percent FPL and two thirds of the sample has no wage income at all.<sup>28</sup>

Columns 2 through 4 repeat these estimates for cases that recertified, churned within 90 days, and were discontinued from the program for 90 days or more, respectively. We find very high eligibility rates among cases that recertified (98 percent). Eligibility estimates for cases that churned are slightly lower, but quite similar to those that recertified. However, what is most surprising are the eligibility estimates for the long-term discontinued group. Of the 22 percent of cases that were discontinued and did not reenter the program for at least twelve months, 85 percent have average monthly wage earnings below the program’s income limit in the recertification quarter and 58 percent have no wage earnings at all.

Due to the high rates of eligibility among cases that did not recertify, the type I error rate (i.e., the likelihood that a case fails recertification in spite of being eligible) is quite high: 46.8 percent of cases that fail to recertify appear eligible.<sup>29</sup> In contrast, the type II error rate (i.e., the likelihood

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<sup>25</sup>The CalFresh gross income limits as on October 1, 2016 are available here: <http://www.cdss.ca.gov/foodstamps/res/pdf/PUB464Eng.pdf>. While a portion of our sample is also subject to a net income test, this test does not apply to households with less than three members (85 percent of our sample). Additionally, due to the high rent in San Francisco, the net income test is less likely to be binding as a result of these earnings disregards.

<sup>26</sup>Our wage data is quarterly while the income verification period is monthly; therefore, we approximate monthly earnings by assuming constant income throughout the quarter of recertification.

<sup>27</sup>Data on current CalFresh recipients in San Francisco suggests that only 3 percent of cases report self-employment income.

<sup>28</sup>Since we do not observe changes to a case’s household composition if they do not recertify, we may over- or underestimate eligibility, depending on if the case gained or lost a household member since their semi-annual report. As a conservative test, we recalculate our eligibility estimates assuming that all cases with more than one member lost a household member. We find that this assumption has only a small effect on our eligibility estimates – 92 percent of cases appear eligible.

<sup>29</sup>These findings are consistent Gray (2018) who finds high rates of program exits among likely-eligible recipients using similar administrative wage data.

that a case successfully recertifies in spite of being ineligible) is rather low: only 1.4 percent of cases appear ineligible but successfully recertify.<sup>30</sup>

Table 5 uses the econometric model in equation (1) and eligibility estimates from row 1 of Table 4 to estimate the effect of interview date assignment on type I and type II errors. As may be expected from the high eligibility rate, the effect of interview day assignment on the type I error rate is nearly the exact mirror of the effect on recertification success in Table 3: a one-day delay in initial interview assignment leads to a 0.35 percentage point increase in the likelihood of a type I error. However, column 2 shows that later interview dates also lead to a small but significant reduction in type II errors: the likelihood that a case successfully recertifies in spite of appearing ineligible decreases by 0.02 percentage points per interview day delay. Taken together, while the increase in failed recertifications among cases that appear eligible is an order of magnitude larger than the reduction in successful recertifications among cases that appear ineligible, the results still present a trade-off between the two types of errors.

#### **D. Reapplications, Churn, and Long-term Discontinuance**

The costs of recertification failure induced by interview date assignment depend on if and when the cases that failed recertification rejoin the program. This section uses data on applications to CalFresh in the months following recertification to determine the effect of interview date assignment on post-recertification outcomes. Table 6 presents the results from the model described in equation 1. Columns 1 through 3 present estimates of the effect of interview day assignment on reapplications, application approvals, and long-term discontinuances. Columns 4 through 6 present these same outcomes, but condition the outcome on our estimate of recertification eligibility from row 1 of Table 4.

Column 1 presents estimates of the impact of interview day assignment on the likelihood of reapplying within 90 days of the recertification deadline. These are cases that fail to recertify, but reapply for the program within a few months of being denied. The results show that for each one-day delay in the initial interview date, cases are 0.30 percentage points more likely to reapply

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<sup>30</sup>It is also important to point out differences in the verification of type I versus type II by CalFresh caseworkers. Specifically, caseworkers are not able to approve cases that appear eligible, but fail to submit income verification or complete an interview; however, they are able to investigate cases whose income verification documentation is at odds with earnings estimates of third-party reporting. Therefore, it is quite possible that we are overestimating the prevalence of type II errors.

for CalFresh within 90 days. Given that Table 3 shows that a one-day delay in initial interview assignment decreases the likelihood of recertifying by 0.32 percentage points, this suggests that the majority of households that fail recertification due to interview date assignment reapply shortly thereafter. Additionally, the majority of these reapplications were successful. Column 2 considers the effect of interview date assignment on whether a case churned. We find that the 90-day churn rate also increases by 0.30 percentage points per interview day delay. In other words, cases assigned an initial interview day on the 28th are 8.4 percentage points more likely to churn than a case with an interview day on the first of the month – a 35 percent increase. Columns 4 and 5 repeat these analyses but condition the outcome of interest on whether a case appeared eligible for recertification and show that the results are largely unchanged.

While the results above show that the CalFresh program experiences a very high reapplication rate in the months after recertification, just under half of cases that failed recertification do not reenter the program within the year following recertification. More importantly, Table 4 shows that the majority of these cases appear to have maintained eligibility for the program. Eligible cases that fail recertification and do not reapply – either due to confusion about their own eligibility or due to the costs associated with the reapplication process – may miss out on substantial benefits (roughly two thirds of our sample receives the maximum monthly benefit of \$194 per person). Column 3 considers the effect of interview date assignment on long-term discontinuances from the program. We find that interview date assignment had a small but not statistically significant effect on long-term discontinuances. However, when we condition on eligibility in column 6, we find slightly larger and statistically significant effects: each interview day delay leads to a 0.06 percentage point increase in the likelihood of being discontinued from the program for at least a full year post recertification in spite of appearing eligible at recertification. This suggests that cases that appear to be recertification-eligible that are assigned to an initial interview date on the first of the month are 1.6 percentage points less likely than a similar case assigned to an interview on the 28th to fail recertification and remain off the program for at least a year – an 8 percent decrease.

### **E. Effect of Interview Assignment by Case Characteristics**

Section IV.C shows that the rate of recertification failure among eligible cases increases with assigned interview day delay with only a small corresponding decrease in the rate of recertification success

among ineligible cases. A second and related question is whether the effect of later interview date assignment varies based on demographic characteristics associated with higher marginal utility from recertification. In this section, we estimate the effect of the assigned interview date on recertification by case characteristics that are likely to be associated with need.

Nichols and Zeckhauser (1982) present a model in which hassles associated with program application (or in our case, recertification) can improve program targeting by screening out high-ability individuals or those with lower marginal utility from program benefits (who may be either eligible or ineligible) since these individuals have a higher opportunity cost of time. Alatas et al. (2016) finds empirical support for this theory: in-person application for a conditional cash transfer program in Indonesia led to better targeting efficiency relative to automatic enrollment. Closely related to our context, Finkelstein and Notowidigdo (2018) find that information about application assistance for SNAP increased take-up, but reduced targeting efficiency – enrollees receiving application assistance were more likely to receive lower monthly benefits and were in better health than those in the control group. In contrast, Deshpande and Li (2019) present an alternative version of the model in Nichols and Zeckhauser (1982) in which application costs are negatively correlated with ability. They show that if application costs are related to cognitive costs, rather than time costs, then the results reverse and application costs worsen targeting efficiency. Several papers show empirical support for this model: Currie and Grogger (2001) find that single-parent households are disproportionately affected by shorter SNAP recertification periods, Bhargava and Manoli (2015) show that simplifying EITC notices increases take-up among the very poor, and Deshpande and Li (2019) find that program office closures lead to disproportionately large decreases in applications for disability insurance from low-education applicants and those with moderately severe conditions. These empirical findings are also consistent with literature from behavioral economics which suggests that poverty or other forms of scarcity increase cognitive load leading to difficulties making financial decisions (Bertrand, Mullainathan and Shafir, 2004; Mullainathan and Shafir, 2013).

We estimate heterogeneity in the effect of interview date assignment by interacting *InterviewDay* from equation (1) with case characteristics plausibly associated with need. Specifically, our model takes the following form:

$$\begin{aligned}
Y_{it} = & \alpha + \gamma \text{InterviewDay}_{it} * \text{CaseCharacteristic}_{it} + \eta \text{InterviewDay}_{it} \\
& + \mu \text{CaseCharacteristic}_{it} + \beta x_i + \theta z_i + \delta_t + \varepsilon_{it}
\end{aligned}
\tag{3}$$

where  $Y_{it}$  is an indicator for recertification success,  $\text{InterviewDay}_{it}$  is the randomly assigned interview calendar day,  $\text{CaseCharacteristic}_{it}$  is a characteristic of the recertification case (including presence of children, long-term SNAP receipt, language, and benefit amount),<sup>31</sup>  $x_i$  is a vector of case characteristics used in the randomization process,  $z_i$  is a vector of additional demographic characteristics, and  $\delta_t$  are recertification month fixed effects.

Table 7 presents the results of this analysis separately by case characteristic subgroup. Column 1 shows that the effects of interview date assignment on recertification success is almost twice as large for households with children versus those without children. Specifically, for each one-day delay in interview day assignment, households with children are 0.46 percentage points less likely to recertify, while households without children are only 0.26 percentage points less likely to recertify. We find similar effects for cases that have been on CalFresh for more than 5 years – the effect of later interview assignments on recertification success for long-term CalFresh recipients is roughly 50 percent larger than for cases that have received CalFresh for fewer than 5 years. We find that households with higher monthly benefit amounts are more likely to be affected by interview assignment (column 3), though no effect on the likelihood of receiving the maximum benefit amount (column 4). The direction of the point estimate suggests that interview assignment has a larger impact on cases that report a primary language other than English (column 5), though we cannot statistically distinguish the effect of interview day on recertification success for English-speaking versus non-English speaking households.<sup>32</sup>

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<sup>31</sup>These characteristics are estimated based on information provided to the CalFresh offices as of the last reporting period (most likely at the semi-annual reporting period six months prior to the recertification month).

<sup>32</sup>We focus on case-level characteristics in Table 7, but additionally perform the same analysis for characteristics of the head of household. We find no differences in response to interview assignment by head of household race, gender, age, or citizenship.

## V. Mechanisms

### A. Interview Completion

One pathway by which interview assignment impacts recertification success is through interview completion. Cases with earlier interview date assignments may be more likely to complete their initial appointment for a variety of reasons. For example, they may be more likely to remember their appointment date if the appointment is scheduled closer to the receipt of their recertification packet. Alternatively, research shows cognitive ability and decision-making worsens when individuals are cash-poor (Spears, 2011; Mani et al., 2013) and that cognitive biases, such as present bias, are more prevalent just before payday relative to just after (Carvalho, Meier and Wang, 2016). Since the early interview dates take place at the beginning of the calendar month – a time when many individuals receive their paycheck – it may be the case that households are more able to complete their first interview if it is scheduled on a date shortly after payday. Alternatively, cases that miss their initial interview appointment may have time to reschedule for another date before the end of the certification period if their original interview date was early in the month, while cases with later assignments may be unable to find an alternative interview date before the recertification deadline. This second mechanism would suggest that assignment date would impact the likelihood of completing *any* interview, but would not necessarily have an impact on completion of the *first* interview.

To investigate these two possible mechanisms, Table 8 estimates the effect of initial interview date assignment on the likelihood of completing the first interview assignment and the likelihood of completing any interview before the recertification deadline.<sup>33</sup> Column 1 shows a positive but not statistically significant effect of interview day assignment on completing the first interview. In contrast, column 2 shows that a one-day delay in interview assignment is associated with a 0.22 percentage point decrease in completing any interview by the recertification deadline. So while cases assigned to late interviews are no more likely to miss their initial interview, our results on completion of any interview suggest that the ability to reschedule a missed appointment may play a significant role in completing this step of the recertification process.

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<sup>33</sup>For most cases, the first appointment is their initial interview assignment. However, for the three percent of cases that rescheduled their interview prior to the initially scheduled date, this outcome considers that rescheduled appointment instead.

It is important to note that while the effects of interview assignment on recertification success can be partially explained by interview completion, they cannot explain the whole story. Table 8 shows that a one-day interview delay is associated with a 0.22 percentage point decrease in completing an interview, while Table 3 shows a 0.32 percentage point decrease in recertification success. While we do not have data on income verification or submission of the recertification application, our results suggest that just under a third of the effect of interview day assignment on recertification is due to failure of one of these other components of the recertification process.

## B. Reminders

One potential mechanism through which early interview assignments may affect recertification outcomes is by serving as a reminder to households that the end of their certification period is approaching. A large literature in behavioral economics has explored how reminders can be effective in “nudging” individuals to overcome biases such as inertia and procrastination. For example, Castleman and Page (2016) find that text reminders about the need to renew financial aid lead to an increase in FAFSA renewals.

In our context, households who are up for recertification may put off starting the recertification process until closer to the end of the certification period or may have forgotten that they need to recertify altogether. While all cases are sent their recertification packets well in advance of the period end, households who do not review the materials carefully may miss key deadlines. For these households, assigned interview appointments may serve as a reminder about the process with earlier appointments allowing for more time to complete the recertification steps (such as rescheduling a missed interview or collecting income verification documents). Importantly, these appointments serve as a reminder regardless of the outcome of the interview – successful interviews involve taking a call from a CalFresh case worker while missed interviews result in a voicemail and a notice of missed interview (CF-386) in the mail.

As mentioned in Section II, CalFresh recipients have the option of signing up to receive text and email communications from the program office about their case status. These communications included a reminder about the certification renewal process by notifying cases that recertification applications had been sent to the case’s address.<sup>34</sup> In order to receive these communications,

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<sup>34</sup>Specifically, text communications state: “Case <#>: Your CalFresh Renewal packet has been mailed. To avoid

households needed to voluntarily sign up for the program and provide a valid phone number or email address. Just under one third of cases signed up to receive at least one of the two types of communications with 24 percent enrolling in text communications and 18 percent enrolling in email communications. Households that signed up for these communications were more likely to be younger, childless, and English-speaking (potentially characteristics associated with less need), but also are more likely to receive the maximum benefit amount.

While participation in the program is voluntary with far from universal take-up, we investigate the importance of reminders by estimating the effect of interview assignment date on recertification for those who did and did not receive these communications. If cases with early interview dates are more likely to recertify only because they are reminded about the process earlier (either through earlier completed interviews or voicemails from their caseworker about a missed interview), then text and email reminders should moderate the influence of interview day assignment on recertification success. We estimate an alternative version of the model in equation (3) that interacts text or email participation with interview day to determine whether interview assignment impacts recertification even for those receiving these additional reminders.

Table 9 presents results for those who receive text communications or email communication. Column 1 shows that interview date assignment has a smaller impact on cases that opted in to receive text messages. Specifically, cases that sign up to receive text reminders are 0.38 percentage points less likely to recertify for each one-day delay in interview date assignment versus 0.25 percentage points for those who received text communications, though this difference is not statistically significant. While this evidence is at least directionally consistent with the reminder story described above, it suggests that early interview dates impact recertification success through channels other than reminders as well. We do not find any significant differences in the effect of interview date assignment for cases that opt to receive email communications versus those who do not.

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stopping your benefits please complete the forms or contact your county worker right away.” Email communications state: “Case <#>: This is <County Agency>. This is a reminder that your Certification period will end on <month/day/year>. If you want to keep getting your benefits without a break; you must also complete an interview with the county and turn in any proof of income, expenses, or other information before the end of your certification period listed above.”

## C. Learning

While many cases have experience with the recertification process, cases that are new to CalFresh may be less aware of the timing of the process or the difficulty involved in completing the various recertification steps. Earlier interview assignments may be particularly important for inexperienced cases since interview appointments may provide information that the deadline is approaching or because caseworkers convey helpful information about the steps necessary for recertification that may only be useful if the recipient has sufficient time before the end of the certification period. If inexperience with recertification is driving our estimates, we would expect that the effect of interview assignment should attenuate as households learn to navigate the recertification process over time.

To explore this hypothesis, we exploit the panel structure of our data to determine if experience with the program mitigates the effect of interview assignment on recertification. Since our data set spans two years of recertification cases, we observe two recertifications for many cases in our sample. Specifically, we are interested in cases that experience both their first and second recertification during our study period. Since initial interview date assignment in the first recertification period is independent of assignment in the second period, we are able to compare the effect of interview assignment on the outcome of a case's first recertification experience (when many parts of the process may be unfamiliar) to its effect on the second recertification.

Table 10 considers the 1,209 cases who experience both their first and second recertification process during our study period.<sup>35</sup> Columns 1 and 2 estimate the effect of interview day on recertification success separately for the first and second recertifications, respectively. In contrast to the learning hypothesis described above, the estimates show that the effect of interview date assignment on recertification success is nearly identical in magnitude for the first and second recertification, though the estimates are imprecise.

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<sup>35</sup>Note that for a case to be observed twice in our data, the case needs to have successfully completed its first recertification or churned shortly after failing recertification. While this selection criteria could lead to a subsample of cases with very high rates of recertification success for the first recertification, that does not prove to be the case: only 62 percent of this sample successfully completed their first recertification compared to a success rate of 50 percent for the second recertification.

## VI. Welfare Implications

Recertification failure induced by later interview assignment is associated with several costs including costs to participants, program administrators, and fiscal externalities associated with labor supply responses. This section estimates several of these costs to determine the welfare consequences of the timing of interview assignments.

### i. Participants

To measure the cost of lost benefits to households that failed recertification, we employ an instrumental variables analysis in which we estimate the effect of recertification failure on prorated benefit dollars instrumenting for recertification failure with interview date assignment. Our estimate of prorated benefit dollars scales the number of missed benefit days in the year post recertification by the case’s monthly benefit amount in the month prior to recertification failure. Cases that successfully recertified or those that failed recertification but were estimated to be ineligible for recertification are determined to have zero missed benefit days. Column 1 of Table 11 considers prorated benefits for all cases (both churners and long-term discontinued cases), while column 2 considers only lost benefits associated with cases that churn. Specifically, the outcome in column 2 is defined as the benefit dollars lost between the end of the case’s recertification period and the date on which their reapplication was approved for cases that churn within 90 days and zero for all other cases.

The results in Table 11 show significant losses in benefits – recertification failure induced by later interview assignment leads to an average loss in annual benefits of almost \$500. These losses are largely driven by cases that remain off the program for an extended period of time; however, we also observe average decreases in benefits of \$45 for cases that churn back on to the program. While the losses to churners are smaller in magnitude, research suggests that in the week prior SNAP benefit receipt – when many households have exhausted their monthly benefits (Castner and Henke, 2011) – SNAP recipients experience decreases in health (Shapiro, 2005; Seligman et al., 2014).<sup>36</sup> This suggests that even short-term benefit gaps may generate substantial externalities for SNAP recipients and their communities. Separately, qualitative interviews demonstrate that benefit loss associated with recertification failure creates considerable stress for SNAP recipients (Edin

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<sup>36</sup> Additionally, this intramonth cyclical in benefit availability is associated with increases in crime and disciplinary infractions (Carr and Packham, 2019; Gennetian et al., 2016).

et al., 2013), suggesting that recertification failure generates costs for all participants regardless of subsequent reapplication success.

## **ii. Program Administrators**

Program administrators face costs associated with processing applications, largely in the form of additional caseworker hours – for example, Finkelstein and Notowidigdo (2018) estimate a public cost of processing a new SNAP application of close to \$300. However, in the case of recertification, caseworkers must attempt to contact *all* recertification cases which incurs administrative costs for every case regardless of the recertification outcome. Additionally, cases that fail recertification, but reapply shortly after, create additional administrative costs associated with processing new applications that are more in-depth than those in the recertification process. Mills et al. (2014) estimates that the administrative burden associated with cases that churn, is twice as large as that for cases that successfully recertify costing program administrators an additional \$80 for each case that churns. So while policies that induce new initial applications increase administrative costs of the program, such as in Finkelstein and Notowidigdo (2018), preventing cases from churning *decreases* administrative costs.

This highlights an interesting difference in the distribution of costs for the two groups of cases that fail recertification – long-term discontinued cases and churners. Eligible cases that fail recertification and remain off the program incur substantial private costs in the form of missed benefits, however, they do not generate any additional costs for program administrators. In contrast, cases that churn suffer smaller losses in benefit receipt, but generate large costs to program administrators. In fact, our estimates suggest that the cost of providing the prorated benefits to households that churn are more than fully offset by a decrease in administrative costs associated with processing churn applications.

## **iii. Other Fiscal Externalities**

An additional cost highlighted in the literature relates to the fiscal externalities generated by labor supply responses to the program. For example, Hoynes and Schanzenbach (2012) find that the rollout of the SNAP led to decreases in employment and number of hours worked. Using our EDD wage data, we estimate the effect of interview assignment on wage earnings in the year after

recertification. Table 12 shows that the lower recertification rates associated with later interview assignments do not translate to significant changes in annual earnings in the year post recertification (column 1) nor the likelihood of earning any wage income in the post-recertification year (column 2) – in fact, the point estimates suggest that later interview assignments are associated with decreases in wage earnings, though the estimates are imprecise. This is somewhat unsurprising given that the majority of cases that failed recertification due to later assignments reentered the program shortly after. However, we also find that among our likely-eligible long-term discontinued cases, 90 percent appear eligible one year after recertification and 58 percent had no wage earnings at all in the year following their failed recertification.

## V. Conclusion

In this paper, we demonstrate that administrative burden associated with the SNAP recertification process leads to significantly lower rates of recertification success. Cases that are randomly assigned to initial interview dates at the beginning of the recertification month are 19 percent more likely to recertify than cases assigned to interviews at the end of the month. Our estimates are unchanged when conditioning on likely eligibility for the program. Such large differences in recertification success are particularly surprising given the ease with which cases may reschedule their assigned date. We find that the vast majority of the cases who fail recertification as a result of interview assignment successfully reapply for the program within the 90 days post-recertification, though we also find a small but significant effect of interview assignment on the likelihood of remaining off the program for over a year despite maintained eligibility.

One simple policy implication resulting from our analysis is to shift the period in which caseworker interviews take place earlier in the recertification process. Extrapolating our results to the two million annual recertification cases in California suggests that shifting the interview period two weeks earlier would lead to 85,000 fewer cases that churn each year, increasing the amount of benefits distributed to eligible households and relieving stress associated with prorated and delayed benefits. Additionally, the decrease in administrative costs associated with cases that churn more than offset the increase in costs of increased benefit distribution for these cases. While current federal law requires that SNAP recipients must complete a caseworker interview to recertify, the

scheduling and timing of these interviews is not federally regulated meaning that our suggested policy could be implemented without a waiver or a regulation change.<sup>37</sup>

More generally, we document very low rates of overall recertification success despite high rates of estimated eligibility. Sunstein (2018) details the overwhelming amount of paperwork burden associated with government programs, pointing out that while some amount of administrative burden is necessary to ensure program integrity, excess “sludge” prevents individuals from accessing these programs (Thaler, 2018). Our results suggest that relaxing the recertification requirements – for example, lengthening recertification periods or waiving interview requirements for likely-eligible households<sup>38</sup> – could lead to significant increases in program participation.

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<sup>37</sup>For example, in New York City, SNAP recipients are not assigned an initial interview, but rather may conduct an interview at any time during the two months prior to the end of their recertification period with interviews scheduled on-demand.

<sup>38</sup>In the context of Medicaid, Pei (2017) suggests that 12 months serves as a lower bound for the optimal recertification period based on evidence that suggests minimal strategic income adjustment to maintain program eligibility.

## References

- Alatas, Vivi, Ririn Purnamasari, Matthew Wai-Poi, Abhijit Banerjee, Benjamin A Olken, and Rema Hanna.** 2016. “Self-targeting: Evidence from a field experiment in Indonesia.” *Journal of Political Economy*, 124(2): 371–427.
- Armour, Philip.** 2018. “The Role of Information in Disability Insurance Application: An Analysis of the Social Security Statement Phase-In.” *American Economic Journal: Economic Policy*, 10(3): 1–41.
- Barr, Andrew, and Sarah Turner.** 2018. “A Letter and Encouragement: Does Information Increase Postsecondary Enrollment of UI Recipients?” *American Economic Journal: Economic Policy*, 10(3): 42–68.
- Bertrand, Marianne, Sendhil Mullainathan, and Eldar Shafir.** 2004. “A Behavioral Economics View of Poverty.” *American Economic Review*, 94(2): 419–423.
- Bettinger, Eric P, Bridget Terry Long, Philip Oreopoulos, and Lisa Sanbonmatsu.** 2012. “The Role of Application Assistance and Information in College Decisions: Results from the H&R Block FAFSA Experiment.” *The Quarterly Journal of Economics*, 127(3): 1205–1242.
- Bhargava, Saurabh, and Dayanand Manoli.** 2015. “Psychological frictions and the incomplete take-up of social benefits: Evidence from an IRS field experiment.” *American Economic Review*, 105(11): 3489–3529.
- Carr, Jillian B, and Analisa Packham.** 2019. “SNAP Benefits and Crime: Evidence from Changing Disbursement Schedules.” *Review of Economics and Statistics*, 101(2).
- Carvalho, Leandro S, Stephan Meier, and Stephanie W Wang.** 2016. “Poverty and economic decision-making: Evidence from changes in financial resources at payday.” *American Economic Review*, 106(2): 260–84.
- Castleman, Benjamin L, and Lindsay C Page.** 2016. “Freshman year financial aid nudges: An experiment to increase FAFSA renewal and college persistence.” *Journal of Human Resources*, 51(2): 389–415.

- Castner, Laura, and Juliette Henke.** 2011. “Benefit Redemption Patterns in the Supplemental Nutrition Assistance Program.” USDA-FNS Report.
- Chetty, Raj, John N Friedman, and Emmanuel Saez.** 2013. “Using Differences in Knowledge across Neighborhoods to Uncover the Impacts of the EITC on Earnings.” *American Economic Review*, 103(7): 2683–2721.
- Currie, Janet, and Jeffrey Grogger.** 2001. “Explaining recent declines in food stamp program participation.” *Brookings-Wharton papers on urban affairs*, 203–244.
- Dahl, Gordon B., Katrine V. Løken, and Magne Mogstad.** 2014. “Peer Effects in Program Participation.” *American Economic Review*, 104(7): 2049–74.
- Deshpande, Manasi, and Yue Li.** 2019. “Who is Screened Out? Application Costs and the Targeting of Disability Programs.” *American Economic Journal: Economic Policy*, Forthcoming.
- Edin, Kathryn, Melody Boyd, James Mabli, Jim Ohls, Julie Worthington, Sara Greene, Nicholas Redel, and Swetha Sridharan.** 2013. “SNAP Food Security In-Depth Interview Study.” Mathematica Policy Research.
- Federal Mandatory Spending for Means-Tested Programs, 2008 to 2028.** 2018. “Federal Mandatory Spending for Means-Tested Programs, 2008 to 2028.” Congressional Budget Office.
- Finkelstein, Amy, and Matthew J Notowidigdo.** 2018. “Take-up and Targeting: Experimental Evidence from SNAP.” National Bureau of Economic Research.
- Ganong, Peter, and Jeffrey B. Liebman.** 2018. “The Decline, Rebound, and Further Rise in SNAP Enrollment: Disentangling Business Cycle Fluctuations and Policy Changes.” *American Economic Journal: Economic Policy*, 10(4): 153–76.
- Gennetian, Lisa A, Roopa Seshadri, Nathan D Hess, Aaron N Winn, and Robert M Goerge.** 2016. “Supplemental Nutrition Assistance Program (SNAP) benefit cycles and student disciplinary infractions.” *Social Service Review*, 90(3): 403–433.

- Goldin, Jacob, Tatiana Homonoff, and Will Tucker-Ray.** 2017. “Retirement Contribution Rate Nudges and Plan Participation: Evidence from a Field Experiment.” *American Economic Review*, 107(5): 456–61.
- Gray, Colin.** 2018. “Why Leave Benefits on the Table? Evidence from SNAP.” Upjohn Institute working paper 18-288.
- Hastings, Justine, and Jesse M Shapiro.** 2018. “How are SNAP benefits spent? Evidence from a retail panel.” *American Economic Review*, 108(12): 3493–3540.
- Heinrich, Carolyn J.** 2015. “The bite of administrative burden: A theoretical and empirical investigation.” *Journal of Public Administration Research and Theory*, 26(3): 403–420.
- Herd, Pamela, Thomas DeLeire, Hope Harvey, and Donald P Moynihan.** Forthcoming. “Shifting Administrative Burden to the State: A Case Study of Medicaid Take-Up.” *Public Administration Review*.
- Hoynes, Hilary Williamson, and Diane Whitmore Schanzenbach.** 2012. “Work incentives and the food stamp program.” *Journal of Public Economics*, 96(1-2): 151–162.
- Kabbani, Nader S., and Parke E. Wilde.** 2003. “Short Recertification Periods in the U.S. Food Stamp Program.” *The Journal of Human Resources*, 38: 1112–1138.
- Kleven, Henrik Jacobsen, and Wojciech Kopczuk.** 2011. “Transfer program complexity and the take-up of social benefits.” *American Economic Journal: Economic Policy*, 3(1): 54–90.
- Madrian, Brigitte C, and Dennis F Shea.** 2001. “The Power of Suggestion: Inertia in 401(k) Participation and Savings Behavior.” *The Quarterly Journal of Economics*, 116(4): 1149–1187.
- Mani, Anandi, Sendhil Mullainathan, Eldar Shafir, and Jiaying Zhao.** 2013. “Poverty impedes cognitive function.” *Science*, 341(6149): 976–980.
- Mills, Gregory, Tracy Vericker, Heather Koball, Kye Lippold, Laura Wheaton, and Sam Elkin.** 2014. *Understanding the rates, causes, and costs of churning in the supplemental nutrition assistance program (snap)*. United States Department of Agriculture, Food and Nutrition Service, Office of Policy Support.

- Moffitt, Robert, et al.** 1983. “An economic model of welfare stigma.” *American economic review*, 73(5): 1023–1035.
- Moynihan, Donald, Pamela Herd, and Hope Harvey.** 2014. “Administrative burden: Learning, psychological, and compliance costs in citizen-state interactions.” *Journal of Public Administration Research and Theory*, 25(1): 43–69.
- Mullainathan, Sendhil, and Eldar Shafir.** 2013. *Scarcity: Why Having Too Little Means So Much*. Macmillan.
- Nichols, Albert L, and Richard J Zeckhauser.** 1982. “Targeting Transfers through Restrictions on Recipients.” *The American Economic Review*, 72(2): 372–377.
- Pei, Zhuan.** 2017. “Eligibility Recertification and Dynamic Opt-in Incentives in Income-tested Social Programs: Evidence from Medicaid/CHIP.” *American Economic Journal: Economic Policy*, 9(1): 241–76.
- Ribar, David C, Marilyn Edelhoeh, and Qiduan Liu.** 2008. “Watching the Clocks: The Role of Food Stamp Recertification and TANF Time Limits in Caseload Dynamics.” *Journal of Human Resources*, 43(1): 208–238.
- Rossin-Slater, Maya.** 2013. “WIC in Your Neighborhood: New Evidence on the Impacts of Geographic Access to Clinics.” *Journal of Public Economics*, 102: 51–69.
- Seligman, Hilary K, Ann F Bolger, David Guzman, Andrea López, and Kirsten Bibbins-Domingo.** 2014. “Exhaustion of food budgets at months end and hospital admissions for hypoglycemia.” *Health affairs*, 33(1): 116–123.
- Shapiro, Jesse M.** 2005. “Is There a Daily Discount Rate? Evidence from the Food Stamp Nutrition Cycle.” *Journal of Public Economics*, 89(2): 303–325.
- Spears, Dean.** 2011. “Economic decision-making in poverty depletes behavioral control.” *The BE Journal of Economic Analysis & Policy*, 11(1).
- Sunstein, Cass R.** 2018. “Sludge and Ordeals.” *Duke Law Journal*, *Forthcoming*.
- Thaler, Richard H.** 2018. “Nudge, not sludge.” *Science*, 361(6401): 431.

Figure 1: Distribution of Initial Interview Day across the Calendar Month

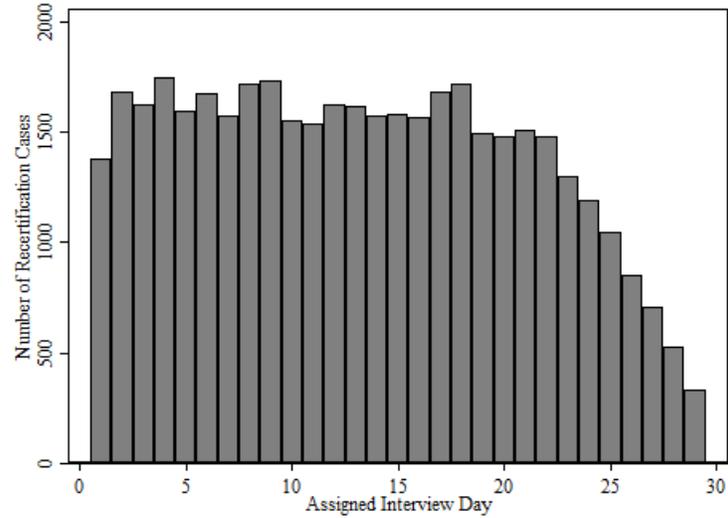


Figure 2: Number of Churn Cases by Days since Recertification Deadline

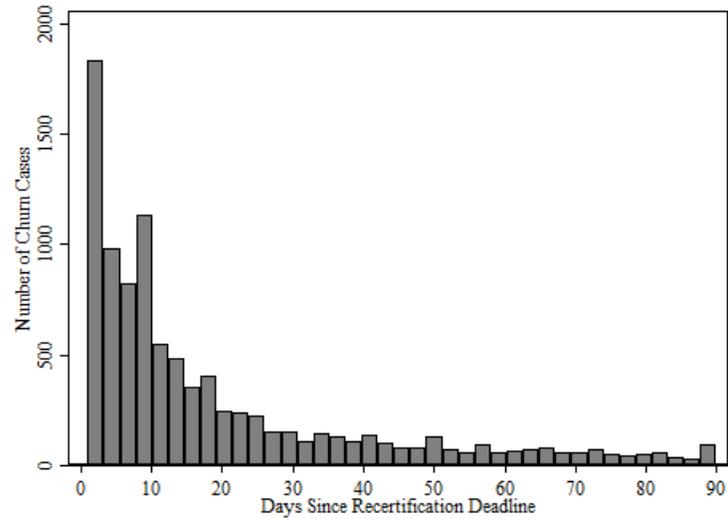
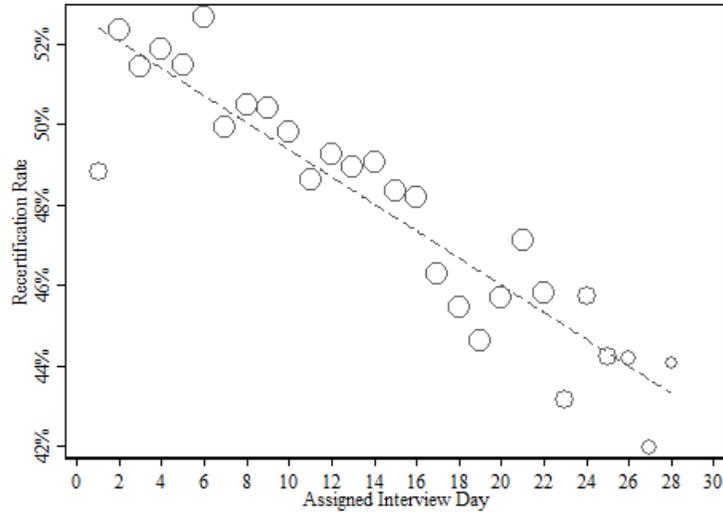


Figure 3: Recertification Rate by Initial Interview Day



Note: Recertification rate demeaned by recertification month fixed effects. The size of the circles indicate the relative number of observations per calendar day. The dashed line is a linear best fit from regressing an indicator for recertification success on the assigned interview day.

Table 1: Demographic Characteristics by Interview Assignment

	Full Sample (1)	Early Interview (1st to 13th) (2)	Late Interview (14th to 29th) (3)	prob>F (4)
Case Characteristics				
Household Size	1.55	1.55	1.55	0.975
Any Children (%)	32.1	32.4	31.9	0.284
Non-English Speaking (%)	30.7	31.0	30.4	0.159
Max CalFresh Benefits (%)	63.2	63.1	63.2	0.828
CalFresh 5+ Years (%)	25.0	24.2	25.8	0.001
Head of Household Demographics				
Female (%)	46.3	46.0	46.5	0.322
Age	42.6	42.6	42.6	0.998
US Citizen (%)	77.0	76.5	77.5	0.023
Non-White (%)	78.9	78.9	78.9	0.902
N	41,082	21,051	20,031	

Test for equality of means between cases with early versus late initial interview assignment.

Data on head of household characteristics is missing for a portion of our data.

Statistics on head of household race exclude the 3,240 cases for which ethnicity is unknown.

Table 2: Summary Statistics of Recertification Outcomes

	Full Sample
Recertified	48.3
Completed Caseworker Interview	76.3
Reapplied	25.5
Churned	23.6
Long-term Discontinued	
90 days	28.1
12 months	22.4
N	41,082
Households	31,174

This table reports the sample means for each outcome.

“Reapplied” refers to cases that failed recertification, but reapplied for the program within the next 90 days.

“Churned” refers to cases that failed recertification, but successfully reentered the program within the next 90 days.

“Long-term discontinued” refers to cases that failed recertification and did not reenter the program for the next 90 days or 12 months.

Table 3: Effect of Interview Date Assignment on Recertification Success

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Interview Day	-0.297*** (0.033)	-0.352*** (0.033)	-0.346*** (0.032)	-0.328*** (0.031)	-0.428*** (0.115)	-0.284*** (0.037)	
Interview Week 2							-1.09* (0.615)
Interview Week 3							-3.71*** (0.626)
Interview Week 4							-6.95*** (0.723)
RRR Month FE		X	X	X	X	X	X
Case Controls			X	X	X	X	X
Demographics				X	X	X	X
Household FE					X		
Sent Date						X	
Mean of DV	48.3	48.3	48.3	48.3	48.3	48.3	48.3
N	41,082	41,082	41,082	41,082	41,082	41,082	40,745

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Outcome: indicator for successfully recertifying.

Case controls are case language, interview type (phone vs in-person) and case ID rank.

Demographic controls are household size, years since initial application, indicators for long-term SNAP receipt and presence of children as well as head of household sex, age, citizenship, and ethnicity.

Table 4: Eligibility Estimates by Recertification Outcome

	Full Sample (1)	Recertified (2)	Churned (3)	Long-term Discontinued (4)
Eligibility Estimates				
Wage Earnings < 200% FPL	94.0	97.5	96.3	85.2
Wage Earnings < 130% FPL	86.9	92.1	90.0	74.7
No Wage Earnings	65.6	68.6	68.3	57.8
N	41,082	19,835	9,702	9,207

Source: Employment Development Department quarterly wage earnings data.

CalFresh gross income limits require cases to have household income below 200% FPL.

Eligibility estimates include only wage earnings data.

“Churned” refers to cases that failed recertification but reentered the program within 90 days.

“Long-term discontinued” refers to cases that failed recertification and did not reenter the program within the year post recertification.

Table 5: Effect of Interview Date Assignment on Type I and Type II Errors

	Eligible but Failed Recert (Type I Error) (1)	Ineligible but Recertified (Type II Error) (2)
Interview Day	0.348*** (0.032)	-0.023*** (0.007)
Mean of DV	46.8	1.4
Observations	41,082	41,082

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Outcome: indicator for being income-eligible for CalFresh, but failing recertification (column 1); and income-ineligible, but successfully recertifying (column 2).

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 6: Effect of Interview Assignment on Reapplications, Churn, and Long-term Discontinuances

	Full			Eligible Households		
	Reapply (1)	Churn (2)	Discontinued (3)	Reapply (4)	Churn (5)	Discontinued (6)
Interview Day	0.306*** (0.029)	0.302*** (0.029)	0.033 (0.027)	0.304*** (0.029)	0.298*** (0.028)	0.057** (0.025)
Mean of DV	25.5	23.6	22.4	24.3	22.7	19.1
Observations	41,082	41,082	41,082	41,082	41,082	41,082

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Outcome: indicator for failing recertification and reapplying (columns 1), failing recertification and churning within 90 days (columns 2), or failing recertification and not rejoining the program within the year after the recertification deadline (column 3).

Columns 4-6 replicate the outcomes in columns 1-3, but condition on having wage earnings below 200% FPL.

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 7: Effect of Interview Assignment on Recertification Outcomes by Subgroup

<i>Subgroup:</i>	Any Children (1)	Long-term SNAP (2)	Benefit Amount (\$100s) (3)	Max Benefit (4)	ESL (5)
Interview Day	-0.265*** (0.037)	-0.288*** (0.036)	-0.201*** (0.062)	-0.366*** (0.050)	-0.309*** (0.037)
DayXSubgroup	-0.196*** (0.065)	-0.145** (0.068)	-0.056** (0.024)	0.060 (0.062)	-0.062 (0.065)
DV Mean	48.3	48.3	48.3	48.3	48.3
N	41,082	41,082	41,082	41,082	41,082

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Outcome: indicator for successfully recertifying.

Subgroups: indicator for any children (column 1), received CalFresh for 5+ years (column 2), prior year monthly benefit amount in hundreds of dollars (column 3), case received the maximum benefit amount (column 4), case language is not English (column 5).

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 8: Effects of Interview Assignment on Interview Completion.

	First Interview (1)	Any Interview (2)
Interview Day	0.037 (0.025)	-0.222*** (0.022)
Mean of DV	67.8	76.3
Observations	41,082	41,082

Standard errors clustered at the case level in parentheses.

\*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Out come: indicator successfully completing the first scheduled interview (column 1) and successfully completing the any interview by the recertification deadline (column 2).

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 9: Effect of Interview Assignment on Recertification by Communication Alert

	Text (1)	Email (2)
Interview Day	-0.378*** (0.044)	-0.340*** (0.043)
Interview Day X Text	0.130 (0.091)	
Interview Day X Email		-0.038 (0.101)
DV Mean	48.3	48.3
Observations	23,448	23,448

Standard errors clustered at the case level in parentheses.

\*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

“Text” and “Email” are indicators for participating in the voluntary text or email program, respectively.

Outcome: indicator for successfully recertifying.

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 10: Effect of Interview Assignment on First vs. Second Recertification

	First Recertification (1)	Second Recertification (2)
Interview Day	-0.190 (0.201)	-0.267 (0.177)
DV Mean	61.9	50.0
Observations	1,209	1,209

Standard errors clustered at the case level in parentheses. \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ .

Outcome: indicator for successfully recertifying.

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Sample limited to the 1,205 households who experienced their first and second recertification during our sample period.

Table 11: Effect of Interview Assignment on Missed Benefit Dollars

	Full Sample (1)	Churners (2)
Recertification Failure	491.80** (205.35)	45.30** (21.23)
DV Mean	563.68	34.87
Observations	41,077	41,076

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

IV regression instrumenting for recertification failure with assigned interview day.

Outcome: number of missed benefit days in the year post recertification \* monthly benefit amount in the month prior to recertification failure.

Column 1: cases that recertify or are deemed ineligible for recertification have a value of zero.

Column 2: cases that do not churn within 90 days have a value of zero.

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Table 12: Effect of Interview Assignment on Post-Recertification Earnings

	Annual Earnings (1)	Any Earnings (2)
Interview Day	-5.241 (8.775)	-0.034 (0.030)
DV Mean	8,104	44.12
Observations	41,082	41,082

Standard errors clustered at the case level in parentheses. \*\*\* p<0.01, \*\* p<0.05, \* p<0.1.

Outcome: annual wage earnings in the year post recertification (column 1) and an indicator for having any wage earnings in the year post recertification (column 2).

Controls: case language, interview type, case ID rank, household size, any children, long-term SNAP receipt, and years since initial application, and head of household sex, age, citizenship, and ethnicity and recertification month fixed effects.

Appendix Figure 1: Notice of Expiration of Certification

**NOTICE OF ACTION**  
**Food Stamps Termination**

COUNTY OF SAN FRANCISCO

STATE OF CALIFORNIA  
HEALTH AND HUMAN SERVICES AGENCY  
CALIFORNIA DEPARTMENT OF SOCIAL SERVICES

Notice Date : 05/17/2016  
Case Name : [REDACTED]  
Case Number : [REDACTED]  
Worker Name : Food Assistance  
Worker Number : VBNK  
Telephone : (415) 558-1001  
Worker Hours : 8:00 AM- 12:00 PM, 12:00 PM - 5:00 PM  
24Hour Information :  
Address : 1235 Mission ST  
San Francisco CA 94103-2705

[REDACTED]  
San Francisco, [REDACTED]

Questions? Ask your Worker.

**State Hearing:** If you think this action is wrong, you can ask for a state hearing. The back of this page tells how. Your benefits may not be changed if you ask for a hearing before this action takes place.

1. Your CalFresh Certification period will end on 06/30/2016.
2. If you want to keep getting your benefits without a break; you must file an application no later than the 15th day of the last month of the certification period. You must also complete an interview with the county, and turn in any proof of income, expenses, or other information before the end of your certification period listed above.
3. If you have a one-month or two-month certification period, contact your worker for when your application needs to be turned in.
4. You will get a separate letter with an interview appointment date and time. Call your worker right away if you do not get the appointment letter within 10 days of this notice. Your appointment letter will tell you if you have a phone interview or if you have to come into the office for your interview.

## Appendix Figure 2: Recertification Appointment Letter

STATE OF CALIFORNIA – HEALTH AND HUMAN SERVICES AGENCY

CALIFORNIA DEPARTMENT OF SOCIAL SERVICES

### CALFRESH RECERTIFICATION APPOINTMENT LETTER

<p>██████████ San Francisco ██████████</p>	<p>Date: 05/18/2016 Case Number: ██████████ Case Name: ██████████ Worker Name: Food Assistance Worker Number: VBNK Worker Telephone: (415) 558-1001 Address: 1235 Mission ST San Francisco CA 94103-2705</p>
------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

You were notified that your CalFresh certification period ends on 06/30/2016. You need an interview to keep getting CalFresh benefits. This is your appointment letter for your interview.

You have a telephone CalFresh recertification interview appointment. **If you prefer to be interviewed in person, please call the county at the number above for an appointment.**

APPOINTMENT DATE: 06/01/2016	APPOINTMENT TIME: 8:00 AM - 12:30 PM
YOUR PHONE NUMBER: ██████████	ALTERNATIVE PHONE NUMBER: ██████████

We will call you at the number provided above. If the number is not correct, you must call us and provide a number where you can be reached for your interview. It is very important that we are able to reach you. You may also want to provide an alternative phone number where you can be reached. County phone numbers may be blocked. If your phone does not accept blocked numbers, you may miss the phone call for your telephone interview, and your benefits may be delayed. If you miss your scheduled interview you will have to reschedule your interview. Call the county at the number above or go to the office address listed above to reschedule your interview.

You have a face-to-face CalFresh recertification interview appointment.

APPOINTMENT DATE:	APPOINTMENT TIME:		
COUNTY OFFICE NAME:			
COUNTY OFFICE ADDRESS:	CITY:	STATE:	ZIP CODE:

### Appendix Figure 3: Missed Interview Letter

**COUNTY OF SAN FRANCISCO**

San Francisco, [REDACTED]

STATE OF CALIFORNIA  
HEALTH AND HUMAN SERVICES AGENCY  
CALIFORNIA DEPARTMENT OF SOCIAL SERVICES

Notice Date : 06/01/2016  
Case Name : [REDACTED]  
Case Number : [REDACTED]  
Worker Name : Food Assistance  
Worker Number : VBNK  
Telephone : (415) 558-1001  
Worker Hours : 8:00 AM- 12:00 PM, 12:00 PM - 5:00 PM  
24Hour Information :  
Address : 1235 Mission ST  
San Francisco CA 94103-2705

Questions? Ask your Worker.

**State Hearing:** If you think this action is wrong, you can ask for a hearing. The back of this page tells how. Your benefits may not be changed if you ask for a hearing before this action takes place.

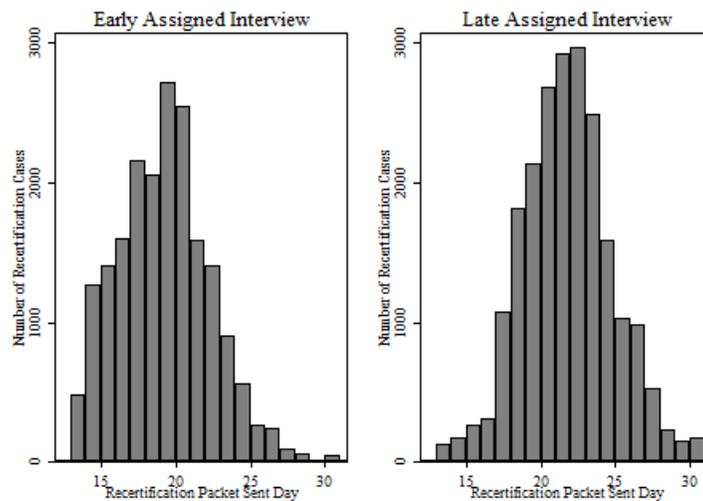
You were scheduled for an interview on 06/01/2016, but you did not keep this appointment. If you still want CalFresh benefits, please contact your worker to schedule another interview.

You must complete your interview with us by 06/30/2016.

You must be interviewed in order for us to determine your eligibility for CalFresh benefits. If you do not complete an interview, you will not be able to get CalFresh benefits.

If you have any questions or want more information, please contact your worker.

### Appendix Figure 4: Recertification Packet Sent Day



Note: Early interview assignments are defined as those scheduled from the first to the thirteenth of the recertification month.