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Demonstration and Evaluation of the Short-Time Compensation Program in Iowa and Oregon: Final Report

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Abstract

Short-time compensation (STC) is an optional program within some state unemployment insurance (UI) systems that allows employers experiencing a temporary reduction in business to lower the average hours of employees in lieu of laying them off. Employer use of the STC option has been low in states with STC programs. We conducted demonstrations in Iowa and Oregon to evaluate the effectiveness of several interventions designed to increase employer awareness and use of STC, including disseminating information about STC to specific employers (members of the "treatment" group) over a 12-month period. The main findings support the hypothesis that lack of awareness is a major barrier to STC take-up and that informational campaigns can significantly increase awareness and use of the STC option.

Executive Summary

Short-time compensation (STC), also known as work sharing, is an optional program within some state unemployment insurance systems. Under STC, employers experiencing a temporary reduction in business lower the average hours of employees in lieu of laying off workers. Employees whose hours are lowered receive Unemployment Insurance (UI) benefits in proportion to the reduction in their hours, while businesses retain valued employees and avoid future recruitment and training costs. Although STC is a potentially important mechanism for mitigating unemployment, employer use has been low in most states with the program. Lack of awareness among employers about the STC program has long been hypothesized as a reason for the low take-up.

The Chief Evaluation Office (CEO) of the U.S. Department of Labor (DOL) contracted with Westat and its subcontractors—the Upjohn Institute for Employment Research and Social Dynamics—to conduct demonstrations in Iowa and Oregon that rigorously evaluate the effectiveness of informational campaigns designed to increase employer awareness and use of STC.

The study's main findings support the hypothesis that lack of awareness of the STC option is a major barrier to STC take-up and that informational campaigns can significantly increase awareness and use.

- In the absence of an informational campaign, employer awareness was low.
- Relatively modest outreach, primarily consisting of mailings, raised awareness among targeted Iowa and Oregon employers by an estimated 15 to 30 percentage points.
- The informational campaign also increased STC adoptions among Oregon employers receiving the information by an estimated 58 to 100 percent. Increased awareness did not translate into greater take-up in Iowa, likely due in part to the strong economy prevailing in Iowa during the study.

To place our study's findings in context, we collected evidence on other factors potentially affecting STC use. These descriptive findings indicate:

- A large majority of prior users have strong, positive views of the STC program and do not find the costs of participating in STC a barrier, suggesting scope for significant expansion in program use in the future.
- Outdated IT systems may be a significant barrier to states' ability to expand the STC program.

Background on STC and Study

The Great Recession, which lasted from December 2007 to June 2009, increased interest in the STC program in the United States. Research indicates that widespread use of such programs in Europe and Japan significantly lowered unemployment during that recession.[1] Yet, only 17 U.S. states had STC programs at the start of the recession, and relatively few employers adopted STC plans in most of these states.[2] The Middle Class Tax Relief and Job Creation Act of 2012 (MCTRJCA) includes provisions designed to expand the number of states offering an STC option and to increase use in states with STC programs by funding state marketing programs to raise employer awareness about the program.

Studies have pointed to lack of awareness among employers about the STC program and its benefits as a potentially important reason for low employer take-up, but the effectiveness of strategies to increase awareness and use has never been systematically tested.[3] This study is designed to fill this information gap. The study's findings will inform future state efforts to promote the STC program, which are partly funded by federal grants under the 2012 law.

Study Design

We worked with staff in Iowa and Oregon to improve and develop new materials on the STC program. These materials included new brochures, fact sheets, enhanced information on the state website, and, in Oregon, slides and other materials for employer presentations. Both states promoted the program and its potential benefits over a 12-month period, starting around mid-September 2014 in Iowa and late October 2014 in Oregon.

- *A random controlled trial (RCT) study design was used in Iowa.*

Iowa employers were randomly assigned to treatment group, whose members received additional information on the STC program, or to a control group, whose members did not receive this information. Each Iowa treatment employer received two separate mailings about the program, along with an informational sheet included in its annual tax rate mailing. Treatment employers who

[1] Organisation for Economic Cooperation and Development (OECD). "Moving Beyond the Jobs Crisis." *Employment Outlook*. Paris: OECD Publishing. 2010.

[2] Julie M. Whittaker, *Compensated Work Sharing Arrangements (Short-Time Compensation) as an Alternative to Layoffs,* Congressional Research Service, November 1, 2016, Tables 1 and 2.

[3] See, for example, Berkeley Planning Associates and Mathematica Policy Research, *Evaluation of Short-Time Compensation Programs: Final Report,* submitted to U.S. Department of Labor, Employment and Training Administration, Contract No. K-4722-4-00-80-30, March 1997.

received a quarterly notice of claims mailing, which could indicate that they were engaged in layoffs, received supplemental mailings about the STC alternative.

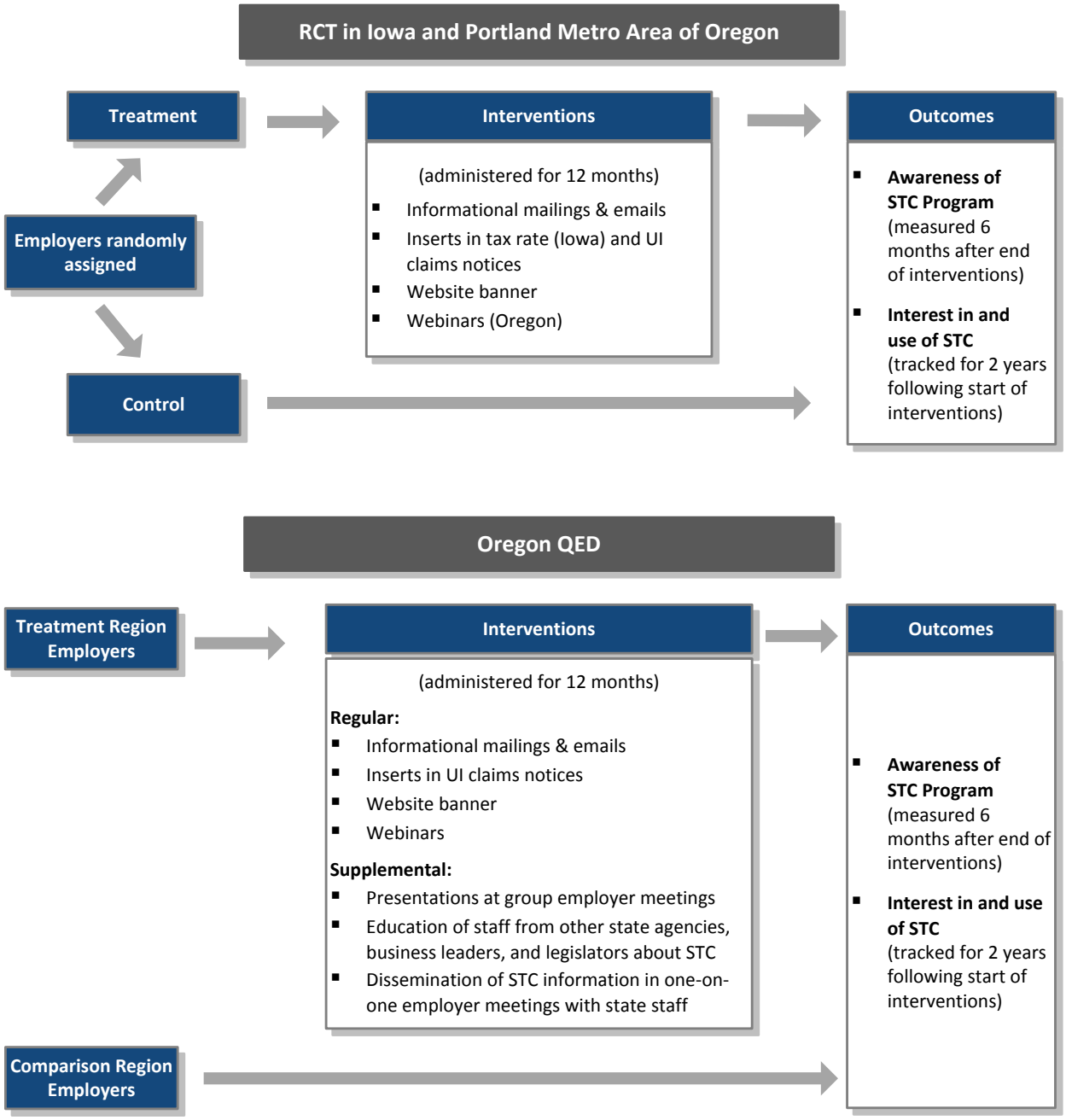
Average differences in factors that might affect employers' use of STC will be minimal between the treatment and control groups because in an RCT design employers are randomly assigned to the groups. Therefore, average differences between treatment and control employers in awareness and use of STC following the start of the informational campaign are considered to be the result of the study's "interventions."

- *RCT and quasi-experimental designs were used in Oregon.*

A weakness of an RCT design is that it limits the types of informational outreach that can be tested. Certain types of outreach thought to be particularly effective in communicating program information to employers are not feasible in an RCT design. It would be impossible, for example, to prevent employers in the control group from attending employer association meetings.

For this reason, we implemented a mixed study design in Oregon, where, owing to state interest and administrative capabilities, a more ambitious set of outreach initiatives was feasible. In the Portland metropolitan area, as in Iowa, we used an RCT design, and treatment employers primarily received information about the STC program through mailings, emails, and webinars. We divided the balance of the state into a treatment region and a control region, which were closely comparable in size, industry composition of employers, and prior use of STC. For this part of the state, we used a quasi-experimental design (QED). Employers in the treatment region received the same interventions as treatment employers in the Portland RCT study, but state staff supplemented that outreach with presentations to employer groups. In addition, employment agency staff outside of the UI office and other stakeholders received training on the STC program so that they could disseminate information about the program. Exhibit 1 provides an overview of the RCT and QED designs in Iowa and Oregon.

Exhibit 1. Schematic of study design



Economic Context for the Demonstrations

The study took place during a prolonged economic expansion. Because employers' use of the STC program is highly sensitive to economic conditions, rising during contractions and falling during expansions, we expected that the improving economic conditions in both states might dampen any short-term response to the interventions, particularly in Iowa, where the unemployment rate was especially low.

Study Findings

The study addresses questions in four areas: (1) employer awareness of STC, (2) employer use of STC, (3) costs to states of implementing the STC outreach efforts, and (4) other potential barriers to use of the STC program.

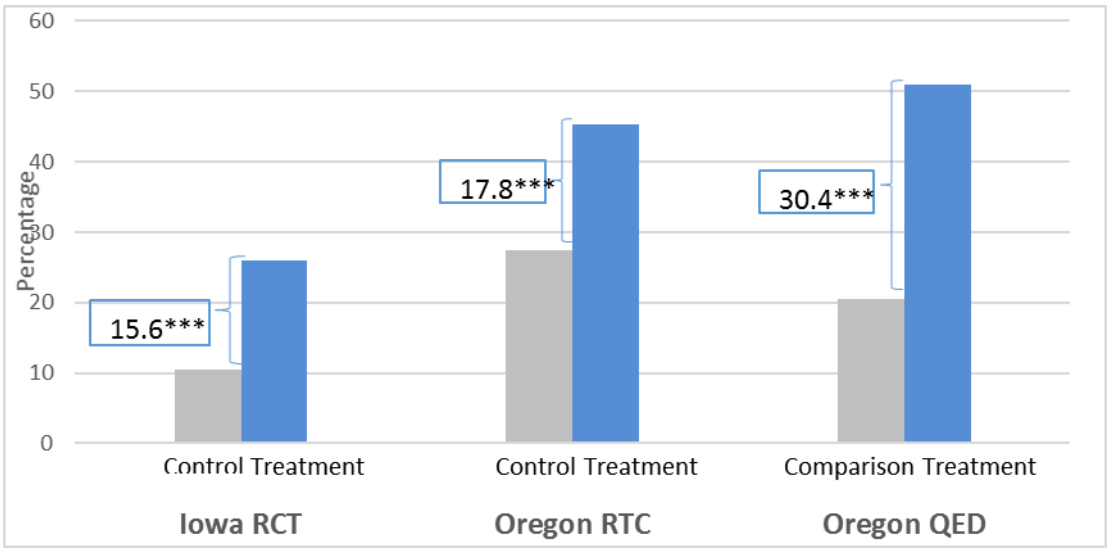
1. What were the effects of the interventions on program awareness?

To assess whether the outreach interventions significantly increased employers' awareness of the program, we conducted a short, three-question survey of employers about six months following the conclusion of the information campaign in each state. In the survey, employers were asked if they had heard of the STC program, and if so, when they had first heard about the program and how they had heard about the program.

- *The information campaigns significantly increased employer awareness of the STC program in both states*

As depicted in Exhibit 2, in Iowa, 26.0 percent treatment employers compared to only 10.4 percent of control employers responded that they were aware of the state's STC program, indicating that the outreach more than doubled employers' awareness of the program. In the RCT Oregon study, 45.3 percent of treatment employers and 27.5 percent of control employers reported knowing about the STC program; in the QED study, 51.0 percent of employers in the treatment region and 20.6 percent of employers in the comparison regions respondents reported knowing about the program.

Exhibit 2. Employer awareness of STC program in Iowa and Oregon



Notes: Percentages are based on weighted responses, which adjust for nonresponse bias. *** indicates statistical significance at the 99% level of confidence.

Consistent with the outreach having a large effect on awareness, treatment employers were much more likely than control or comparison group employers to report that they had learned about the program following the start of interventions. Similarly, in Iowa, the number of treatment employers contacting the state for additional information about the STC program was almost double the number of control employers contacting the state for information, and in Oregon, it was four times higher.

- *Mailings were highly effective in raising employer awareness.*

We use data from the short employer survey, interviews, and administrative tracking systems put in place for the demonstrations to shed light on the effectiveness of the demonstrations' outreach mechanisms. Regarding the last, in both states, promotional material distributed to treatment employers included a URL that linked to information about the STC program and was specific to the intervention. In addition, when employers contacted the state about the STC program either via email or a phone call, state staff collected information as to whether the employer was in the treatment or control group and how the employer learned about the program.

In the survey, treatment employers in both states were significantly more likely than control employers to cite mailings as the source of their information on STC. Tracking data on STC website hits and queries to state staff also point to the effectiveness of mailings in generating interest in the program. Multiple mailings, however, appear to have diminishing returns and, in several cases, state staff fielded complaints about multiple mailings. Emails to treatment employers in Oregon also generated many website hits. In addition, Oregon staff viewed webinars as a cost-effective way of providing information to employers.

- *Establishing robust networks among state staff, employers, and other stakeholders are likely to be important for disseminating information about the STC program in the longer term.*

Oregon staff made about 40 presentations to employer groups in the Oregon QED treatment region and provided information on STC in many one-on-one meetings. The number of Oregon employers directly reached through such meetings during the demonstration was small relative to the number reached by mailings, and evidence that these other channels increased employer awareness of the program was limited. Nevertheless, feedback from staff and employers on the presentations was generally positive. The supplemental outreach in the Oregon QED study also involved disseminating information to other state staff and stakeholders who, in turn, could counsel employers experiencing a decline in business about the option to use STC in lieu of layoffs. Indeed, employers who are aware of the program often report learning about it informally, such as by word of mouth from other employers and employees. This evidence, along with sentiments expressed by state staff during discussions and interviews, leads us to conclude that establishing robust networks for disseminating information could be important to increasing employer interest in the program in the longer term.

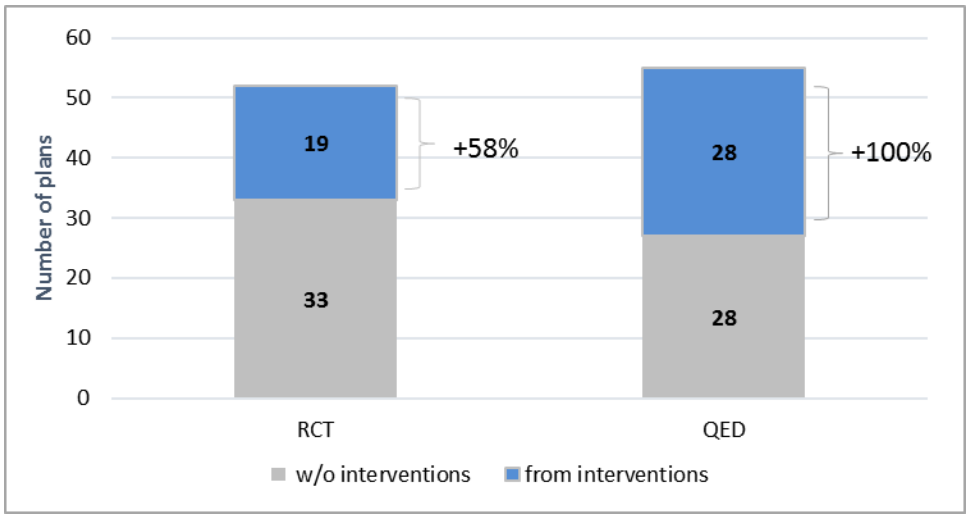
2. What effects did the informational campaigns have on program use?

Each state provided detailed UI administrative data for treatment and control employers for about two years prior to and two years following the start of the interventions. These data include information on STC use and employer characteristics (e.g., size, industry, location, UI tax rate and benefits charges). Using these data, we estimate models that show the change in use of STC from before the interventions to after the start of the interventions among treatment group members relative to control or comparison group members.

- *The informational campaign in the Oregon demonstration had an economically large and statistically significant effect on plan use in both the RCT and QED studies.*

For the Portland metro area, which made up our RCT study, we estimate that the outreach resulted in an additional 19 to 24 plans, which represented a 58 to 86 percent increase over baseline. For the QED study, we estimate that outreach resulted in an additional 28 or 29 plans during our observation period, which represents roughly a doubling of the number of plans. Exhibit 3 displays the more conservative of these estimates.

Exhibit 3. Estimates of increase in STC plans among treatment employers from interventions, Oregon RCT and QED studies



Note: Values derived from models to show estimated number of plans over the two-year period following the start of the interventions.

The take-up rate in the first year, during which the outreach took place, was greater among Oregon RCT and QED treatment employers than it had been two years earlier when the unemployment rate was about two percentage points higher. Because STC use is highly sensitive to economic conditions, this finding provides further evidence of the effectiveness of the Oregon campaigns in increasing STC use. Use of STC dropped sharply toward the end of our observation period. The rapidly improving economic conditions in Oregon were likely a contributing factor to the decline.

Our analysis also indicates that the information campaigns in Oregon increased use both among prior STC users and among employers who had not previously used the program. These findings suggest that, *at least until the program becomes well known, continued outreach about STC will be important, particularly during a recession.*

- ***The information campaign had no effect overall on STC use in Iowa during our study.***

Very few Iowa employers established STC plans during the study, and despite the higher number of queries about the program from treatment employers, the number of treatment and control employers establishing STC plans was about the same. The information campaign in Iowa was similar to the one in the Portland RCT, and there is no reason to believe that Iowa employers would respond differently than Oregon employers to the information. Instead, the strong economic conditions prevailing in Iowa throughout the demonstration, and possibly institutional factors, likely contributed to the absence of any effect.

- *Evidence from Iowa indicates that employers may be sensitive to the effects of STC use on their UI taxes.*

During the first half of the demonstration, Iowa used federal reimbursement of STC benefits payments to relieve employers of STC benefit charges, which meant that, during this time, use of STC—unlike layoffs—was unlikely to affect an employer's UI tax rate. The state communicated this tax holiday for STC benefits to treatment employers through two mailings. Our analysis indicates that some treatment employers responded by increasing the intensity of their use of STC during the tax holiday period. Although we must caveat this finding because it is based on a small number of employers, it suggests that relieving employers of STC benefit charges may stimulate STC use and thereby mitigate unemployment, particularly during a recession.

3. What were the costs of the interventions?

State staff supplied data on time spent on specific STC tasks along with expenditures on printing, mailing, and related costs. These data show that:

- *Significant increases in program awareness can be achieved with relatively modest direct expenditures and staff time.*

The direct costs for all mailings were about $62,000 in Iowa and about $80,000 in Oregon. We estimate that including staff time, the total costs of the interventions in Oregon, which also kept track of the time staff spent on the demonstration, was $100,000 or less. Because the demonstration in Iowa required less staff time, the total costs of the Iowa demonstration would have been considerably less.

DOL awarded STC grants to 15 states with STC programs, including Iowa and Oregon, for improving implementation and promotion. The experiences from the Iowa and Oregon demonstrations suggest that the federal STC grant funds should enable these states to substantially raise awareness among employers about the program and, when economic conditions are weak, increase STC use.

4. What are other potential barriers to STC use?

Besides lack of awareness among employers, the administrative costs that both employers and state agencies incur in operating STC plans are often cited as a reason for low program take-up.

To shed light on the importance of other factors, we collected information from (1) the perspective of employers, on the main motivations and barriers to using STC and (2) the perspective of the states, on burdens in administering the program that may inhibit their willingness to expand STC.

Employers who had previously used the STC program were surveyed on their experiences. In addition, a convenience sample of employers participated in an hour-long, semi-structured interview, which probed them on their views about and experiences with the STC program. Information on burdens or problems associated with administering the STC program comes primarily from semi-structured interviews with staff in Iowa and Oregon.

- *Employers who have used STC generally do not view the costs of applying for and administering plans as a barrier to use, and a large majority are very satisfied with the program.*

While some employers expressed a desire to reduce administrative costs associated with participating in STC plans, the employer survey and employer interviews revealed high levels of satisfaction with the STC program. Employers reported using the program to maintain employee morale and retain skilled or otherwise valued employees, and a large majority of surveyed employers in both states reported that using STC was "very important" to their business survival. Moreover, over 90 percent of surveyed employers in both states indicated that they would recommend STC to other employers and that they would consider using the program again. Evidence from the employer interviews corroborate the survey findings.

- *The costs to states of administering the STC program may be a significant barrier to program expansion.*

From the state's perspective, setting up STC plans and processing claims is likely to be more time-consuming than processing regular UI claims, particularly in states such as Iowa and Oregon where the process has not been automated. For this reason, states may be reluctant to promote the program or may place restrictions on employer use of STC. Recognizing these potential problems, MCTRJCA provided funding to states to improve administration of their STC programs.

Interviews with state staff emphasized the importance of improving technology to handle STC applications and process claims more efficiently. The need for technological improvements was especially great in Iowa, where staff members continued to enter STC weekly claims filings manually. During the demonstration, the state restricted the ability of large Iowa employers to alter the hours of employees on STC from week to week because of the administrative burden to the state of processing these claims.

Conclusions from the Demonstrations

Our findings generally support the hypothesis that employers' lack of awareness about the STC program is a significant constraint on its use. Although the overwhelming majority of prior-STC users report positive experiences with the program, relatively few employers in Iowa and Oregon know about the option, as has been documented in other STC states.[4] The demonstrations showed that, with relatively modest expenditures and staff time, employer awareness of STC and, in Oregon, employer use of the program could be significantly increased. The interventions developed for these demonstrations, which are detailed in the main report and appendices, provide potentially useful models for other states seeking to promote their STC programs.

[4] See, for example, Balducchi, David et al., *Employer Views about the Short-Time Compensation Program: A Survey and Analysis in Four States*, Final Report. IMPAQ International: September 30, 2015. Report prepared for U.S. Department of Labor, Employment and Training Administration.

1 Introduction

Short-time compensation (STC), also known as work sharing, is an optional program within some state unemployment insurance (UI) systems. Under STC, employers experiencing a temporary reduction in business reduce the average hours of employees in lieu of laying off workers. Employees with reduced hours receive UI benefits in proportion to the reduction in their hours, while businesses can retain valued employees and prevent company morale from deteriorating. Although the STC program has the potential to mitigate unemployment and its adverse effects on workers and communities, few employers have used the program, even during the Great Recession. A leading hypothesis for the low take-up among employers is lack of awareness of the STC option. To better understand and address this barrier to STC use, the Chief Evaluation Office (CEO) of the U.S. Department of Labor (DOL) contracted with Westat and its subcontractors—the Upjohn Institute for Employment Research and Social Dynamics—to conduct a demonstration and rigorous evaluation of the STC programs in Oregon and Iowa. The demonstration is designed to assess the effectiveness of interventions in increasing employer awareness and use of STC.

1.1 Background on Short-Time Compensation

The objective of STC is to avoid layoffs during periods of reduced labor demand and prevent the unemployment rolls from swelling. California first initiated the STC program in 1978, and Congress adopted a temporary national STC program in 1982 under the Tax Equity and Fiscal Responsibility Act (TEFRA, P.L. 97-248). The STC program became permanent in federal law in 1992, giving states permission to adopt their own STC programs as part of state UI laws. Under Section 303(a)(5) of the Social Security Act and Section 3304(a)(4) of the Federal Unemployment Tax Act, the Unemployment Trust Fund can pay for STC. Each state has an account within the fund from which it pays UI benefits.

States that choose to participate must adopt the STC program as part of their state UI law. The state UI agency is responsible for administering the program. Interested employers in a state with an STC program file an application to establish an STC plan. The state agency reviews the application to determine eligibility of the employer and the employees to be covered. Typically, states approve an STC plan for up to 52 weeks. States vary in the degree of flexibility they allow employers regarding employee participation and the percentage reduction in hours on a weekly basis. Employer UI taxes are experience rated, and STC benefit payments can raise an employer's tax rate in the same way that regular UI benefit payments can.

Employees need to meet state UI eligibility requirements to participate in an STC plan and receive benefits. Employees must be eligible for regular UI, except that the employees meet the work availability and work search requirements by being available for their usual hours of work with the STC employer. Depending on the state, either the employer or the affected unit employees submit initial claims for STC benefits to the state agency. For employees laid off after receiving STC, their entitlement to regular UI benefits is reduced by the amount of the benefits received under STC.

Employer participation in STC programs has always been low.[5] The STC program has rarely reached one percent of UI claims paid annually and at its peak reached only 2.9 percent in 2010. The literature on STC offers several reasons for the low take-up. First, from the perspective of state agencies, some may not promote the use of STC programs because of the administrative burden associated with STC. Several factors may make the costs of administering the STC program relatively high: states must approve STC plans drawn up by employers; for any workforce reduction, the number of workers on STC is greater than the number who would be laid off to achieve that reduction, and thus the number of UI claims processed is higher; employers may seek to change weekly hours worked by STC participants, thus sometimes requiring state staff to process weekly updates to UI claims for these workers; and the systems for processing STC applications and claims often are not automated.[6] Additionally, some states have been concerned that expanding the STC program would deplete their UI trust funds.[7]

Second, from the perspective of some employers facing temporary downturns, using STC may not be a cost-effective approach. Unlike the situation in many other advanced economies, in the United States, there are few legal barriers to laying off employees, and employers may find the STC application and reporting process burdensome. In response to the latter, some states have adopted electronic administration systems to facilitate enrollment. Employers also may be concerned about potential effects STC will have on their UI tax rate. Just as with regular UI benefits associated with layoffs, STC benefits will be charged against the employer's UI account and so could increase the

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[5] See Julie M. Whittaker, *Compensated Work Sharing Arrangements (Short-Time Compensation) as an Alternative to Layoffs*, Congressional Research Service, November 1, 2016, and see Katharine G. Abraham and Susan N. Houseman, "Short-Time Compensation as a Tool to Mitigate Job Loss? Evidence on the U.S. Experience during the Recent Recession." *Industrial Relations: A Journal of Economy and Society* 53(4): 543-567, 2014.

[6] See discussion in U.S. Department of Labor, Employment and Training Administration, *Implementation of the Short-Time Compensation (STC) Program Provisions in the Middle Class Tax Relief and Job Creation Act of 2012 (PL 112-96)*, Report to the President and to the Congress, February 22, 2016.

[7] Concern over the impact of STC on states' UI trust funds dates to the early years of STC in the United States. The first report commissioned by the DOL on STC discussed this issue; see Stuart Kerachsky, et al. *An Evaluation of Short-Time Compensation Programs*, Report prepared by Mathmatica Policy Research, Inc. for the Office of Strategic Planning and Policy Development, Employment and Training Administration, USDOL, December 1985. See also Berkeley Planning Associates and Mathematica Policy Research, *Evaluation of Short-Time Compensation Programs*, Final Report Submitted to the U.S. Department of Labor, Employment and Training Administration, 1997. The 2012 MCTRJCA refunded states for the STC benefits paid out for up to 3 years. Because of concern over the health of state trust funds following the recession, the law permitted states to add the funds to their UI trust fund rather than credit employer accounts.

employer's UI tax rate. Employers can legally reduce workers' hours without setting up an STC plan and thus may avoid incurring any UI benefit charges.[8]

Another reason commonly offered for the low take-up–and the motivation for this study—is that relatively few employers know about the program. A five-state study conducted for DOL in 1997 concluded, "STC has failed to attract substantial interest among employers, and lack of information about the program may be partially responsible. Some evidence exists that improved marketing of STC to employers can raise participation levels, but such strategies have not been systematically tested."[9] A 2015 study for DOL, which surveyed employers in Kansas, Minnesota, Rhode Island, and Washington to examine employers' experiences, awareness, and perspectives about the STC program, reached a similar conclusion.[10] Although the survey evidence indicated that participating employers were very satisfied with their state's STC program, only about a third of non-STC employers knew about the program. STC employers reported learning about the program primarily from the state UI agency and from other employers, suggesting that there is considerable need for promotional efforts to expand awareness. Anecdotally, in Rhode Island, the state where administrators have been most aggressive about promoting STC, take-up rates have been substantially higher than in other states, suggesting that a robust information campaign could have large effects on use, particularly during a recession.[11] Although there is reason to believe that a "better advertised, more generous and less bureaucratic system" would lead more employers to use STC in lieu of layoffs,[12] none of these hypotheses has been experimentally tested.

Interest in STC increased in the United States during and in the aftermath of the Great Recession. Research indicates that widespread use of such programs in Europe and Japan significantly mitigated unemployment during the global recession.[13] However, at the start of the recession, only 17 states offered programs, and, as noted, STC adoption in most states with programs was low. To address

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[8] Employers potentially benefit from providing their employees with access to prorated UI benefits through the STC program, however; possible benefits include reduced turnover and higher employee morale. If the cut in hours is sufficiently great, workers in some states may be eligible to receive partial unemployment benefits, which would be charged to the employer's account.

[9] *Ibid.* Berkeley Planning Associates and Mathematica Policy Research, op. cit.

[10] Balducchi, David et al., *Employer Views about the Short-Time Compensation Program: A Survey and Analysis in Four States*, Final Report. IMPAQ International: September 30, 2015. Report prepared for U.S. Department of Labor, Employment and Training Administration.

[11] Whittaker, Julie M., *op. cit.* STC claims as a percentage of regular UI first payments reached 15.9 percent in Rhode Island in 2009, compared to 5.5 percent in Oregon and 3.0 percent in Iowa. See also discussion about Rhode Island's efforts to promote the STC program in Katharine G. Abraham and Susan N. Houseman, "Encouraging Work Sharing to Reduce Unemployment," in "Policies to Address Poverty in America," Melissa S. Kearney and Benjamin H. Harris, eds. Washington, DC: The Hamilton Project, Brookings Institution. 2014.

[12] Baker, Dean. "Work Sharing: The Quick Route Back to Full Employment," June 2011. Center for Economic and Policy Research.

[13] Organisation for Economic Cooperation and Development (OECD). "Moving Beyond the Jobs Crisis." *Employment Outlook*. Paris: OECD Publishing. 2010.

low use of STC, the Middle Class Tax Relief and Job Creation Act of 2012 (MCTRJCA) includes provisions designed to expand the number of states offering an STC option in their UI program and to increase plan adoption in states with STC programs.[14] Specifically, Subtitle D, Title II of the MCTRJCA lays out a clear definition of the requirements of an STC program and provides DOL with the authority to oversee and improve the program, as well as to encourage and support states as they implement or improve an STC program and promote the program and enroll employers. In addition, the MCTRJCA provided for temporary federal STC programs and temporary federal reimbursement to states of STC benefits paid. The federal reimbursement was available to states for STC benefit costs incurred for a period of up to 156 weeks (3 years), or until August 22, 2015, whichever occurred first. Finally, and most relevant for this study, the legislation provided up to $99,750,000[15] in grants to states for promotion of the STC program and enrollment of employers and for improved administration of the program. Thus, the federal legislation recognizes lack of program awareness, along with administrative costs to employers and states operating the program, as potentially significant barriers to expanded use of STC.

1.2 Demonstration and Evaluation of STC

In this study, we conducted demonstrations in Iowa and Oregon, which ran from early September 2014 until September 2015 in Iowa and from late October 2014 through October 2015 in Oregon. Our study team designed the demonstrations to assess the effectiveness of interventions to increase awareness and use of STC. We selected these two states because they have long-established STC programs, were not involved in other DOL-funded studies, have a relatively large manufacturing base, historically did not have high STC use, and had a UI director with a strong interest in promoting STC and, more generally, in the demonstration and evaluation study. Our study team worked with state staff in Iowa and Oregon to develop better informational and promotional materials about the STC program and, during the 12-month demonstrations, to disseminate this information through a variety of mechanisms to treatment employers in each state. The principal goal of the demonstrations was to assess the effectiveness of the interventions in increasing awareness of STC and take-up of STC plans among employers.

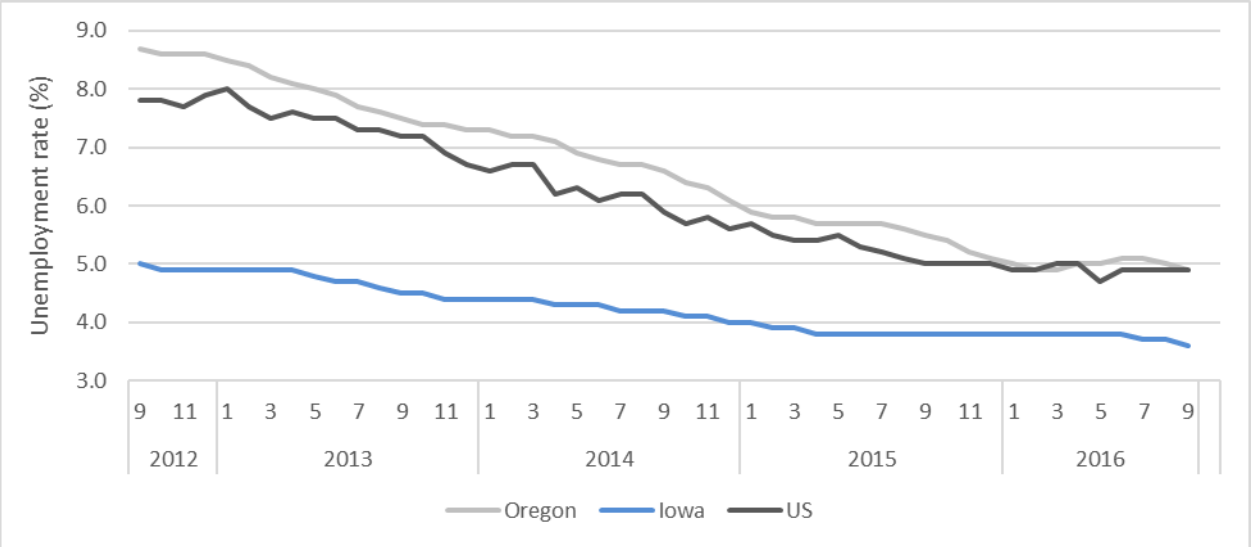
Because STC is designed to accommodate workforce reductions due to a non-seasonal, temporary reduction in business, STC use is closely tied to the state of the economy, rising during downturns and falling during recoveries. We anticipated that the economic conditions prevailing in these states during the demonstration and observation period would affect study outcomes. Figure 1-1 displays the unemployment rates in Iowa, Oregon, and the aggregate United States from September 2012

[14] Currently, 26 states are operating STC programs. The appendix to Chapter 1 in Appendix A contains a listing of the STC states by date of the program's enactment.

[15] Section 2164 of MCTRJCA authorized a total of $100 million for these grants, less a reduction of 0.25 percent that the Secretary of Labor could use to provide outreach and share best practices of STC programs.

through September 2016, a period that starts approximately two years before and ends approximately two years after the start of the interventions in each state. In September of 2014, about the time the interventions commenced, Oregon's unemployment rate was 6.6 percent, 0.7 percentage points above the national average, while Iowa's was 4.2 percent, 1.7 percentage points below the national average (and 2.4 percentage points below Oregon's unemployment rate). Between September 2014 and September 2016 (which spans the intervention and 1-year follow-up period), Oregon's unemployment rate fell by 1.7 percentage points to 4.9 percent, the same as the national average. Over the same two-year period, Iowa's unemployment rate fell by 0.6 percentage points, from 4.2 to 3.6 percent, remaining more than a percentage point below the rate in Oregon and the national average unemployment rate. We would expect the improving Oregon economy and, especially, the strong and improving Iowa economy, to dampen STC use overall and reduce the chances of observing a significant short-term impact of the interventions on STC take-up.

Figure 1-1. Unemployment rates in Iowa, Oregon, and the U.S., September 2012 through September 2016



In this final report, we present our findings regarding tests of the effectiveness of the demonstration interventions in increasing (1) program awareness among treatment employers and (2) STC use among treatment employers during the 24 to 25 months following the start of interventions. We also present descriptive evidence on the effectiveness of specific interventions in raising employer awareness about the STC program and the costs of implementing those interventions. Finally, we present some descriptive evidence on other factors that may significantly affect STC program adoption. This information—which was garnered from an employer survey, employer interviews, and interviews and discussions with state staff—addresses costs and benefits of participating in the program from the employer perspective and burdens associated with administering the program from the perspective of state staff. This evidence provides important context for our main findings pertaining to lack of awareness as an impediment to STC use.

The remainder of the report is organized as follows. We begin in Chapter 2 with a discussion of the design for the study, including the research questions addressed, the interventions administered in each state, the study timeline, and monitoring mechanisms put in place for quality assurance. In Chapter 3, we describe data collection activities and the methodologies used to address each of the research questions. We present causal estimates of the effect of the package of interventions on employer awareness of STC and descriptive evidence on the effectiveness of specific interventions in Chapter 4. In Chapter 5, we present causal estimates of the effect of the interventions on employer use of STC. In Chapter 6, we present descriptive evidence on factors, besides program awareness, that affect program use. Finally, in Chapter 7 we summarize the study's findings and offer lessons from the demonstration for other states seeking to increase employer awareness of their STC program.

2 Evaluation Design and Analytic Approach

2.1 Purpose of Evaluation and Evaluation Questions

The STC literature indicates that employers' lack of awareness of the STC program is a primary reason for low employer usage. A study conducted for the U.S. Department of Labor nearly 20 years ago flagged lack of awareness as a potentially major reason for the low program use, but indicated the need to test this hypothesis.[16] Recent studies have documented the low awareness among employers about the program in states that offer the option, as well as views among STC administrators that this factor is a major impediment to use.[17] In view of the perceived importance of raising employer awareness, the MCTRJCA provided funding to promote STC in states that offer this program. The interventions in Iowa and Oregon, therefore, focused on developing and disseminating informational materials about the STC programs with the goal of increasing awareness of the program. The states implemented the interventions, which primarily involved informing employers about the program and its potential benefits over a 12-month period, starting in mid-September 2014 in Iowa and late October 2014 in Oregon. We evaluate the effects of the interventions on awareness and use of the STC program among treatment employers during the demonstration period and a one-year observation period following the end of the demonstrations, during which Iowa and Oregon refrained from promoting the program to employers.[18] We designed the study to test rigorously whether the package of interventions implemented in each state was effective in raising awareness and whether increased awareness translated into significantly greater program use. We also collected descriptive information on the effectiveness of specific interventions and data on the costs to the states of implementing the interventions. In addition, we collected selected data on other factors that may significantly affect STC program adoption, which we use to provide descriptive evidence on the costs and benefits to employers of participating in the program and burdens associated with administering the program from the perspective of state staff. This evidence provides important context for our main findings pertaining to lack of awareness as an impediment to STC use.

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[16] Berkeley Planning Associates and Mathematica Policy Research, *Evaluation of Short-Time Compensation Programs*, Final Report Submitted to the U.S. Department of Labor, Employment and Training Administration, 1997.

[17] Balducchi, David, et al., op. cit. Abraham, K. G. and Susan N. Houseman. *Short-time compensation as a tool to mitigate job loss? Evidence on the U.S. experience during the recent recession.* Kalamazoo, Michigan: W.E. Upjohn Institute for Employment Research. (2012).

[18] Had the states promoted the program to all employers, including those in the control or comparison groups, during the observation period, it would have compromised our ability to assess the effects of the interventions.

Through this evaluation, we aim to answer the following research questions in the areas of (1) program awareness, (2) program use, (3) costs of implementing the interventions, and (4) other factors affecting program use:

- **Program awareness**
  - What were the effects of the interventions on program awareness?
  - What were the effects of specific interventions on increasing program awareness?
- **Program use**
  - What effects did the set of interventions have on employer use of STC and its use relative to layoffs?
- **Costs of interventions**
  - What were the direct and staff costs associated with implementing the interventions in each state?
- **Other factors affecting program use**
  - Among employers, what appear to be the main motivations for and barriers to using STC?
  - From the state's perspective, are burdens of administering the STC program a significant barrier to expanding it?

Below, we begin by summarizing the basic study design used in the demonstrations in Iowa and Oregon. We then outline our methods for addressing each of the questions. We provide detailed information on our methodologies, along with the rationale for selecting Iowa and Oregon as the demonstration states, in the appendix to Chapter 2 in Appendix A. We provide more detail on the data used to support the analyses in Chapter 3.

2.2 Study Designs in Iowa and Oregon and Their Supporting Rationale

Although evaluation methodologists regard an RCT design as the "gold standard," an RCT study methodology places constraints on the types of interventions that are feasible. As researchers administer the intervention to the treatment group in an RCT design, they must exclude members of the control group from receiving the interventions. Consequently, certain interventions believed to be particularly effective in increasing employer awareness may be incompatible with an RCT design.

The project's Technical Working Group emphasized the need for staff at agencies responsible for administration of the STC program to embrace education and outreach to business groups and other government agencies that interact with businesses. The group believes that business leaders and selected government representatives are in the best position to promote the STC program, but few who regularly interact with businesses are familiar with the program and its potential benefits to employers and their employees. Examples of interventions that follow this approach include offering presentations on the STC program to employer groups at forums such as chamber of commerce meetings or one-on-one discussions about the STC program between local workforce or economic development representatives and an employer that is considering workforce reductions. However, chamber of commerce meetings cannot reach employers in the treatment group while excluding employers in the control group and, once state and local government or business representatives in an area are educated about the STC program, it is unrealistic to expect them to convey this information only to employers in the treatment group. Outreach via media outlets also is not feasible using an RCT design.

We viewed using a broader set of channels to promote the program as potentially effective for increasing employer awareness and use of STC. Limiting the set of approaches to those that were compatible with an RCT design might have limited the study's usefulness as a model for other states. In view of these considerations and the specific interests and capabilities in each of our demonstration states, we implemented an RCT design in Iowa and a mixed-methods design in Oregon.

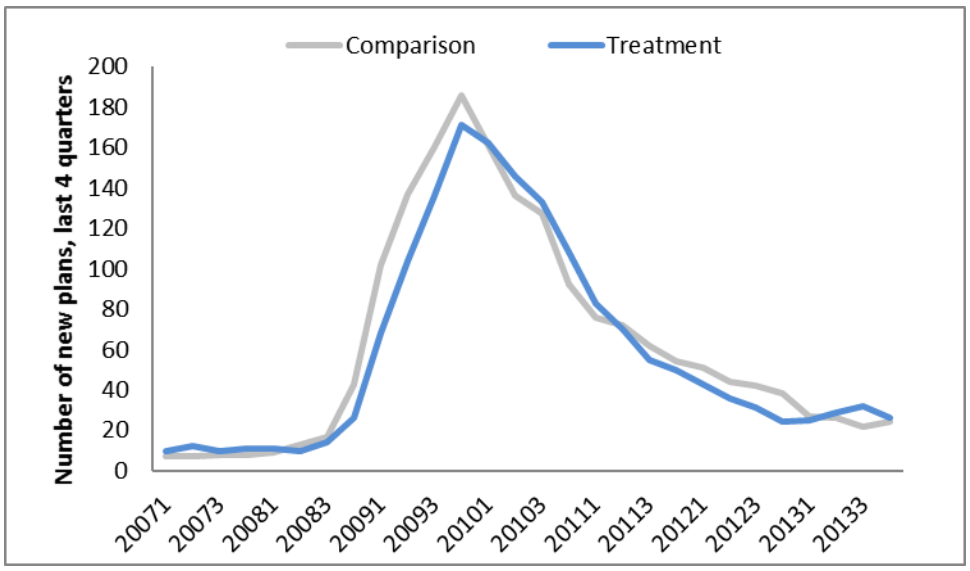
2.2.1 Randomized Control Trial in Iowa and in Portland, Oregon

An advantage of an RCT design is that randomization should minimize differences in observed and unobserved characteristics of treatment and control group members so that the difference in mean outcomes between treatment and control groups is an unbiased estimate of the effects of the intervention on the outcomes. In our study, employers eligible for the treatment interventions were those who were in business and not operating an STC plan at the start of the intervention and who were eligible to participate in the STC program. In Iowa, all employers covered by UI and who have five or more employees may establish STC plans. In Oregon, all employers covered by UI and who have three or more employees may establish STC plans. For Oregon, we applied an RCT only for employers in the Portland metropolitan area. Outside of the Portland metropolitan area, we divided the balance of the state into a treatment region and a comparison region for a quasi-experimental design (QED) that would enable us to test a package of interventions including measures not feasible in an RCT design. We provide details on the procedure for assigning employers to treatment and control groups in each state in Appendix A (the appendix to Chapter 2).

2.2.2 Quasi-experimental Approach in Oregon

The Oregon Employment Department (OED) divides the state into 15 state Worksource Regions for the purposes of delivering services. The QED used Worksource Regions located outside of the Portland metro area as the basis for employer assignment: all employers located in one set of Worksource Regions received interventions, while no employers located in the other set of regions did. We refer to these as our "treatment" region and "comparison" region, respectively. The areas designated as treatment and comparison regions were selected to balance on key factors: metropolitan areas (two each), the number of employers, the industry distribution of employment, and, most important, prior STC use. STC use, although fluctuating with the business cycle, had been near identical in the treatment and comparison regions in each of the 6 years preceding the demonstration, as shown in Figure 2-1. Portland is by far the largest metropolitan area in Oregon, and it would have been difficult to integrate Portland into a quasi-experimental design because assigning Portland to either the treatment or comparison region would have disrupted the balance between the two regions.

Figure 2-1. Number of new STC plans started in Oregon, by assignment group and year-quarter, 2007-2013



Note: Each data point represents the number of STC plans initiated in the indicated quarter and the prior three quarters for employers in the comparison and treatment regions in Oregon.

2.3 Interventions

The STC study team began discussing possible interventions for increasing employer awareness and uptake of STC with several staff members from both Iowa and Oregon in December 2013. The demonstration involved, first, developing and improving the materials for informing employers about the STC program and, second, using a variety of mechanisms to distribute these materials to

treatment employers. Interventions were similar in Iowa and the RCT component of the Oregon demonstration. In the QED component of the Oregon study, state staff supplemented the information that was provided to treatment employers in the Portland RCT with additional outreach, such as presentations at employer meetings and one-on-one meetings between OED staff and employers. Each state put in place quality control and tracking mechanisms to ensure that it properly administers interventions and to provide evidence on the relative effectiveness of the various outreach mechanisms. In addition, states provided data to determine the direct and staff costs of implementing the interventions.

2.3.1 Developing and Improving Information on the STC Program

Iowa had little in the way of promotional materials for its STC program prior to the start of the demonstration. We assisted Iowa in developing an enhanced webpage, fact sheet, brochure, and answers to frequently asked questions (FAQs). Prior to the start of the demonstration, IWD would send to interested employers a lengthy email message along with more than a dozen attachments, including a description of the program and forms to be filled out in order to gain plan approval and participate in a plan. Iowa staff concurred that the method of presenting these materials could overwhelm and confuse employers and discourage them from using the program. Therefore, we worked with state staff to simplify the materials and to provide much of the information via links to the website rather as email attachments.

A special feature of the Iowa interventions involved promotion of the STC program during the first 6 months of interventions when special tax benefits for STC usage were in place. Through February 21, 2015, Iowa received reimbursement from the federal government for most of STC benefit payments made to workers. Iowa opted not to charge STC employers for STC benefits for which it received federal reimbursement. Therefore, employers using STC in lieu of layoffs during this period incurred almost no risk of increasing their UI tax rate. We worked with the state to develop a brochure and fact sheet that emphasized the tax advantages of using STC during this "tax holiday" period. The states distributed these materials to treatment employers in the initial intervention mailings, sent during the period in which the state waived STC charges to employers for the federally reimbursed STC benefits.

Oregon already had developed materials about its STC program, but had not systematically promoted the program to employers. As with Iowa, we worked with the state to improve and update its materials. In addition, we worked with Oregon staff to develop a webinar, which included use of video excerpts on the Oregon STC program that had not previously been used. The QED component of the demonstration included presentations to other government staff and employers located in the treatment region. We assisted in the development of short and full-length presentations on the STC program.

2.3.2 Mechanisms for Delivering Information to Treatment Employers

During the study, the states used several mechanisms to deliver information about the STC program to all treatment employers. These mechanisms exploited existing methods of dissemination and were relatively low cost. For these reasons, if proven effective, these mechanisms could be continued in these states and generally could be replicated in other states. In addition, in the QED portion of the Oregon demonstration, there were broader outreach efforts via OED staff presentations on the STC program at employer forums and provision of information on the STC program during OED staff members' regular contacts with employers.

Table 2-1 provides a summary of the interventions in both Iowa and Oregon. Appendix B provides samples of the promotional materials used by each state during the demonstration. The table distinguishes between the interventions provided to all treatment employers—that is, the treatment employers in Iowa (an RCT study design), treatment employers in the Portland metro region (an RCT study design), and employers located in the treatment region in Oregon—and the supplemental interventions for employers in the treatment region in Oregon, which was part of the QED. We describe each of these interventions in detail below.

Table 2-1. Interventions used in the Iowa and Oregon STC demonstrations for treatment employers

Intervention mechanisms	Iowa	Oregon
Enhanced intervention mechanisms		
Program websites	Yes	Yes
Brochure	Yes	Yes
Frequently asked questions	Yes	Website only
Fact sheet	Yes	No
PowerPoint presentation, including video clip of testimonials	No	Yes
Mechanisms to deliver information to all treatments		
Mass mailing to employers	Yes	Yes
Emailing to employers (in advance of mailing)	No	Yes
Banner for employers filing quarterly wage report online	Yes	No
Banner for employers posting job listing on online portal	No	Yes
Mailing to employer following receipt of notice of claim letter	Yes	Yes
Insert with Tax Rate Notice to employers	Yes	No
Webinar	No	Yes
Mechanisms to deliver information to QED in Oregon only		
Presentations at employer organization meetings and/or conferences (e.g., Oregon Employer Council (OED), Chamber of Commerce) by subject matter experts and local workforce analysts	Not applicable	Yes
Email outreach from local OEC chapters to employers in the treatment region with information about the Work Share program and with an invitation to participate in Work Share webinars	Not applicable	Yes
One-on-one meetings between employers and workforce analysts, business employment specialists, and UI tax auditors	Not applicable	Yes
Education of stakeholders (e.g., local economic development and ES staff, legislators, and county commissioners) who regularly speak with employers and who can disseminate program information	Not applicable	Yes

NOTE: Oregon already had a video but did not use it for program promotion.

Interventions Provided to Treatment Employers. The interventions given to treatment employers were similar in the two states and included the following:

- **Direct mailings to all treatment employers.** State agencies used direct mailings that included a cover letter and a brochure (and, in the case of Iowa, a fact sheet), sent two times during the study period, September/November 2014 and June 2015.[19] In both states, mailings were sent to all treatment employers, and in the case of multi-establishment employers, to establishments with at least three (in Oregon) or five (in Iowa) employees.[20] In multi-establishment organizations, human resources decisions are often made at the establishment, not at headquarters, and direct mailings to establishments were intended to increase the chances that those making decisions about workforce reductions would be made aware of the STC option. In addition, in November 2015, shortly following the official end of the demonstration period, Oregon, on its own initiative, sent a mailing that included a magnet with information about the STC program to all treatment employers.

- **Direct mailings to treatment employers who received a notice of initial claim in a quarter.** Whenever a separated employee makes a claim for UI benefits, the state agency sends a notice of claim to the recent employer to validate the reasons for job separation. Since any UI benefits charged to an employer account can raise the employer's UI tax rate in the following year, employers usually pay attention to the notice of claim letters from the UI agency. The notice of claim letters may prompt the human resource staff in companies to seek ways of controlling UI benefit costs. The states sent a letter and brochure (and a fact sheet in Iowa) in the first month of each calendar quarter to any employer who received a notice of claim letter in the prior calendar quarter. Iowa sent the mailing four times and Oregon three times during the demonstration.

- **Emails (Oregon only).** Prior to the first mass mailing, Oregon sent an email to those treatment employers for whom it had an email address to alert the recipients to the direct mailing. The email contained a link to website information. Iowa determined that its email list (underdevelopment at the time) was too incomplete to utilize this mechanism.

- **One-page insert (cover letter and fact sheet) in the annual UI tax rate notice (Iowa only).** In Iowa, the one-page insert included a cover letter on one side and the fact sheet on the other side. The insert was included in the annual mailing to treatment

[19] Cost considerations precluded sending more than two mailings to all treatment employers.

[20] Employers are eligible to participate in STC programs if they have at least five employees in Iowa and at least three employees in Oregon. While an STC plan could be devised across worksites, this is unlikely to occur in practice. For cost reasons, mailings were limited only to establishments that met these thresholds.

group employers. For technical reasons, Oregon was unable to insert information on its STC program into the tax rate notice for treatment employers.

- **Banner that appeared when the treatment employer filed its quarterly wage report online (Iowa only).** The banner briefly described the STC program, provided contact information, and included an embedded link to the state's STC website. The state excluded employers for which third parties filed on their behalf. For technical reasons (no linking ability on the online report), Oregon could not implement this intervention.

- **Banner that appeared when a treatment employer listed job openings online with Oregon iMatchSkills.** The banner briefly described the STC program and provided contact information. An embedded link took the employer to the state's STC website to learn more. In recognition that these employers were seeking to hire rather than to lay off workers, we included the following language on the banner: "You are hiring and training new employees now. How will you protect those investments if your business experiences a temporary decline in activity in the future?"

- **Webinars (Oregon only).** In the second direct mailing, OED invited treatment employers to participate in a webinar on the STC program. In addition, treatment employers received emails about the webinar from the Oregon Employer Council (OEC), a public–private partnership between the OED and employers that at the start of the demonstration hosted eight local chapters in the treatment region. The OEC also sent emails to county commissioners, with the idea that these individuals might mention the webinars during subsequent interactions with employers.

State agencies provided several distinct URLs to employers for linking to the state STC website, each associated with a specific treatment mechanism. Oregon also included Quick Response (QR) codes on printed materials (for scanning with a cell phone or tablet to reach the STC website). The intention of the different URLs was to facilitate the tracking of traffic to the STC websites generated by the different mechanisms. For example, the Iowa Workforce Development (IWD) provided one URL in the print materials sent to treatment employers and another URL in the banner seen by treatment employers filing their quarterly wage report online. In addition, STC staff recorded the employer name, date, and, in Oregon, method of learning about the program for calls or emails about the STC program during the demonstration period and for 1 year afterward.

Supplemental Interventions in the QED Treatment Region in Oregon. We modeled the outreach in the QED region on approaches deemed successful in states with relatively high levels of STC use, most notably Rhode Island.[21] One strategy involved incorporating information about the state's STC program into state agency presentations to employer groups or into one-on-one discussions with employers. This, in turn, required developing a good set of slides and other informational materials for distribution during employer meetings. A second strategy involved educating staff in other government agencies and business organizations about the STC program. Other stakeholders often know of employers experiencing temporary business declines, and so they may play an important role in spreading the word to employers that might benefit from the program.

Using these basic strategies, we worked closely with OED staff to fine-tune outreach in the treatment region. We conducted regular phone calls and discussed these during in-person site visits. The mechanisms for outreach in Oregon took advantage of existing institutional arrangements through which OED interacts with Oregon employers. These included the OEC and the network of OED staff working in the treatment region, particularly the workforce analysts (economists) who regularly make presentations to business groups and meet with individual employers. The outreach strategies in the treatment region included presentations to employer groups by STC experts from the state office in Salem; presentations and webinars to employer groups by local workforce analysts; provision of information on STC during individual employer meetings by workforce analysts, business employment specialists, and UI tax auditors; and broader education and outreach to other local stakeholders.

- **Presentations by STC experts to OEC.** OED staff members gave presentations on the STC program to each of the OEC boards located in the treatment region. The experts distributed brochures about STC at these meetings. OEC board members had regular contacts with area employers, often knew of local employers experiencing difficulties, and could distribute informational materials to employers. In addition, OEC chapters had extensive email contact information on area employers, and those chapters located in the treatment region emailed information about the STC program to employers and invited them to participate in webinars about STC. In July 2015, the OEC and OED partnership ended and OED is no longer conducting such activities.

- **Presentations by STC experts to state staff.** Part of the outreach strategy in the QED study was to educate other OED staff about the STC program, so that they could inform employers about the program, as appropriate. STC experts provided training to

[21] Input received from the Technical Working Group members Ray Filippone, former UI director in Rhode Island, and David Balducchi influenced our interventions for use in the QED study. A discussion of approaches used in Rhode Island to promote the STC program is found in Katharine G. Abraham and Susan N. Houseman, "Encouraging Work Sharing to Reduce Unemployment," in *Policies to Address Poverty in America*, Melissa S. Kearney and Benjamin H. Harris, eds. Washington, DC: The Brookings Institution. 2014.

staff who had regular contacts with employers in the QED treatment region; these included workforce analysts, business service representatives, and UI tax auditors.

- **Presentations by workforce analysts.** Workforce analysts operating in the treatment region make an estimated 40 presentations to local employer groups each year. Following the training on the STC program, STC experts, along with the study team, helped analysts to develop slides to incorporate, along with a video on the Oregon program, into their regularly scheduled talks. The analysts distributed brochures on the STC program at these meetings. The goal of these presentations was primarily to introduce employers to the program and to refer interested businesses to state STC staff for further information.

- **One-on-one meetings with employers.** Workforce analysts, business service representatives, and UI tax auditors meet routinely with individual employers. These meetings typically are with medium and large employers. The state staff distributed informational materials about the program during meetings and advised employers to contact experts in the Salem OED office with any questions.

- **Education and outreach to other stakeholders.** We worked with OED to promote the STC program to state legislators and county commissioners in the treatment region. In addition, a number of employment services offices, economic development organizations, and business groups were located in the treatment region. Our study team and OED staff worked together to develop a systematic strategy to educate staff in these organizations about the STC program and to provide them with brochures to distribute to local employers.

- **Webinars.** OED invited all treatment employers in both the RCT and QED to participate in webinars on the STC program through a direct mailing. In the QED treatment region, OED advertised the webinar to county commissioners, who were encouraged to share the webinar information with employers in their county. In addition, OEC chapters located in the treatment region forwarded emails about the webinars from OED to member employers. OED hosted two webinars, one in June 2015 and the other in July 2015. About 40 employer representatives participated in each webinar.

OED staff who made presentations on the STC program to employer groups recorded the date of the presentation, the venue, the number and names of employers attending, and the number of brochures distributed. OED staff also reported any direct contacts with employers about the program, recording the date and name of the employer. The QR code on brochures distributed to employers in the QED treatment region at presentations, at local ES offices, or during one-on-one meetings differed from the code on the mailed brochures, facilitating the separate tracking of queries resulting from this direct outreach.

2.3.3 Quality Assurance and Monitoring

Our study team, in cooperation with IWD and OED, put tracking systems in place to identify which interventions generated the most traffic to the state's STC website and inquiries to state staff. In addition, during the study, the states collected and reported to the study team the data on time devoted to certain STC administrative tasks so that we could assess the costs of the interventions. Additionally, we conducted an implementation study using in-depth, semi-structured interviews with state administrators and employers in each of the demonstration states. The information collected from the state administrator and employer interviews provided valuable insights into problems encountered in implementing the interventions.

We emphasized to the states the importance of implementing the STC demonstration with fidelity to the RCT and QED designs to ensure that the study properly estimated the true causal impact of the intervention for the treatment group. The STC study team also monitored implementation activities to ensure that the state agencies provided the interventions to the treatment group employers only and that they were consistent with the study protocol. Most of the interventions involved the distribution of information about the STC programs to treatment group employers only. It was necessary to ensure that state agency staff members (and study team members) worked from the list of treatment group employers when preparing the distributions via mail, email, or online linkages, or making follow-up calls.

Our methods for monitoring included the following:

- Our study team discussed the proposed interventions with the states and the roles and responsibilities of state agency staff and the STC study team. These discussions guided development of the implementation procedures and quality assurance process. In the process of working with the agencies, we reinforced the study design requirements to ensure that agency procedures did not compromise the study. We provided an operations guide to each state agency as a reference tool that detailed the demonstration and evaluation procedures and the roles of the agency and the study team.

- Both states tracked and recorded all employer inquiries about the STC program in agency data systems over the 12-month demonstration period and an additional 6 months after the demonstration. IWD and OED tested these systems after 2 weeks of operation to ensure that they functioned properly. Our study team reviewed the output with agencies and made recommendations for corrections as needed.

- The state agencies also tracked the traffic to the agency's STC webpage resulting from intervention-specific URLs, as discussed above. We received monthly reports throughout the intervention period to ensure that the tracking was working properly. Oregon provided monthly values, whereas Iowa was able to show the number of daily hits.

- We felt it was imperative that agencies work only from the listing of treatment group employers, to ensure that the distribution of STC information via mail, email, and online went to the treatment group employers, and not to control group employers. Another challenge was to verify which employers saw the online banners because the modifications were to secured locations. Our study team requested a list of the employer identifiers (for whom the banners were placed) to compare to the list of treatment employers. We requested a written description of the testing protocol carried out by state staff to ensure proper implementation of the banner intervention.

- For hardcopy and email mailings, it was important to identify "undeliverable" mailings to treatment employers in the first round of mailings. Working with state staff, we endeavored to find a correct address for those employers in time for subsequent mailings. We worked with state agencies to secure new contact information through follow-up and/or tracking activities.

- Training of agency staff about the demonstration, about the importance of providing interventions only to treatment employers, and about the importance of recording of employer inquiries was critical to ensuring the proper implementation of the interventions. We worked closely with each agency to prepare and deliver (or monitor) the training.

- Our study team held weekly conference calls with each state agency to work through the development of processes and procedures for the interventions and throughout the demonstration period (later on a biweekly basis). During visits to Oregon in February 2015 and Iowa in August 2015, study team members reinforced the importance of the state agency staff members' roles and responsibilities to the study, of only providing treatment employers with the interventions, and of following procedures carefully.

- We also visited the states to conduct interviews with state staff and employers for the implementation study. These one-on-one interviews, during which individuals were assured strict confidentiality, provided further important evidence on fidelity in implementing the interventions according to plan.

2.3.4 Implementation of the Interventions and Fidelity

Table 2-2 provides a timeline for the demonstration project's interventions in each state. For the most part, each state administered the interventions according to plan and the mechanisms put in place to track inquiries to state staff and hits on STC websites operated correctly. There were some notable exceptions, which in Iowa involved an error with tax rate mailing and in Oregon a delay in implementing the supplemental interventions in the QED. The appendix to Chapter 2 provides

greater detail on fidelity issues, but there is no evidence that problems in implementing the interventions materially affected the study's outcomes.

Table 2-2. Activities and timeline for demonstration of the short-time compensation programs

Activity	Iowa Timeline	Oregon Timeline
Demonstration	September 2014 - October 2015	October 2014 - October 2015
Distribute first round of email	Not applicable	September 24, 2014
Mail materials to employers (1st mailing)	September 12, 2014 – September 16, 2014	October 1, 2014 – October 6, 2014
Banner on the online quarterly UI report	Once per quarter	Not applicable
Banner on online job listing portal	Not applicable	October 2014 - September 2015
Send insert with UI tax rate notice	Weeks of November 24, 2014 and January 9, 2015	Not applicable
Mailing following notice of claim	February, April, August, and October 2015	February, April, and August 2015
Distribute second round of email	Not applicable	Canceled
Mail materials to employers (2nd mailing)	June 2, 2015 – June 5, 2015	June 2, 2015 – June 5, 2015
Calls or other direct contact with employers	Not applicable	October 2014 - October 2015 (QED)
Employer group presentations	Not applicable	October 2014 - October2015 (QED)
Educate state legislators and staff	Not applicable	July 2015 - October 2015 (QED)

Note: UI=unemployment insurance.

Data Collection Activities and Methods for Addressing Research Questions 3

3.1 Data Collection Activities

The STC study team collected data from a variety of sources to support analyses of the impact of demonstration interventions and assessments of the costs of the interventions to states and the administrative costs to employers associated with participating in STC programs. These data came from UI administrative databases, adjunct administrative systems to track study intervention impacts and intervention costs, a follow-up employer survey, and semi-structured interviews with state administrators and employers. We describe these data sources briefly in this chapter and more fully in the appendix to Chapter 3 in Appendix A. Appendix C presents the data collection instruments.

3.1.1 Employer Survey

Our study team conducted two employer surveys in both Iowa and Oregon: a short-form and a long-form survey. The short-form survey sampled treatment and control establishments[22] that were eligible but had not used the STC program. The short-form survey (of a random sample of 3,123 treatment and control employers[23] who had not used the STC program and, in Iowa had not contacted the state agency about the program) contained three questions and was designed to capture information about awareness of the state STC program and determine when and how the employer learned about the program. To determine when employers who indicated that they were aware of the program first learned about it, we provided several date categories to the respondent, relative to the approximate date of the demonstration and the survey (before September 2014; between September 2014 and September 2015; after September 2015 but before the letter inviting them to participate in the survey; and the letter of invitation was the first they heard of it). For reporting purposes, we collapse these to "pre-intervention" and "post-intervention," where pre-intervention refers to the period before September 2014 and post-intervention refers to the period of September 2014 and afterward. To determine how employers learned about the program, we gave respondents a list of 14 information sources and permitted them to check multiple sources. Our study team administered the short-form survey at the establishment level, but with a sample

[22] An establishment is a single physical location of a firm/business. A firm consists of one or more establishments. For multiestablishment firms, mailings were sent to all establishments. Most firms have only one establishment.

[23] The sample included only 116 of the 3,108 control employers in Iowa who received information about the STC program with their UI tax rate notice through error. Among those 116 control employers, only 16 responded to the survey. We exclude those cases from the analysis.

designed to allow for the analysis of survey data at either the firm level or the establishment level. Because most firms (81.5% in Iowa and 91.2% in Oregon)[24] consist of only one establishment, the results do not differ substantially when analyzed at the firm or the establishment level, and we present only establishment-level findings in this report.

We administered a second survey (the long-form survey) to all firms that, in recent years (approximately 2009–2015), had used the STC program and, in Iowa, to employers who inquired about the STC program but did not set up a plan (165 in Iowa and 828 in Oregon). The long-form survey repeats the three questions in the short-form survey and adds others pertaining to why the firm chose to use (or chose not to use) STC as well as its experiences with the program, if applicable. The long-form survey gathered information on employer awareness of and attitudes about the STC program, employer burden to participate and administer the STC program, and employer characteristics. The long-form survey consisted of 33 questions.

Our study team launched the surveys with a letter of invitation mailed on February 29, 2016 (about six months after the end of the demonstration). Employers could complete the short-form survey online and by mail. We used telephone follow-up for non-respondents. We conducted the long-form survey online (about 10 minutes to complete). The appendix to Chapter 3 in Appendix A provides a more detailed description of the data collection for the employer surveys.

3.1.2 Implementation Study

Our study team conducted in-person, semi-structured interviews with state personnel and with employers in December 2014 shortly following the start of the demonstration (baseline) and in March and April of 2016, several months after the end of the demonstration (follow-up). The interviews provided information about the reactions to how the state agencies implemented the interventions and about what activities encouraged positive employer reactions and participation. We also used the interviews to develop explanatory hypotheses regarding why treatment outcomes did or did not occur. Our study team interviewed 8 employers in Iowa and Oregon at the baseline in 2014 and 35 at the follow-up in 2016. Although the number of employer interviews was small, and should not be used to generalize, they provided more in-depth exploration of issues than was possible through other types of data collections (e.g., the employer survey and programmatic administrative and tracking data). The appendix to Chapter 3 in Appendix A provides further details about the selection of respondents.

[24] Calculated from values in Tables A3-6 and A3-7 in the Appendix to Chapter 3.

3.1.3 Administrative Data and Data Systems to Support Impact Analysis

This section briefly summarizes administrative sources of data for the evaluation. We describe the adjunct systems designed to track responses to employer outreach efforts as well as UI administrative data used for assignment of employers in the RCT and QED studies and for impact analysis.

3.1.4 Development of Systems in Iowa and Oregon to Record Treatment and Control Group Queries on the STC Program

We established several mechanisms to capture information about employer inquiries during field operations. In each state, treatment employers received information about the STC program through several mechanisms. We used tracking data on the number of telephone calls, emails, and website hits that each outreach effort generated to address the first two research questions that pertain to the effects of interventions on employer awareness of the STC program and the relative effectiveness of the various interventions in increasing awareness.

Email and Telephone Call Tracking. In Iowa, IWD staff recorded selected information from employer telephone and email contacts on a daily basis in an Excel spreadsheet. IWD staff recorded employer ID, the mode of Voluntary Shared Work (VSW) inquiry, date of inquiry, the reason for the call, and the number of minutes spent responding. In Oregon, employer inquiries were also tracked in an Excel spreadsheet, on which the employer ID, the mode of inquiry, date of inquiry and of response, and notes on origin of employer knowledge about Work Share were recorded. Similarly, other OED staff who received an inquiry from an employer about the program filled out a form created for this project so that information on all inquiries could be included in the spreadsheet.

Website Tracking. Iowa established five separate URLs or web addresses that referred inquiries to the newly constructed webpage for VSW in the UI section of the IWD website. Each of the URLs related to a separate element of the experimental intervention such as a banner link from a quarterly wage report or a VSW insert in the mailing about monetary determination. IWD recorded statistics for hits on the URLs as counts by date and time. In Oregon, the OED project partners, like the partners in Iowa, tracked inquiries from several different elements of the intervention to the Work Share website. In addition, OED suggested directing employers to the website using a QR code that appeared on printed materials for the intervention so employers could simply scan the QR code to reach the Work Share website. Oregon reported the count of web hits on a monthly basis, but only Iowa provided daily counts.

3.1.5 Administrative Data

Iowa and Oregon provided UI administrative data covering the period of quarter 3 of 2012 through quarter 3 of 2016 to support analysis of the impacts of the interventions on key outcome measures.[25] We received three data files from each state. Data in these three files provided, or provided the basis for generating, outcome measures as well as a rich set of employer-level controls in the pre- and post-intervention period that we use in modeling the impacts of the interventions.

One file contained quarterly employer-level data, which include employer ID, an indicator variable equal to one if the employer was operating an STC plan during the quarter, and other descriptive information about the employer: UI tax rate, UI benefit charges, UI benefit ratio, total employment, total quarterly wages, taxable wages, and industry code. A second file contained quarterly earnings information for workers, with each record showing the earnings a worker received from an employer that the employee worked for during the quarter; in other words, an individual working for more than one employer during the quarter will have more than one record in the quarter.

A third file contained information on UI benefit payments. The unit of observation for these data is the person-week. The data include information on the type of UI benefit payment (e.g., STC, regular UI), the amount paid, and the maximum weekly benefit to which the individual was entitled. For those receiving STC benefit payments, we used the benefit payment divided by the weekly benefit amount to compute the percent reduction in each worker's hours and the number of workers on STC expressed on a full-time equivalent (FTE) basis. For instance, we can infer that hours of an employee on STC were cut by STC by 20 percent if that worker receives $50 in weekly benefits but is entitled to a weekly benefit amount of $250 if fully unemployed. Similarly, an individual's hour reduction would contribute 0.2 persons on STC on an FTE basis.

3.2 Methods for Addressing Research Questions

In this section, we describe the data and methods used to address each of research questions addressed in this study. Table 3-1 provides an overview of our approach.

[25] We also received administrative data from the states on employers for a limited number of variables to support stratified random sampling plans in Iowa and in the Portland metro regions, and to support the construction of treatment and comparison regions for the QED component of the Oregon demonstration. Our study team compiled data for the most recently completed and available 12-month period. In both states, the data period for sample design was 2012Q4 through 2013Q3. To ensure balance between treatment and control employers, the study team defined strata based on employment size, industry, geographic workforce region, and prior use of UI as evidenced by recent UI benefit charges.

Table 3-1. Overview of research questions, data sources, and types of analyses

Research question	Data sources	Type of analyses
Program awareness		
What were the effects of the interventions on program awareness?	Employer survey	Formal tests of differences between treatment and control/comparison groups
What were the effects of specific interventions on increasing program awareness?	Employer survey, administrative tracking systems measuring website hits, employer queries	Descriptive analysis
Program use		
What were the effects of the interventions on STC use?	Administrative UI data	Formal tests of differences between treatment and control/comparison group members based on statistical models
Costs of interventions		
What were the costs to states of the demonstrations' supplemental interventions?	Time sheet and other reporting by state staff	Descriptive analysis
Other factors affecting program use		
From the perspective of employers, what are main motivations and barriers to using STC?	Survey and interviews of employers who had used STC program, employer interviews	Descriptive, qualitative analyses
From the state's perspective, are burdens of administering the STC program a significant barrier to expanding it?	Interviews and discussions with state staff	Descriptive, qualitative analyses

3.2.1 What Were the Effects on the Interventions on Program Awareness? Methods for Assessing

Our primary focus is to assess whether, collectively, the inventions in each demonstration state increased awareness of treatment group employers relative to control/comparison group employers. In addition, we present descriptive evidence on the effectiveness of specific interventions.

What were the overall effects of the interventions on program awareness?

We rely primarily on data from the short-form employer survey to address whether the combined effects of the interventions increased program awareness. We present statistical tests of the effects of the interventions on program awareness, comparing responses by treatment and control/ comparison employers about their awareness of the program before and after the start of the interventions.

We used a t-test to assess differences between control/comparison and treatment employers, weighted to account for non-response bias. In Iowa, 1,097 respondents represent 42,424 Iowa establishments (calculated by applying final weights). In Oregon, 923 respondents represent 51,245 Oregon establishments. Only respondents who said they were aware of the STC program answered questions about when and how they learned about the program. The unweighted numbers for these two questions are 206 for Iowa and 331 for Oregon (139 for RCT and 192 for QED)[26] and represent 7,769 establishments in Iowa and 18,451 in Oregon (8,610 for RCT and 9,841 for QED).

The appendix to Chapter 2 in Appendix A provides a description of the weighting procedure. In brief, we calculated analysis weights for completed employer surveys to allow for unbiased estimates of population proportions. The base weight is the reciprocal of the probability of selection for each employer. Thus, for employers in the short-form universe, the base weights are the reciprocals of the stratum sampling rates, making the sample representative of the population of establishments. The analysis weights are the product of a base weight and a post-stratification adjustment to correct for differential nonresponse.

What were the effects of specific interventions on increasing program awareness?

The study was not designed to test rigorously the effects of specific interventions on program awareness. Nevertheless, we use data from a variety of sources to provide suggestive evidence. We use employer answers to questions in the short- and long-form surveys about how they learned of the STC program to shed light on the mechanisms responsible for any increased awareness.

We also gathered data from the state agencies on employer inquiries and on web traffic to the state's STC website (through URLs linked to the specific intervention mechanisms) to address the likely effectiveness of specific interventions in increasing program awareness. Additionally, although the interviews conducted as part of the implementation study, described in Chapter 2, were primarily intended to assess fidelity, the interviews with state staff and employers provided further insights into employer awareness and the effectiveness of various outreach mechanisms. The interviews yielded information about the reactions to how the states implemented the interventions and about which activities encouraged positive employer reactions and participation.

3.2.2 What Were the Effects of the Interventions on Program Use? Methods for Assessing

We use state STC and UI administrative data to formally test whether adoption of the STC program and other measures of STC use were significantly greater among employers in the treatment groups

[26] Treatment employers are a greater share of respondents on these two questions because treatment employers had greater awareness of STC and so were more likely to be asked these questions.

than among employers in the control/comparison groups in the two demonstration states. Because employer decisions to use STC could be influenced by the interventions as soon as they commence, we measure outcomes over a 2-year period that includes the 1-year period during which the interventions were administered, plus a 1-year period following the end of the last intervention. In addition, we make use of data on each treatment and control/comparison group employer in Iowa and Oregon for the 2 years prior to the start of interventions in order to measure the relative changes in outcome variables between treatment and control/comparison group employers following interventions. The outcome variables include the use of STC, the ratio of FTE number of workers on STC to the number on regular UI, and the ratio of STC benefits paid to regular UI benefits paid. The last outcome measure captures, among employers that are reducing their workforces, whether treatment employers are more likely than control/comparison employers to use STC.

For the RCT study in Iowa and the RCT component of the study in Oregon, simple comparisons of the means of the outcome variables for the treatment and control groups in theory provide an unbiased estimate of the effect of the intervention. In quasi-experimental studies, there are likely to be systematic differences in the average characteristics of treatment and comparison group members such that simple mean comparisons of outcomes for the two groups will yield a biased estimate of the effects of the intervention. Consequently, for the Oregon QED study it is necessary to use a statistical model to draw causal inferences about the effects of the intervention. Even with random assignment to treatment and control groups, however, there may be chance variation among the groups that affects the average probability of STC use and related outcomes, and a model will improve the precision of the estimates.

Therefore, although we also present mean comparisons of outcomes, our preferred estimates of the effects of the interventions for the QED and RCT studies are derived from statistical models. These models, which are discussed in greater detail in Chapter 5, utilize administrative data before and after commencement of interventions to identify the effects of the interventions on the outcomes of interest. The models control for observed as well as any unobserved average differences between the treatment and control or comparison group employers.

3.2.3 What Were the Costs to States of the Demonstrations' Supplemental Interventions? Methods for Assessing

To address the research questions on the cost to the states of participating in this demonstration, we gathered data from the state agencies on the costs of specific interventions. The costs considered include the mailings to all treatment employers, the mailings to treatment employers with a Notice of Claim, and the mailing related to the Annual Tax Rate Notice insert in Iowa. In addition, in Oregon we were able to estimate the amount of time devoted to the demonstration itself. An

important caveat is that the accuracy of these estimates depends on the staff having accurately reported hours spent on the demonstration as opposed to other STC related activities.

3.2.4 Methods for Assessing Other Factors Affecting STC Use

To place in context the findings of these demonstrations on employer awareness as a barrier to STC use, we examined descriptive evidence from survey and interview data collected for this demonstration on other barriers to STC use.

From the perspective of employers, what are the main barriers and motivations to using STC?

To shed light on factors, besides awareness, that may affect employers' decisions to use the STC program, we collected data in the long-form survey on the program's costs and benefits. For employers who had previously participated in the program, the survey provides estimates of the amount of time spent administering the STC program and of the hourly wage rate for the staff performing those tasks. We multiplied the hours by the hourly wage rate and calculated the mean cost of developing and administering an STC plan. The survey also provides rich descriptive evidence on the benefits that employers perceive from using the program and their overall satisfaction with it. We supplement evidence from the long-form survey with evidence from in-person employer interviews. These interviews provide information on how employers perceive these costs and their effect on decisions to use or not to use the program.

From the state's perspective, are the burdens of administering the STC program a significant barrier to expanding it?

We also collected evidence on whether the costs to states of administering the STC program pose a significant burden and may inhibit their willingness or ability to expand the program. This analysis primarily relies on evidence from confidential, in-depth, in-person interviews with state staff, conducted as part of the implementation study, as well as on insights gained from regular discussions we had with staff during the demonstration. In addition, we analyzed data gathered from the states on time spent on specific tasks and the costs of specific interventions to develop estimates of the annual costs of administering the program. The descriptive analysis covered the period of September 2014 through April 2016. For Iowa, the analysis focused on the total time in minutes spent on specific activities, the number of occurrences of activities, and the average amount of time per occurrence. The analysis also provided the estimated cost to IWD for staff to administer the program. For Oregon, the analysis focused on the number of hours of staff time charged per month to handle initial and continued claims between September 2014 and April 2016. We also considered the number of new plans and the number of new employers with plans to provide context to the number of staff hours charged. We developed estimated costs for OED to administer the STC program (initial STC claims and continued STC claims) using the reported staff hours and available listings of state salaries.

4 Findings on Employer Awareness of STC

In this chapter, we examine evidence on the effectiveness of interventions in increasing employer awareness of the STC program, which is a necessary condition for increasing program adoption, and the costs of implementing those interventions. Our primary objective is to determine, through statistical tests, if Iowa and Oregon treatment and control/comparison employers differ significantly in their awareness of the STC program following the 12-month intervention period. Data on awareness come from the short-form employer survey administered to a stratified random sample of treatment and control/comparison employers in Oregon and Iowa. We also present supplemental descriptive evidence on the effectiveness of the various interventions administered in each state to inform employers about the STC program. This evidence comes from questions in the long- and short-form surveys pertaining to how employers learned about the STC program, as well as from systems the states put in place to track employer queries about the program and hits to URLs containing information on the STC program. Finally, we present estimates of the costs to states of implementing the interventions; we use data provided by state staff to derive these cost estimates.

4.1 Impact of the Interventions on Employer Awareness of the STC Program

In this section, we present estimates of the impact of the interventions on employer awareness. We also describe evidence pertaining to when and how employers first learned of the STC program.

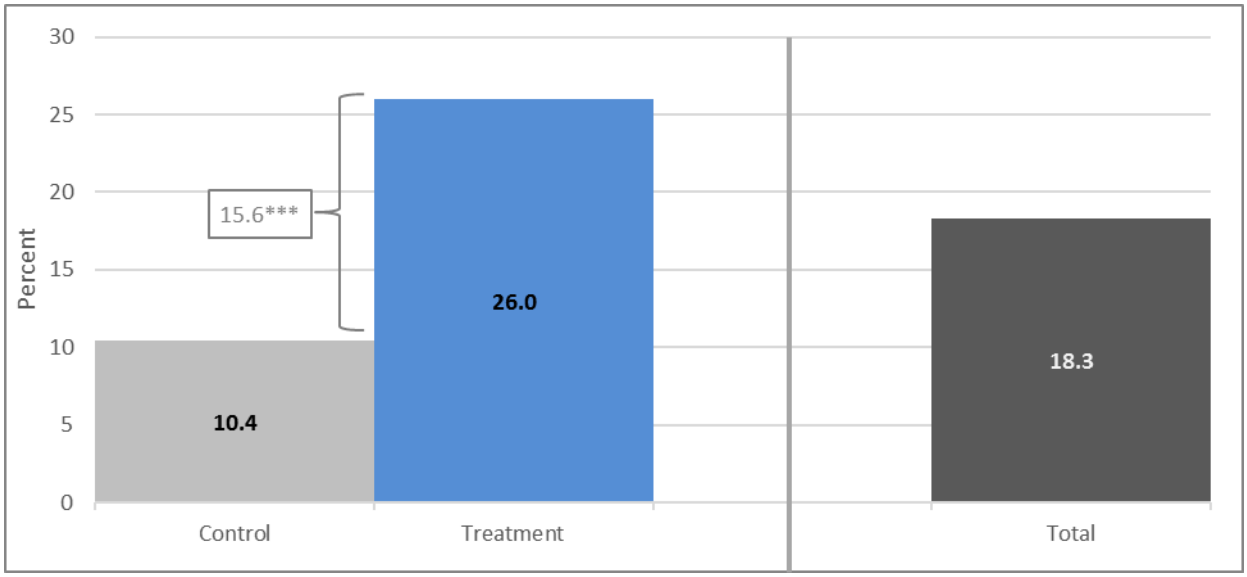
4.1.1 General Awareness, 6 Months After the Intervention Period

In the short-form survey, we asked employers if they were aware of the state STC program. We administered this survey in the spring of 2016, about 6 months after the end of the intervention period.

The estimates shown in Figure 4-1 indicate that, at the time of the survey, 18.3 percent of Iowa establishments were aware of the STC program. Respondents from treatment establishments were more than twice as likely to be aware of the program: 26.0 percent of treatment respondents

compared to 10.4 percent of control respondents indicated that they knew about the program, a differential of 15.6 percentage points, which is significant at the 0.01 level.[27]

Figure 4-1. Employer awareness of the Iowa STC program, by assignment group



Note: Results are based on 1,092 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Tables 4-1 and 4-2 present awareness in Iowa by industry and by employer size for control and treatment employers. Treatment employers are significantly more aware of the state STC program than are control employers in all but two sectors (public administration and professional, scientific, etc.) and in each firm size category (small, medium, or large). The findings indicate that the interventions were effective in informing many types of employers.

Figure 4-2 compares awareness of control/comparison and treatment establishments for the RCT and the QED in Oregon. Overall, the estimates imply that 36 percent of establishments were aware of Oregon's STC program, with treatment establishments about twice as likely as control and comparison establishments to be aware of it (45.3% versus 27.5%, overall). Significantly, greater awareness is evident among treatment employers in both the QED and the RCT studies. The difference is greater within the QED (30.4 percentage points for the QED compared to 17.8 percentage points for the RCT). Because the establishments in the treatment and comparison group samples were not randomly assigned, it is possible that some of the greater awareness apparent among QED treatment employers existed prior to the outreach. Below, we address this concern by providing evidence about the timing, and how employers learned about the program.

[27] A small percentage (1.2%) of respondents indicated that they did not know whether they were aware of the program.

Table 4-1. Employer awareness of the Iowa STC program, by assignment group and industry

Industry	Control percent aware	Treatment percent aware	Treatment minus control
Information, finance, insurance, real estate and rental and leasing	13.1	51.7	38.7***
Agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and utilities	4.3	34.2	29.9***
Manufacturing	16.7	43.9	27.2***
Education services; health care and social assistance; arts, entertainment, and recreation, other services	17.3	40.4	23.1***
Construction	27.7	48.6	20.9***
Wholesale trade, transportation and warehousing	23.1	30.9	7.9***
Retail trade	20.9	26	5.1***
Public administration	35.0	39.3	4.3
Professional, scientific, and technical services; management of companies; administrative support and waste management and remediation services	25.2	25.7	0.5

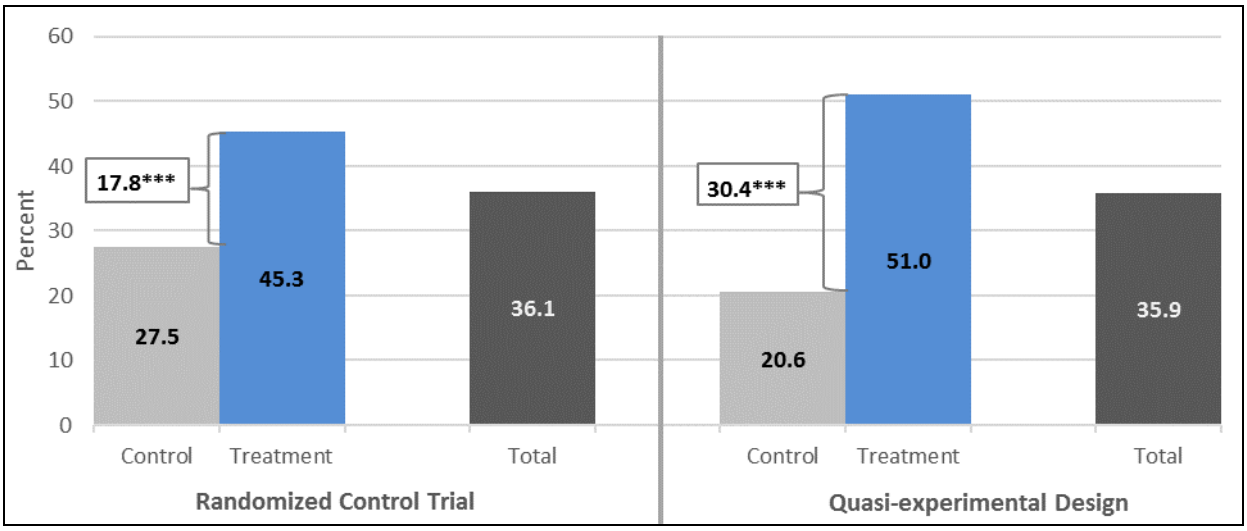
Note: Results are based on 1,092 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Table 4-2. Employer awareness of the Iowa STC program, by assignment group and size

Employer size	Control percent aware	Treatment percent aware	Treatment minus control
Small	19.1	36.0	16.9***
Medium	19.7	35.5	15.8***
Large	24.2	37.0	12.8***

Note: Results are based on 1,092 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level. Small employers have between 1 and 15 employees; medium employers have between 16 and 42 employees; and large employers have more than 42 employees.

Figure 4-2. Employer awareness of the Oregon STC program, by assignment group and study



Note: Results are based on 923 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Tables 4-3 and 4-4 present awareness in Oregon by industry and by employer size for control and treatment employers (pooling RCT and QED studies). Treatment employers are significantly more aware of the STC program than are control employers in all industries and for each size category. As in Iowa, the findings indicate that the interventions in Oregon were effective in educating a broad group of employers about the STC program.

Table 4-3. Employer awareness of the Oregon STC program, by assignment group and industry

Industry	Control percent aware	Treatment percent aware	Treatment minus control
Agriculture, forestry, fishing, and hunting; mining, quarrying, and oil and gas extraction; and utilities	19.6	75.1	55.5***
Education services; health care and social assistance; arts, entertainment, and recreation, other services	14.5	41.1	26.6***
Retail trade	38.2	60.9	22.8***
Construction	25.6	46.3	20.6***
Manufacturing	27.8	46.2	18.4***
Wholesale trade, transportation and warehousing	21.7	39.6	17.9***
Information, finance, insurance, real estate and rental and leasing	43.3	60.2	16.9***
Professional, scientific, and technical services; management of companies; administrative support and waste management and remediation services	32.8	48.8	16.0***
Public administration	44.3	57.9	13.6***

Note: Results are based on 923 responses to the short-form employer survey (pooling RCT and QED studies). Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Table 4-4. Employer awareness of the Oregon STC program, by assignment group and size

Size	Control percent aware	Treatment percent aware	Treatment minus control
Small	23.8	45.4	21.6***
Medium	26.1	45.8	19.7***
Large	27.9	73.4	45.5***

Note: Results are based on 923 responses to the short-form employer survey (pooling RCT and QED studies). Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level. Small employers have between 1 and 15 employees; medium employers have between 16 and 42 employees; and large employers have more than 42 employees.

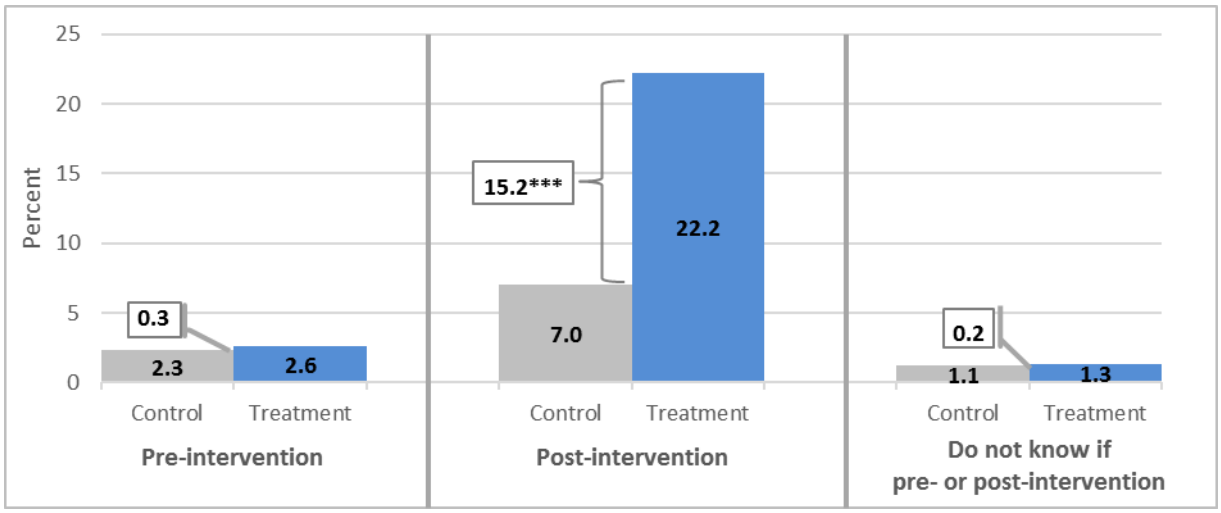
4.1.2 When Establishments First Learned of the State STC Program

In this section, we consider when establishments first learned of the state STC program. For convenience, we collapsed the survey response categories to be either prior to the intervention period (pre-intervention) or after the start of the intervention period (post-intervention). Treatment respondents would have received the first mailing about the STC program in September or October

of 2014. In the survey administered about a year and a half later, employers are indicating whether they learned about the program before September 2014 versus September 2014 or later. Because of potential recall bias, the survey data regarding the timing of when respondents first learned about the STC program should be interpreted with caution. Nonetheless, we expect that treatment employers would be more likely than control or comparison employers to report first learning about the program during the post-intervention period.

Figure 4-3 suggests that only about three percent of Iowa establishments learned about the program pre-intervention, with no difference between control and treatment employers. Among establishments that learned about STC post-intervention, the percentage is significantly higher for treatment than are control employers (22.2% versus 7.0%, a difference of 15.2 percentage points), consistent with the targeting of interventions to the treatment group.

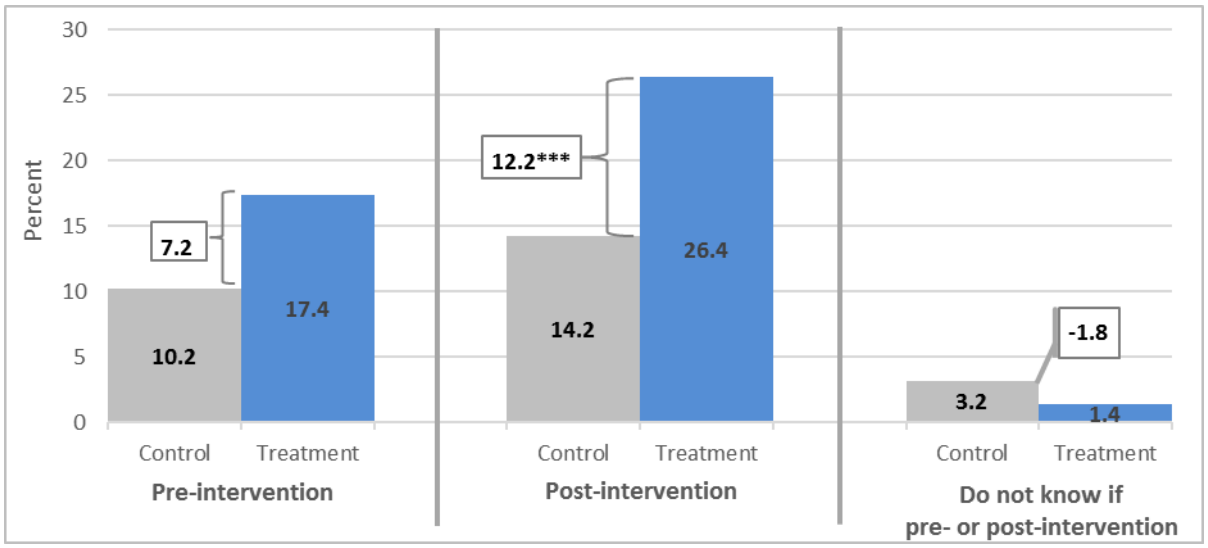
Figure 4-3. When employers first learned about the Iowa STC program, by assignment group



Note: Results are based on 206 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

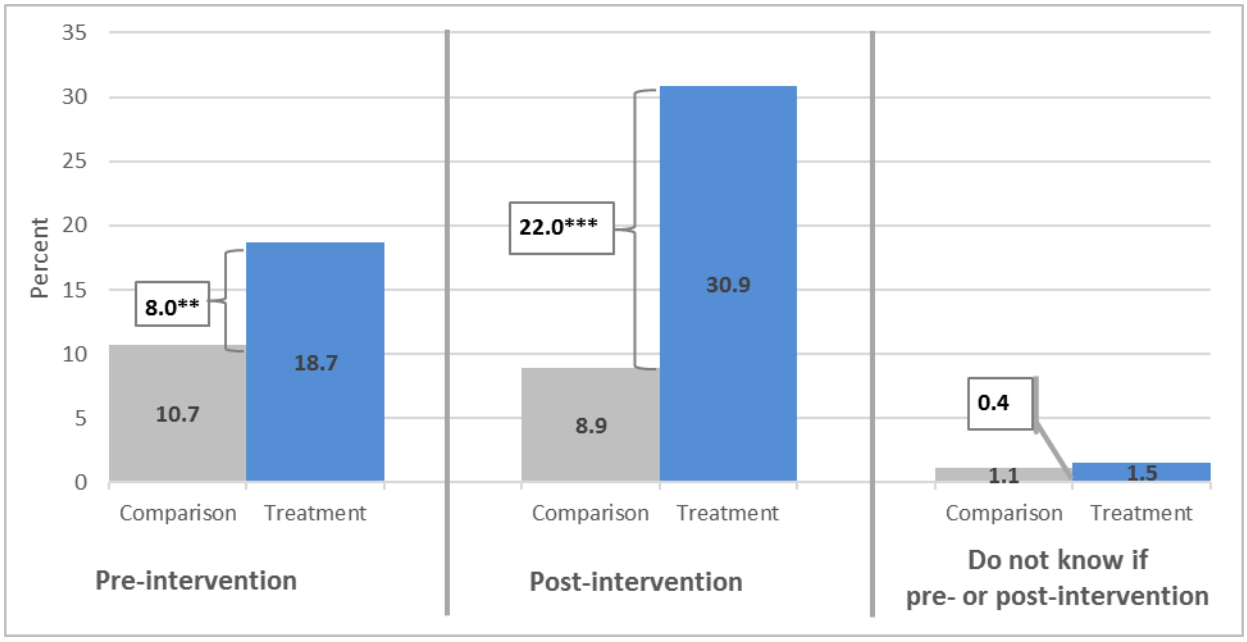
Figures 4-4 and 4-5 show the percentage of control/comparison and treatment employers in the RCT and in the QED in Oregon that learned about STC pre- or post-intervention. Although treatment establishments were more likely than control/comparison employers to report being first aware of the program in the pre-intervention period in both the RCT and QED studies, only the differential in the QED study is statistically significant. As expected, the treatment employers are significantly more likely than the control and comparison group employers to report learning about the program in the post-intervention period, 12.2 percentage points in the RCT and 22.0 percentage points more in the QED). Moreover, the difference between the share of treatments and the share of controls and comparisons reporting that they first heard about the program following the start of

Figure 4-4. When RCT employers first learned about the Oregon STC program, by assignment group



Note: Results are based on 139 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all control or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Figure 4-5. When QED employers first learned about the Oregon STC program, by assignment group



Note: Results are based on 192 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all comparison or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and comparison percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

interventions is greater than the difference in the share reporting that they first heard about it prior to the start of interventions. Formal tests (t-test) show that these differences in percentages are statistically significant at the 0.05 level for the RCT and at the 0.01 level for the QED.[28]

4.1.3 Evidence on How Employers Learned About the STC Program and the Effectiveness of Various Interventions

The short-form survey also asked respondents who indicated that they had heard of the state's STC program how they learned about it. There were 14 response options, and employers could select more than one option. In Iowa, except for a banner that appeared for treatment employers who were filling out their quarterly earnings reports online, all interventions involved mailings. In Oregon, mailings were also the primary mechanism for distributing information in both the RCT and QED studies. In addition, all treatment employers for whom OED had an email address were sent an email with STC program information prior to the first mailing, treatment employers who posted a job listing with OED online saw a banner about the program, and treatment employers were invited to attend a webinar on the program. In the QED region, treatment employers also received information via other channels, such as presentations at employer meetings, as described in Chapter 3.

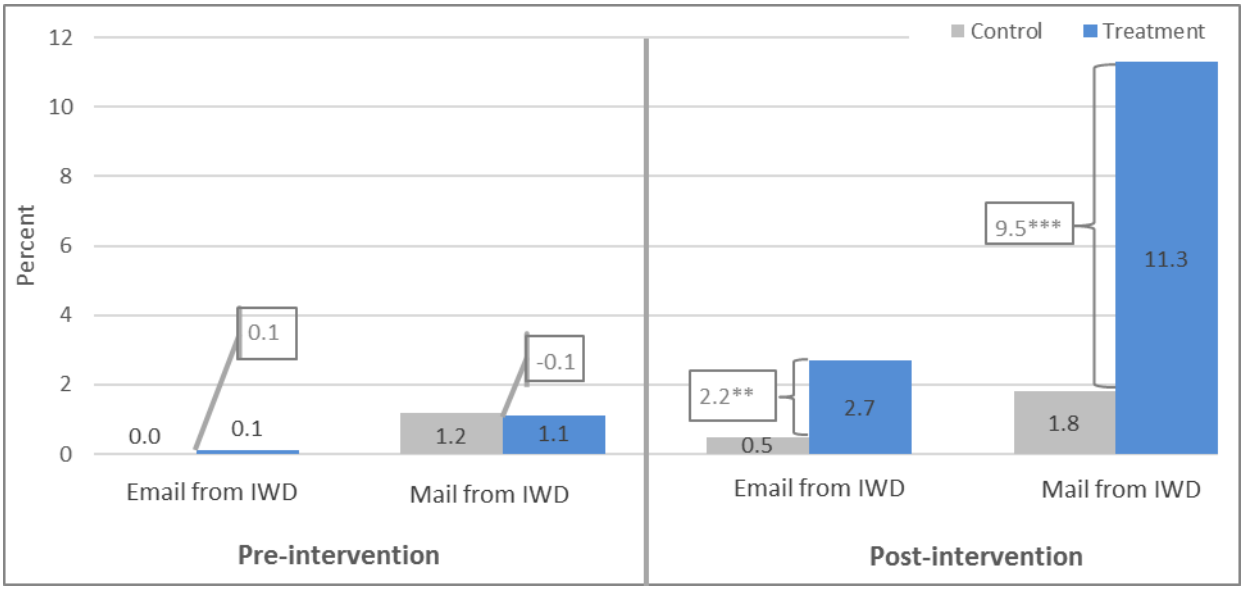
We use evidence from the employer survey to validate further the effectiveness of the interventions. Specifically, we would expect to observe that treatment employers would be much more likely to have learned about the program via the outreach mechanisms used in the study, in particular through mailings. In Oregon, evidence from the employer survey may shed light on the relative effectiveness of the greater range of outreach mechanisms used.

In Iowa, among the 14 response options, no single information source stands out for treatment or control establishments that learned about STC before the start of the interventions. In contrast, for treatment establishments that learned about STC following the start of the interventions, mail from IWD was clearly the main method of learning about STC for Iowa treatment establishments and was significantly greater than for Iowa control establishments (11.3% compared to only 1.8%), as shown in Figure 4-6. Note that the percent of control employers who learned about the program from a mailing post-intervention is likely inflated by the fact that 21 percent of control employers were accidentally included in one mailing, as discussed in the appendix to Chapter 2. Given that the Iowa interventions relied almost exclusively on mailings, these findings provide further confirmation that they were effective. Note that because other mechanisms for outreach such as making presentations to employer groups were not used, largely owing to the RCT design, we cannot conclude whether

[28] This "difference-in-difference" is 5.0 percentage points in the Oregon RCT study (12.2 – 7.2) and 14 percentage points in the Oregon QED study (22.0 – 8.0).

these other mechanisms would have been more effective than the mailings in increasing awareness. Among Iowa employers who learned about the program following the start of interventions, treatment employers were also significantly more likely than control employers to report learning about the program from an email, though the share reporting this information source and the difference are small (2.7% vs. 0.5%), as shown in Figure 4-6. [29]

Figure 4-6. How Iowa employers learned about STC, selected sources, by assignment group and controlling for when they first learned



Note: Results are based on 206 responses to the short-form survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all control or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

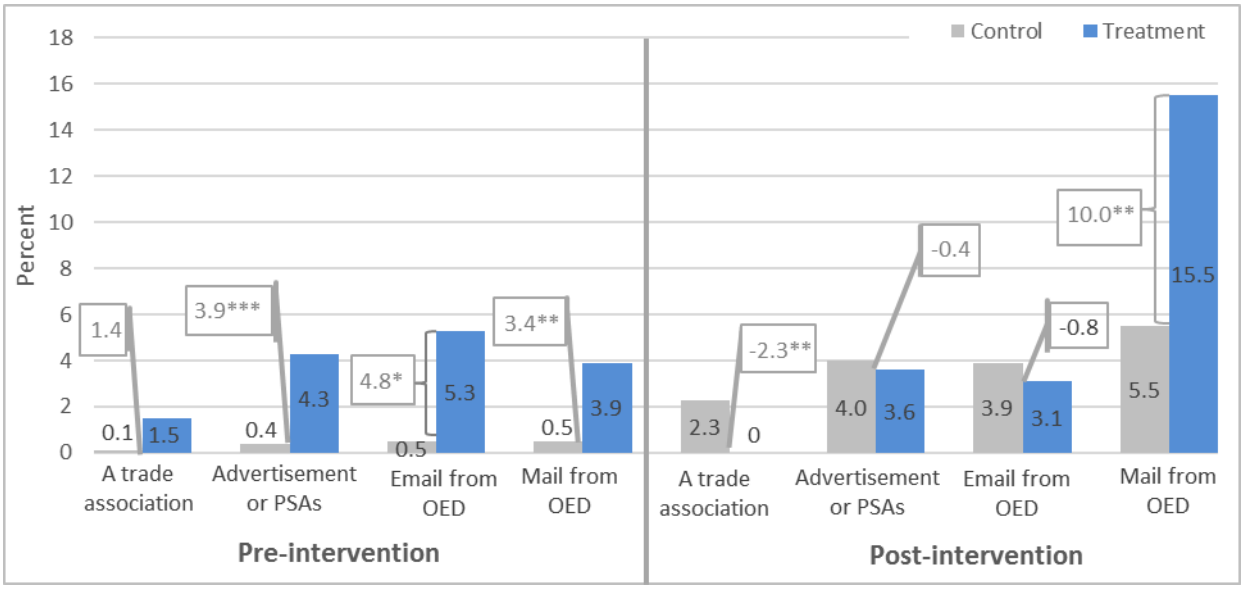
Appendix Table A4-1 provides a complete list of the various methods of learning about STC, when Iowa employers learned about STC, and the weighted percentage of all control employers and all treatment employers that selected each method.[30] Learning from employees, another employer, a trade association or an advertisement or public service announcement were other relatively common ways Iowa employers have learned about the STC program.

[29] Email was not an intervention used in Iowa, but was an item included in the survey.

[30] The denominator for calculating the percentages was not limited to respondents that said that the establishment was aware of the STC program, but included all control or treatment establishments represented in the survey. Some employers selected more than one method.

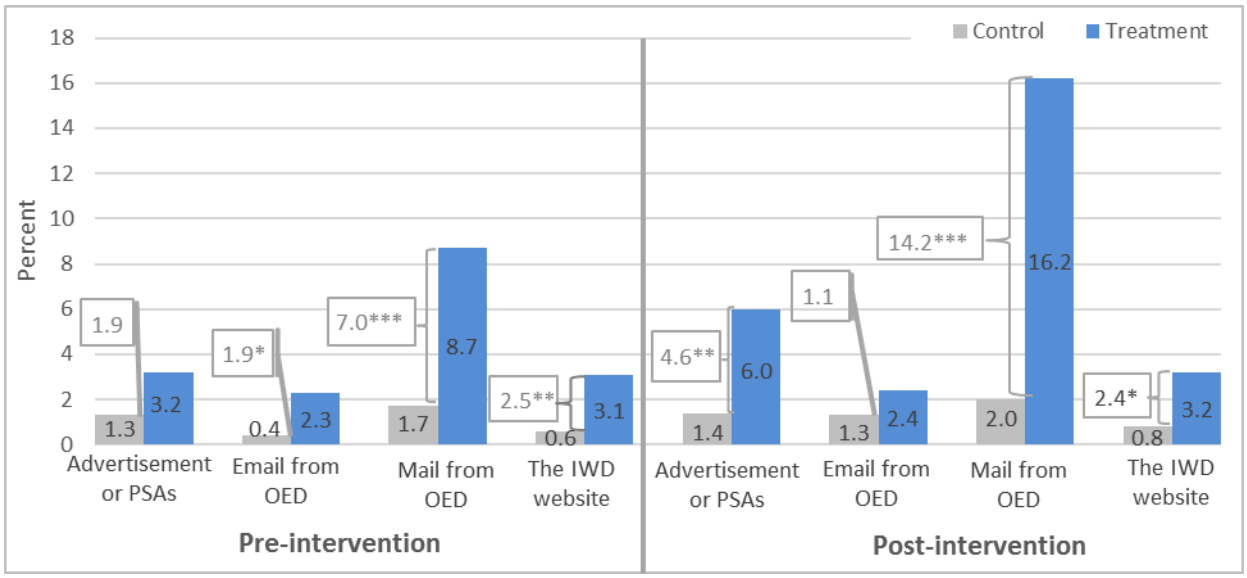
Figures 4-7 and 4-8 show for selected information sources the weighted percentages of Oregon RCT and QED treatment and control and comparison employers reporting how and when they learned about the program. Appendix Tables A4-2 and A4-3 provide a complete tabulation of these survey results. Mail from OED is the method cited most frequently by Oregon treatment employers in the QED and in the RCT, and the percent learning through this channel is significantly larger for treatment than for control and comparison establishments that learned about the program post-intervention. Among those who learned about the program before the start of the interventions, RCT treatment employers are significantly more likely than control employers to report learning about the program through advertisements/PSAs, email, and mailings, while QED treatment employers are more likely than controls to report learning about the program through emails, mailings and the website. In all cases, however these differences in pre-intervention awareness are quantitatively small, and as with the question pertaining to timing, the answers are subject to recall bias.

Figure 4-7. How Oregon RCT employers learned about STC, selected sources, by assignment group and controlling for when they first learned



Note: Results are based on 139 responses to the short-form survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all control or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Figure 4-8. How Oregon QED employers learned about STC, selected sources, by assignment group and controlling for when they first learned



Note: Results are based on 192 responses to the short-form survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all control or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Similarly, for long-form survey respondents in Oregon, we looked at how firms that started an STC plan post-intervention responded to the questions about how and when they learned about the program.[31] Although the number of respondents (56) that started plans is small, the findings are informative about employers that recently started STC plans.[32]

Appendix Table A4-4 provides the count of firms by treatment status and study status that learned about the program pre- or post-intervention, and the methods they identified as to how they learned about the program (N = 53 due to item nonresponse). Twelve firms in the QED and six firms in the RCT reported hearing about STC prior to the intervention period. Thirty-six firms in the QED and 15 firms in the RCT heard of STC post-intervention. For control/comparison employers that learned pre-intervention, "employees" or "another employer" were the most commonly cited sources, suggesting that word of mouth and other informal channels are important sources of information. For treatment employers, as expected, mail from OED is the most cited method for those who initiated a program following the start of interventions. This finding is consistent with estimates, presented in the next chapter, that the interventions were responsible for the higher level of STC plans among treatment employers in Oregon.

[31] Firms with an STC plan post-intervention received the long-form survey, not the short-form survey.

[32] We do not provide results from the Iowa long-form survey because of the small number of respondents (less than 20) that started a plan post-intervention.

4.2 Other Evidence on the Effectiveness of Interventions

The employer survey provides the most comprehensive evidence on the overall effectiveness of the interventions in raising awareness among employers about the STC program. In partnership with Iowa and Oregon state staff, we also implemented tracking systems to record queries to state staff about the STC program and hits to the STC website. In this section, we present evidence from these tracking systems on the effectiveness of the interventions in informing employers about the program. In some cases, this evidence sheds light on the effectiveness of specific interventions. In addition, we discuss employer perspectives on the interventions based on the employer interviews.

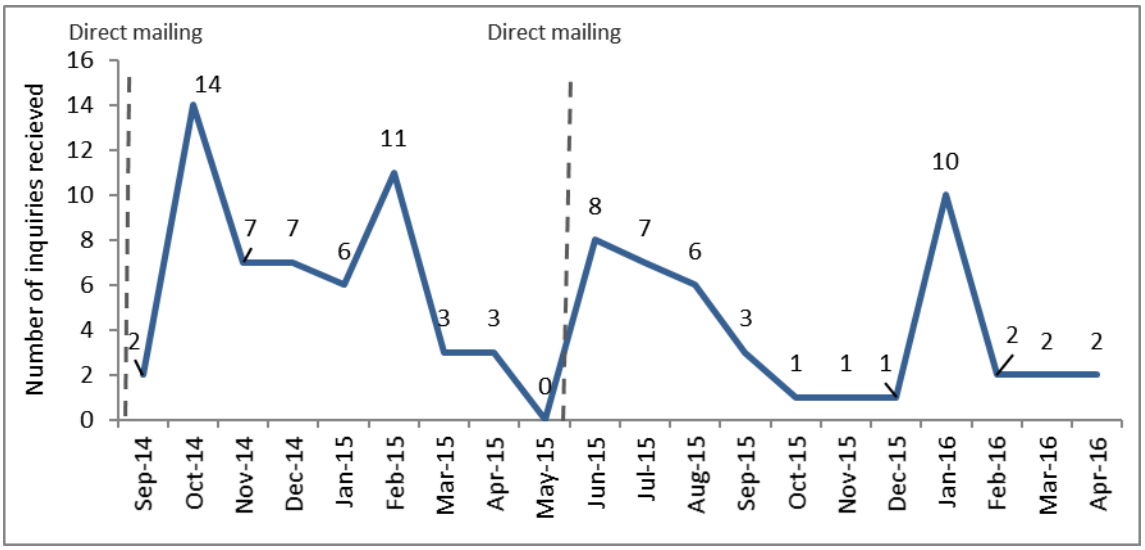
4.2.1 Employer Inquiries to State Agencies About STC

Iowa staff recorded instances of responding to employer inquiries. Figure 4-9 depicts the number of inquiries in Iowa between September 2014 and April 2016. Inquiries increased in October 2014 following the first mailing to all treatment employers, in February 2015 following the first mailing to employers with a notice of claim, and in June 2015 following the second mailing to all treatment employers. IWD recorded a total 96 instances of employer inquiries during the period. As shown in Table 4-5, the 96 inquiries came from 62 employers, of which 32 were treatment, 17 were control, and eight were "other";[33] IWD did not identify the treatment status of five employers. More of the inquiries came from treatment employers than from control employers, indicating that the interventions increased both awareness and interest in the program.

Oregon staff maintained a log of employer inquiries, which also included information about how the employer learned about the program. We examined inquiries received. Figure 4-10 shows the number of inquiries between October 2014 and April 2016. The large increase in November 2014 is consistent with the timing of the email and mail sent to treatment employers at the end of October 2014. We would have expected to see the number of inquiries to continue or increase in August and September 2015 due to the second webinar held in July and the last Notice of Claim mailing in August, but there was a change in staff at this time and OED did not record inquiries received for those two months.

[33] "Other" is a category for employers who were not eligible for assignment to control or treatment at the time of random assignment. The category other could include employers who had an STC plan operating at the time the demonstration commenced.

Figure 4-9. Number of employer inquiries received by Iowa Workforce Development, September 2014 through April 2016



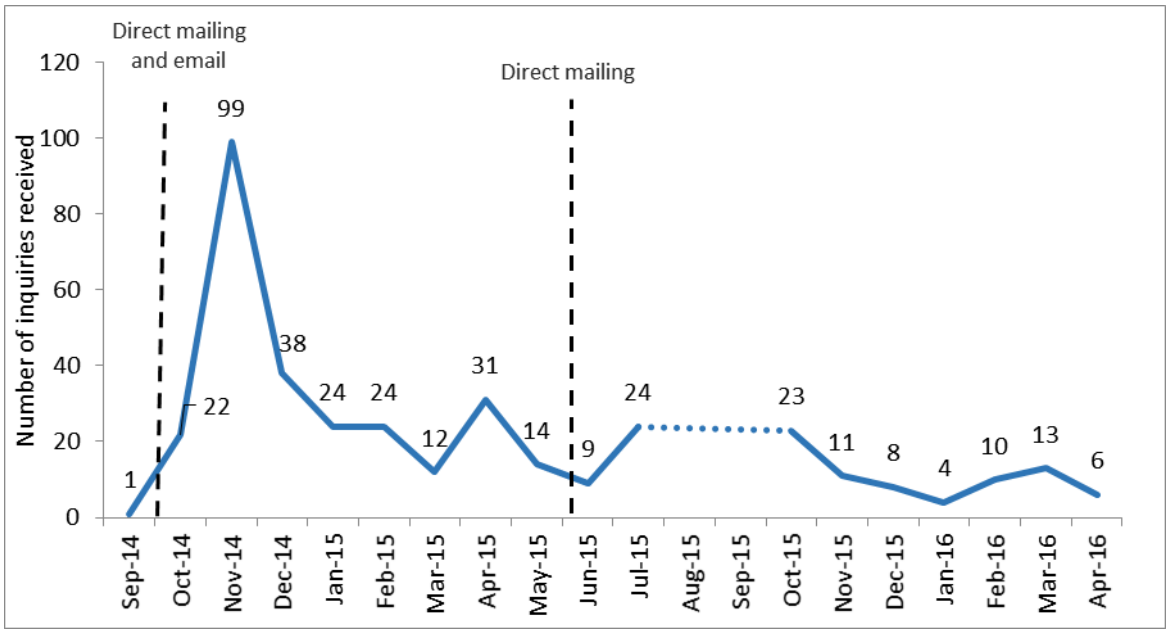
Source: Data reported by Iowa Workforce Development.

Table 4-5. Count of employer inquiries to Iowa Workforce Development about STC, by assignment group, September 2014 through April 2016

Counts	Total	Control	Treatment	Other	Unidentified
Number of unique employers	62	17	32	8	5
Number of inquiries	96	30	50	11	5
Number of employers with one inquiry	43	8	24	6	5
Number of employers with 2 or more inquiries	19	9	8	2	0

Source: Data reported by Iowa Workforce Development.

Figure 4-10. Number of employer inquiries received by Oregon Employment Department, September 2014 through April 2016



Source: Data reported by Oregon Employment Department. Data not available from August and September 2015.

In total, there were 373 contacts, and Table 4-6 displays these contacts by assignment group: RCT, QED, or "unidentified" in cases where the staff did not collect this information. It is clear from the table that treatment establishments generated many more of the inquiries than control/comparison establishments (24.4% versus 6.7% of total queries, respectively, in the RCT; 30.3% versus 7.0%, respectively, in the QED), providing further evidence that the interventions increased awareness and interest in the STC program. Information in Table 4-7 suggests that the high percentage of inquiries from "unidentified" employers is due to prior use and receiving a letter/brochure from OED (possibly treatment employers).

Table 4-6. Number and percentage of employer inquiries to Oregon Employment Department about STC, by assignment group and study, September 2014 through April 2016

Study and assignment group	Number of inquiries	Percent of all inquiries
QED-Comparison	26	7.0
QED-Treatment	113	30.3
QED Total	**139**	**37.3**
RCT-Control	25	6.7
RCT-Treatment	91	24.4
RCT Total	**116**	**31.1**
Unidentified	118	31.6
Total	**373**	**100.0**

Source: Data reported by Oregon Employment Department.

Among the 373 contacts, information is available for 244 establishments about how they learned of the program. As shown in Table 4-7, among the 244, the main methods of learning included (1) being a prior or current STC employer or had previously applied for STC; (2) a letter and brochure or just a brochure from the state agency; and (3) from another employer. Treatment establishments cited receiving a letter/brochure mailing from OED more frequently than control/comparison establishments in both the QED and RCT studies. Although the numbers are small, it is nonetheless notable that a total of six QED treatment employers cited receiving a flyer or brochure [with no mention of mail (4 establishments) or a meeting (2 establishments)] as their source of information, compared to none reporting these information sources among the QED comparison employers, suggesting that the supplemental outreach in the QED region prompted some inquiries to the state about the STC program.

Table 4-7. How Oregon employers that inquired about STC said they learned about the program, by assignment group and study

Method of Learning about STC	RCT-C	RCT-T	QED-C	QED-T	Unidentified	Total
Prior or current user or applicant	6	25	11	14	44	100
Letter/brochure mailing from OED	4	27	4	37	22	94
From another employer	2	2	1	1	5	11
Email from OED	1	6	0	1	1	9
Postcard or magnet	0	0	0	1	6	7
Meeting	0	1	0	2	4	7
Flyer/brochure (no mention of mail)	0	1	0	4	1	6
From an employee	2	1	0	1	2	6
Seminar	0	1	0	0	1	2
Referral from local office	2	0	0	0	0	2
Total	17	64	16	61	86	244

Source: Data reported by Oregon Employment Department.

4.2.2 Employer STC Website Activity

The state agencies assigned unique URLs for use in the demonstration to track web traffic linked to specific mechanisms. For example, the URLs included on cover letters, brochures and fact sheets differed, thereby allowing the tracking of web hits back to the specific intervention mechanism associated with the URL. The states provided the study team with monthly information on the number of web hits from September 2014 through August 2016. However, there are some significant limitations to drawing conclusions from the counts of web site hits:

- An employer might use a search engine to find the state webpage on STC, instead of typing in the URL found in the mailing, email, or brochure.
- Once an employer receives direction to the state agency's STC webpage from one mechanism, the employer might ignore directions given in later mechanisms because the employer already had visited the webpage.

- An employer could avoid going to the webpage and call directly to the agency office to obtain information.

- An employer might use an incorrect keystroke when entering the URL and thereby trigger a hit for a different URL, including the default URL.

In Iowa, IWD provided counts of web hits for most months, but due to a reworking of the agency's webpage, was not able to provide counts of web hits for July and August of 2015. In addition, there was a spike in September 2015 of the number of hits for each mechanism that is inconsistent with the intervention, even after removing the count of the state's hits when testing the new system. IWD established a URL for emails to employers, but did not use that mechanism. With these caveats in mind, Table 4-8 provides a summary of the unique number of establishments that received the specific type of intervention and the number of webpage hits for the URLs associated with the intervention. It also provides the number of hits as a percentage of employers receiving the intervention. Based on those percentages, the mailings to treatment employers with a Notice of Claim and mailings to all treatment employers produced the highest rates of web hits among the four intervention mechanisms. We also provide several visual presentations for the number of web hits to Iowa's STC webpage by intervention mechanism in Appendix Figures A4-1 through A4-4.

Table 4-8. Summary of the number of web hits to Iowa STC webpage by type of intervention for September 2014 – August 2016

Intervention mechanism	Number of employers	Number of web hits	Hits as a percentage of employers
Banner	22,893	39	0.17%
Notice of claim	1,061	21	2.00%
Tax rate notice	23,733	58	0.20%
Mail	22,893	239	1.04%

Source: Data reported by Iowa Workforce Development.

Note: The number of employers receiving the insert with the tax rate notice includes 3,018 control employers and 7,315 "Other" (not treatment or control) who received the mailing by mistake.

Table 4-9 provides a summary of website activity in Oregon. The table shows the number of employers that received the specific type of intervention, the number of webpage hits for the URLs associated with the intervention, and the number of hits as a percentage of employers receiving the intervention. Based on the percentages, the email sent to a portion of the treatment employers and the mailing to all treatment employers with a Notice of Claim produced the highest rates of web hits (1.8% and 1.1%, respectively). OED did not continue sending emails after October 2014 because a large number bounced back as undeliverable and the agency was unable to update the email addresses. The banner generated little website activity, possibly because it was directed at employers looking to hire workers. A banner directed to a broader spectrum of employers, as was done in Iowa, may be more effective in a period of economic downturn.

Table 4-9. Summary of the number of web hits to Oregon STC webpage by type of intervention for October 2014 - August 2016

Intervention mechanism	Number of employers	Number of web hits	Hits as a percentage of employers
Banner	26,360	8	< 0.10%
Notice of claim	19,581	222	1.10%
Email	7,092	130	1.80%
Mail	26,360	198	0.75%

Source: Data reported by Oregon Employment Department.

Appendix Figures A4-5 through A4-7 provide a visualization of the number of web hits to the Oregon STC webpage associated with the URLs tied to specific intervention mechanisms (except for the banner). The vertical bars on some of the graphs indicate specific times during the demonstration period of implementing the intervention mechanism. Otherwise, the mechanism was present during the full period of the demonstration. The first mailing to treatment employers with a Notice of Claim generated a large number of hits, but subsequent mailings generated many fewer hits, likely because many of the treatment employers that received the first mailing received later mailings as well and consequently we would expect to observe a reduction in their effectiveness.

After the demonstration, in November 2015, OED conducted a postcard mailing (with a promotional peel-away magnet) to all treatment employers and included the URL initially designated for the mailing with the tax rate notice (tax rate notice was not used as an intervention in Oregon). In addition, OED redirected some other URLs to this one. The number of hits in November and December of 2015 was 160 to this URL, suggesting that the postcard mailing could have been effective in generating interest in the program. However, it is unclear how many of the 160 web hits were directly the result of the postcard mailing. During an interview, one employer told us that the magnet was a convenient reminder for later use.

4.2.3 Employers' Perspectives on Interventions

In addition to the information gathered through the employer survey, the study team conducted in-person and telephone interviews with 18 employers in Iowa and 25 employers in Oregon. The team asked employers about their awareness of the intervention mechanisms and about the effectiveness of the interventions and delivery mechanisms.

Employers' Awareness of the Intervention Mechanisms

Most Iowa treatment employers interviewed in the spring of 2016 remembered receiving the intervention mailings. Over half of those who used the program for the first time after receiving the intervention materials indicated that they learned about it for the first time from the intervention mailings.

Among Oregon RCT treatment employers interviewed in the spring of 2016, those that knew about the program before the intervention mailings were less likely to recall the mailings than those who did not know about the program before the intervention. In the QED, all STC users and non-users remember receiving the letters or emails sent by OED. Most of the users reported first hearing about the program through the mailers. Thus, although a small number of treatment employers (36) were interviewed, the interviews corroborate other evidence that the mailings and emails increased awareness of the program.

The Relative Effectiveness of Interventions and Delivery Mechanisms

In Iowa and Oregon, interviewed employers identified several methods by which they learned about the STC program. These methods included word-of-mouth, presentations before the intervention, previous mailers, and intervention mailers. Several employers said that the ability to retain mailers for later use was an advantage of the mailers. Employers also noted the importance of the state agency STC webpage, which they typically visited before calling the agency.

In Oregon, we selected the non-user treatment employers to interview because they had responded to the email invitation to attend a webinar on STC. A few of them noted that the information provided in the webinar led them to conclude that they did not meet program requirements. None of them contacted OED to confirm their assessment of their eligibility. State-initiated follow-up to outreach activities such as webinars could help address lingering employer concerns.

Interviews with state agency staff also provided some information about feedback they received from employers. Some Oregon employers liked receiving an email about STC, but others expressed concern that they were receiving spam. OED also reported getting positive feedback from employers when it mailed out the postcard with an STC peel-away magnet. The auditors did not view the distribution of STC brochures during UI audits as effective because the audit situation was usually a stressful time for employers, meaning that they were not very receptive to information about the STC program.

Both state agencies noted the need to be sensitive to the frequency of the interventions mechanisms for the treatment employers. In Iowa, an IWD staff person reported that about 12 employers complained after the second or third letter they received and wanted to get off the mailing lists. In Oregon, state staff reported 10 complaints about the mailings. Employers that contacted them were "alarmed" and expressed "apprehension," wondering if the state knew something about impending declines for their company or their industry.

4.3 Cost to the States of Providing Enhanced Interventions

This section provides an estimate of the costs incurred by the states for participating in the demonstration. Specifically, these are mailing costs and staff time costs associated with the demonstration. Each state received $125,000 to defray the costs.

4.3.1 Mailing Costs

The estimated cost of all mailings for the Iowa demonstration was $68,356. IWD sent the first mailing to all Iowa treatment employers, which included 11,888 establishments. The cost of the initial mailing was $17,257.[34] Assuming the cost of the second mailing was the same, we estimate the total for these two mailings was $34,514. Additionally, IWD sent four quarterly mailings to treatment employers in Iowa with a Notice of Claim for the quarter. IWD sent the mailings to 8,686 establishment addresses. The estimated cost for these mailing was $12,609.

IWD provided inserts in the Tax Rate Notice mailing to Iowa treatment employers. The cost for the insert should have been limited to printing the letter and fact sheet included with the tax rate notice. However, because of an error in the mailing process at IWD, about 3,000 control employers and 7,315 "other" employers received the insert (printing cost of about $6,027). IWD subsequently sent a separate mailing with the insert to 10,475 treatment establishments that did not receive the insert with the Tax Rate Notice mailing. We estimate that the mailing to 10,475 establishments cost $15,206.

Earlier in the chapter, we estimated that the interventions—primarily in the form of mailings—increased awareness among treatment employers by 15.6 percentage points (Figure 4-1), or about 1,855 employers. Dividing the total direct mailing costs ($68,356) by the net gain in employers aware of STC (1,855) implies the cost per employer made aware of STC was about $37.

We estimate that the total cost for all of the mailings in Oregon was $79,973. OED reported sending the initial mailing to about 32,500 establishments (all Oregon treatment employers). We estimate the cost of the mailing was $26,145, of which $18,345 relates to the mailing process and $7,800 to the printing of 32,500 brochures, which were part of a larger print run of 75,000 brochures at a cost of about $18,000, or about $0.24 per brochure. Assuming the same cost for the second mailing to all treatment employers, the estimated total for the two mass mailings was $52,290. The three Oregon quarterly mailings to treatment employers with a Notice of Claim for the reference quarter included mailings to 34,410 establishments. Estimating the costs of brochures ($8,259) and mailings ($19,424), the estimated total cost for these mailings was $27,683.

[34] The costs included $729 for envelopes; $6,934 for printing; $1,199 for mail stuffing and folding; and $8,395 for first class mail.

We estimate that the interventions increased awareness by 17.8 percentage points among RCT treatment employers and by 30.3 percentage points among QED treatment employers (Figure 4-2), implying that an additional 8,049 employers were made aware of the program because of the interventions. Dividing the total direct costs of $79,973 by the increase in employers made aware of STC implies a cost per case of about $10.[35]

4.3.2 Time Devoted to the Demonstration

Although Iowa staff reported detailed information on staff time devoted to the general STC program, they did not provide information on time spent on the demonstration interventions. The method used by OED to report time use to the study team, however, allowed us to track the amount of time devoted to the demonstration, such as time for conference calls with the study team, and time spent developing and promoting the interventions. The reported hours are accurate to the extent that staff accurately accounted for their time devoted to the demonstration study as opposed to other STC related activities.

Based on the monthly time reporting by subaccounts, OED staff spent about 365 hours between October 2014 and April 2016 on the demonstration study. Most of those hours occurred between October 2014 and April 2015 (260 hours; 71% of the total hours). The average amount of time per month was about 18 hours (and an average of 37 hours for October 2014 through April 2015). Thirteen staff members charged time to the demonstration, with an average of 28 hours per staff member. Based on average staff salaries, we estimate that the total cost to Oregon of the demonstration—direct costs plus staff costs—was less than $100,000.

Because the demonstration in Iowa required less staff time, the total costs of the Iowa demonstration would have been less than in Oregon. Sixteen states received STC grants, including Iowa and Oregon, for program administration and for program promotion and enrollment of

[35] Figure 4-5 indicates that there was a significant differential in awareness in the pre-intervention period between the treatment and comparison group employers in the QED study. For the reasons discussed above, we expect that any differential in the pre-intervention period is exaggerated owing to misreporting, though because employers were not randomly assigned to groups, it is reasonable that differentials would exist in the pre-intervention period in the QED. A conservative estimate, which accounts for pre-intervention differences in Figure 4-5, yields a 22.0 percentage point increase in awareness in the QED, rather than a 30.3 percentage point increase. (Specifically, the increase is computed as the percentage point increase among the treatments between the pre- and post-intervention periods less the percentage point increase among the comparison group, both adjusted for the share answering "don't know" to the question about when they first learned about the intervention.) Using this conservative figure raises the cost of increasing awareness per employer in Oregon from about $10 to about $12.

employers. The cost of the interventions implemented in these demonstrations is much lower than the grant amounts designated for program promotion.[36]

[36] Iowa received $1,047,671 in total ($340,200 for improved administration and $707,471 for promotion and enrollment). Oregon received $1,189,280 in total ($396,426 for improved administration and $792,854 for promotion and enrollment). U.S. Department of Labor, Employment and Training Administration, op. cit.

Findings on the Effects of Interventions on Oregon and Iowa Employer Use of STC

5

The ultimate goal of the demonstration project's interventions is to increase STC take-up among employers who, along with their employees, are likely to benefit from using work sharing in lieu of layoffs. We utilize administrative data from the unemployment insurance programs in Oregon and Iowa to formally test for effects of the interventions on STC take-up. The two states administered the interventions for 1 year, beginning in the fall of 2014. The administrative data used for this interim report cover the period 2012Q3 through 2016Q3, which represents approximately 2 years prior to the start of the interventions, the year during which interventions were administered, and a year following the end of interventions.

Although the demonstrations in Oregon and Iowa were similar in structure, there were some important differences in study design, implementation, and outcomes from the demonstration. For these reasons, we present the results from the demonstrations in each state separately and conclude with a general discussion about our findings from both demonstrations.

5.1 Oregon

The Oregon demonstration contained two distinct studies: an RCT administered in the Portland metropolitan area and a QED administered in the balance of the state. We conduct all analyses separately for the RCT and QED studies. We begin with tests of differences in the characteristics of employers assigned to treatment and control or comparison groups, as well as tests for mean differences in outcome measures between treatment and control or comparison group members in the period prior to and following the start of interventions (hereafter, the "pre-intervention" and "post-intervention" periods). We also provide suggestive, descriptive evidence of the interventions' effects. The core of our analysis estimates difference-in-differences regression models that exploit changes in the relative use of STC among treatment and control or comparison group members between the pre- and post-intervention periods to draw causal inferences about the effects of the interventions.

5.1.1 Tests of the Balance of Covariates and Mean Differences in Outcomes

Ideally, employers assigned to the treatment and control or comparison groups would be statistically indistinguishable in terms of their observable characteristics. Appendix Table A5-1 (in the appendix to Chapter 5 in Appendix A) compares means of the following variables measuring employer

characteristics among the treatment and control or comparison group employers in the RCT and QED samples: (1) employer size, as measured by employment, wages, and an indicator for whether the organization has more than one establishment; (2) prior use of unemployment insurance, as measured by the benefit ratio and UI tax rate; and (3) a set of indicator variables for industry. By design, the RCT sample is well balanced across these key covariates. Although differences in the means among the treatment and comparison group employers in the QED sample are generally quantitatively small, several are statistically significant.

Tables 5-1a and 5-1b compare means for STC outcome variables among treatment and control or comparison group employers in the RCT and QED samples. The interventions targeted employers with information about the option of using STC in lieu of layoffs in the event of a temporary decline in business activity. The key outcome variable of interest, therefore, is employer adoption of an STC plan. Employers may initiate a plan but not use it. In this case, employees would not have their hours reduced and would not receive pro-rated UI benefits. The second variable reported in Tables 5-1a and 5-1b, an indicator variable, measures whether an employer had any STC benefits payments associated with a plan during the quarter. Other outcome variables include the mean number of workers on STC during any given week of the quarter, the full-time equivalent (FTE) number of worker weeks on STC during the quarter,[37] the dollar value of STC benefits paid to STC participants during the quarter, and the employers' quarterly UI benefit charges.

In Tables 5-1a and 5-1b, we provide separate tests for the period prior to the start of interventions, 2012Q3 to 2014Q3, and for the period following the commencement of interventions, 2014Q4 to 2016Q3. The pre-intervention period tests ideally would show no significant differences among means in the treatment and control/comparison groups, though we would expect some differences, in particular in the QED study. The post-intervention period difference-in-means tests are crude measures of the effects of the interventions for the RCT study.

Regarding the pre-intervention period, in the RCT sample, two of the measures of STC use—FTE workers on STC and the dollar value of STC benefits paid out—are marginally significantly higher in the treatment group compared to the control group (p-values of 0.051 and 0.060, respectively).[38] The differences in measures of STC use between the treatment and comparison groups in the QED sample are statistically insignificant in the pre-intervention period. Average UI benefit charges were

[37] If an individual's hours are cut by 20 percent, the FTE for that worker is 0.2. The UI data from which these FTE numbers are derived are weekly data. To obtain the proportionate reduction in hours for each worker on STC, we divide the STC benefits paid to the worker by the weekly benefit amount to which the worker would be entitled if fully unemployed. For example, if a worker's hours were cut by 20 percent, the STC benefits paid would be 20 percent of the weekly benefit amount, and the FTE reduction would be 0.2. The reported means show the average number of FTE STC worker-weeks in a quarter; to obtain the average number of FTE employees on STC in a quarter one would divide the numbers reported in Table 5-1 by 13.

[38] These differences between treatment and control employers in the RCT study partly reflect STC workers and STC payments from plans started prior to the third quarter of 2012.

Table 5-1a. Oregon, comparison of means of outcome variables, treatment v. control employers, RCT sample

RCT outcomes	Pre-intervention: 2012Q3-2014Q3				Post-intervention: 2014Q4-2016Q3			
	Treatment N=9,729	Control N=9,730	Difference (T-C)	p-value	Treatment N=9,729	Control N=9,730	Difference (T-C)	p-value
Proportion starting STC plan	0.0021	0.0016	0.0004	0.504	0.0052	0.0024	0.0029	0.001
Proportion with STC claims	0.0030	0.0025	0.0005	0.491	0.0040	0.0016	0.0024	0.002
# individuals with STC benefits	0.0588	0.0305	0.0283	0.124	0.1293	0.0509	0.0784	0.113
FTE workers on STC	0.0898	0.0345	0.0553	0.051	0.1499	0.0561	0.0938	0.080
STC benefits ($)	38.01	15.19	22.82	0.062	69.68	25.26	44.42	0.091
UI benefit charges ($)	26,217	25,513	705	0.758	19,116	19,466	−350	0.855
STC benefits/Benefit charges	0.0015	0.0014	0.0001	0.922	0.0017	0.0011	0.0006	0.529

Table 5-1b. Oregon, comparison of means of outcome variables, treatment v. comparison employers, QED sample

QED outcomes	Pre-intervention: 2012Q3-2014Q3				Post-intervention: 2014Q4-2016Q3			
	Treatment N=11,925	Comparison N=11,258	Difference (T-C)	p-value	Treatment N=11,925	Comparison N=11,258	Difference (T-C)	p-value
Proportion starting STC plan	0.0009	0.0008	0.0001	0.750	0.0046	0.0021	0.0025	0.001
Proportion with STC claims	0.0014	0.0012	0.0003	0.566	0.0036	0.0020	0.0017	0.017
# individuals with STC benefits	0.0364	0.0091	0.0273	0.127	0.0574	0.0867	−0.0293	0.345
FTE workers on STC	0.0322	0.0147	0.0176	0.199	0.0982	0.1033	−0.0050	0.910
STC benefits ($)	12.64	5.82	6.82	0.219	41.22	48.12	−6.90	0.743
UI benefit charges ($)	14,911	19,178	−4,267	0.000	10,586	12,982	−2,396	0.003
STC benefits/benefit charges	0.0007	0.0004	0.0003	0.273	0.0021	0.0014	0.0008	0.183

NOTE: For the RCT sample, the number of observations for the variable work share benefits/benefit charges is 6,494 and 6,477 for the treatment and control groups, respectively, in the pre-intervention period and 5,874 and 5,852 in the post-intervention period. For the QED sample, the number of observations for the variable work share benefits/benefit charges is 8,304 and 8,063 for the treatment and comparison groups, respectively, in the pre-intervention period and 7,377 and 7,254 in the post-intervention period.

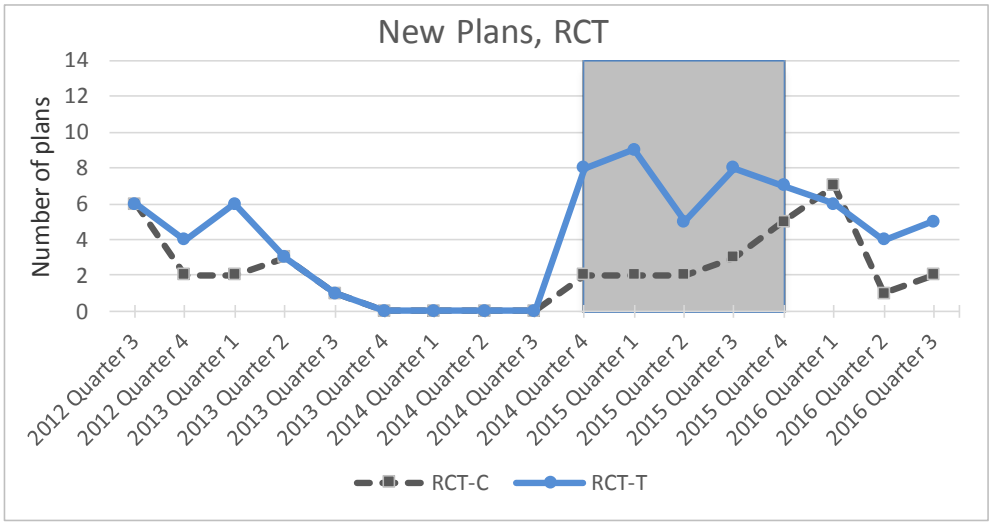
significantly lower among those in the QED treatment group relative to the comparison group, suggesting less prior use of layoffs and, so possibly, less need for STC.

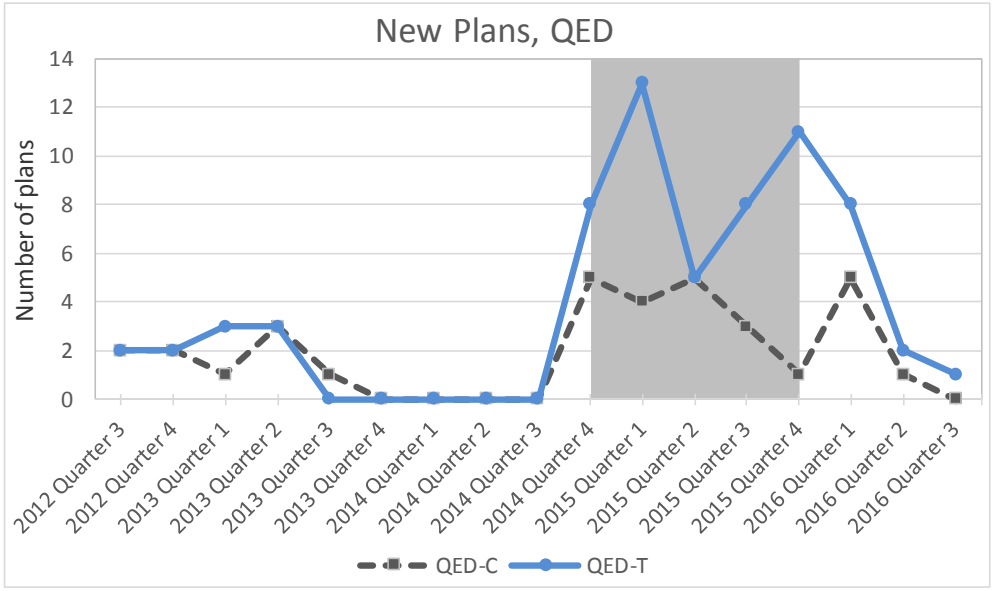
In the post-intervention period, the use of STC is significantly greater among treatments across all measures in the RCT sample and for the measures of plan adoption in the QED sample. Notably, the mean differences between the treatment and control groups in the RCT sample are somewhat larger and more significant in the post-intervention period than in the pre-intervention period, consistent with a positive effect from the interventions.

Figure 5-1 displays the time path during the pre- and post-intervention periods for the number of treatment and control or comparison group employers starting an STC plan in the indicated year-quarter. Because STC plans are approved for a year and because our sample design excluded firms operating STC plans at the time the interventions commenced, firms in our RCT and QED samples did not initiate any new plans in the year prior to start of the outreach interventions. The rectangular shaded area in the graph indicates the period during which interventions were implemented, while the period to the right of the shaded area indicates the follow-up period during which Oregon refrained from promoting the STC program to employers (treatment or control/comparison).

The figure for the RCT sample reveals the somewhat higher incidence of new STC plans initiated by the treatment group in the pre-intervention period, but these differences arise entirely from plans initiated more than a year before the start of the demonstration. Following the start of interventions, the number of new plans initiated by RCT treatment firms is greater than that of RCT control firms, except during one quarter (2016Q1), and the difference is noticeably larger than in the pre-intervention period. For the QED sample, the number of employers starting STC plans is strikingly similar between treatment and comparison groups during the pre-intervention period, but diverges in the post-intervention period. The number of new plans started by QED treatment employers is the same or higher than that started by comparison employers in each of the post-intervention quarters. The differentials between treatment and control/comparison groups were generally larger during the year in which interventions were being implemented than during the follow-up period.

Figure 5-1. Oregon: STC plan adoption by assignment group and study





5.1.2 Regression Analyses: Difference-in-Differences Specifications

The tests of mean differences in outcome variables among treatment and control or comparison groups in Tables 5-1a and 5-1b along with the graphical evidence in Figure 5-1 suggest that the interventions had a sizable positive effect on employer adoption of STC plans. Significant differences in some outcome measures between RCT treatment and control members during the pre-intervention period, along with significant differences in certain employer characteristics in the QED sample, however, underscore the importance of estimating the effects of the interventions using regression models that control for observed and unobserved differences in the treatment and control or comparison group samples.

To formally test for differences in outcomes between treatment and control or comparison groups, we use quarterly employer data between 2012Q3 and 2016Q3 to estimate the following difference-in-differences (DD) model: [39]

$$y_{jt} = treatment_j \propto + treatment_j \times postintervention_t \beta + \delta X_{jt} + uemp_{jt}\sigma + \theta_i + \gamma_t + \varepsilon_{jt} \quad (1)$$

The outcome, y, denotes various measures of employer STC use in the year-quarter. The subscript *j* references the firm, *t* references time (year-quarter), and *i* references industry. The regressions include an indicator for belonging to the treatment group, the interaction of treatment with an indicator for the post-intervention (2014Q4-2015Q4) period, a vector X of firm-level control variables (the log of employment, the log of total wage payments, the benefit ratio, the UI tax rate,[40] and an indicator for whether the employer has more than one establishment), the county-level unemployment rate, and industry and time fixed effects (θ_i, γ_t).

The coefficient α on the treatment indicator captures average unobserved, time-invariant differences between the treatment and control/comparison group members that are not captured by other control variables in the model. The coefficient β on the interaction of treatment with the post-intervention period represents the estimated effect of the intervention on STC use, and, under plausible conditions, it may be interpreted as causal.[41]

As noted, the study sample excludes employers that were operating an STC plan at the time interventions commenced, and in practice, this means that no employers in the study had initiated an STC plan in the four quarters prior to the start of interventions. In some specifications, we also include the interaction of the treatment with the 2013Q4-2014Q3 period, which is equivalent to redefining the baseline reference period to be 2012Q3 through 2013Q3. If there are systematic differences in STC use between treatments and controls during the pre-intervention period even after controlling for observables, this specification provides a more conservative estimate of the effect of the intervention on STC use.

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[39] The DD model is among the most common statistical techniques employed in the social sciences to derive causal estimates of the effects of an intervention on outcomes in the treated group. An introduction to the DD model along with citations to studies using the technique may be found in Joshua D. Angrist and Joern-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion*, pp. 227-243.

[40] We do not include the local unemployment in the Portland RCT because firms face the same unemployment rate at any point in time, and the effects of changes in the unemployment rate over time on firms' propensity to adopt STC is captured in the time fixed effects.

[41] A causal interpretation assumes that, controlling for observable factors, the effect of belonging to the treatment group on the outcome is time-invariant. In other words, the interpretation of the regression coefficients is causal unless there was some unobservable factor that differentially affected the outcomes of treatment relative to the control/comparison group members during the post-intervention period, but not during the pre-intervention period.

Because interventions targeted treatment employers with information on the STC option, the most direct effect of the interventions should be on plan adoption. Tables 5-2 and 5-3, which pertain to the RCT and QED studies respectively, provide estimates of the intervention's effect on the probability of initiating a new plan in the quarter.[42] Coefficient estimates (and their standard errors) that capture the effects of the interventions on employer use of STC are bolded in the tables.

In each table, the first column reports the basic difference-in-differences specification of equation (1) and the specification reported in the second column adds an interaction of treatment with a dummy variable for the 2013Q4-2014Q3 transition period. In both specifications, the coefficient on the interaction of treatment with the post-intervention period is statistically significant at conventional levels, though it is smaller in the second, more conservative estimate for the RCT study, reflecting the somewhat higher use of STC among treatments in the pre-intervention period. In the RCT study, these coefficient estimates imply that of the 52 new plans adopted in the two years following the start of the interventions, 19 to 24 new plans were induced by the interventions, which represents a 58 to 86 percent increase over what would have been expected in the absence of the interventions. In the QED study, the estimates imply that interventions resulted in an increase of 28 or 29 plans, which represents a doubling in the number of plans as a result of the interventions.[43] Figure 5-2 depicts the more conservative estimates of the effects of the interventions on plan adoption in the Oregon RCT and QED studies.

[42] The dependent variable in this specification is a dummy variable equal to one if the firm initiated an STC plan during the quarter and zero if it did not. As is standard practice in estimating difference-in-differences models with a dummy dependent variable, we estimate a linear probability model (OLS). Linear probability models provide unbiased estimates of mean effects, even if that probability is very low (as is the case for the adoption of an STC plan). That is, our models generate unbiased estimates of the average effect of the intervention on the adoption of STC.

[43] The coefficient on the interaction of the treatment with the post-intervention period represents the average quarterly effect, across the eight post-intervention quarters, of the interventions on the probability of starting a new STC plan. The estimated total plans initiated as a result of the interventions, therefore, is that coefficient estimate (from either column 1 or column 2) multiplied by 8 (quarters) multiplied by the number of treatment firms (9,729 in the RCT study and 11,925 in the QED study). We observe 52 new plans started by RCT treatment firms over the period, of which 19 to 24, we estimate, were induced by the interventions. Similarly, we observe 56 new plans started by QED treatment firms over the period, and we estimate that 28 or 29 were attributable to the interventions.

Table 5-2. Oregon, effect of interventions on employer adoption of STC plan, RCT sample

Key independent variables	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.000030	0.000100	0.000030	0.000100	0.000031	0.000100
	(0.000074)	(0.000123)	(0.000074)	(0.000123)	(0.000074)	(0.000123)
Treatment*2013Q4-2014Q3		−0.000156		−0.000156		−0.000156
		(0.000120)		(0.000120)		(0.000120)
Treatment*post-intervention	**0.000314****	**0.000245***			**0.000105**	**0.000035**
	(0.000124)	**(0.000150)**			**(0.000110)**	**(0.000146)**
Treatment*post-intervention (2014Q4-2015Q4)			**0.000427*****	**0.000357****		
			(0.000158)	**(0.000179)**		
Treatment*post-intervention (2016Q1-2016Q3)			**0.000116**	**0.000047**		
			(0.000182)	**(0.000201)**		
Treatment*prior plan*post-intervention					**0.028039****	**0.028039****
					(0.012836)	**(0.012836)**
Prior plan*post-intervention					0.022328**	0.022328**
					(0.009246)	(0.009246)
Controls for interaction treatment with 2013Q4-2014Q3	no	yes	no	yes	no	yes

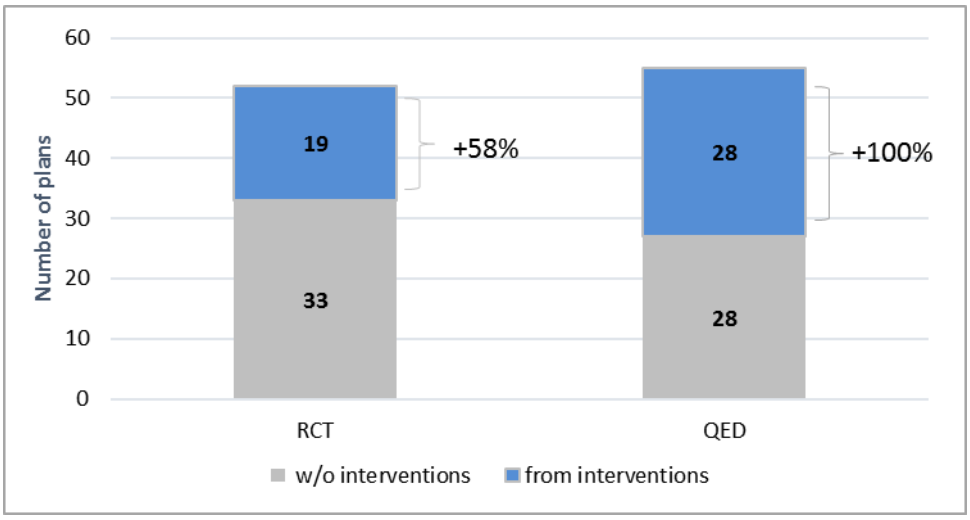
NOTE: Each column represents a separate regression. The dependent variable is started an STC plan. The unit of observation is the UI employer-year-quarter, the time-period is 2012Q3 through 2016Q3, and each regression includes 322,396 observations. All models also include year-quarter fixed effects, industry fixed effects at the 2-digit NAICS level, and controls for the log of employment, the log of payroll, the benefit ratio, the UI tax rate, an indicator for whether the firm is multi-establishment, and the county-level unemployment rate. Standard error estimates are clustered on the firm and are reported in parentheses. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table 5-3. Oregon, effect of interventions on employer adoption of STC plan, QED sample

Key independent variables	(1)	(2)	(3)	(4)	(5)	(6)
Treatment	0.000002 (0.000047)	0.000015 (0.000080)	0.000002 (0.000047)	0.000015 (0.000080)	0.000002 (0.000047)	0.000014 (0.000080)
Treatment*2013Q4-2014Q3		−0.000029 (0.000078)		−0.000029 (0.000078)		−0.000029 (0.000078)
Treatment*post-intervention	**0.000309*** **(0.000104)**	**0.000296**** **(0.000119)**			**0.000280*** **(0.000098)**	**0.000267**** **(0.000117)**
Treatment*intervention (2014Q4-20154Q)			**0.000412*** **(0.000140)**	**0.000399*** **(0.000152)**		
Treatment*post-intervention (2016Q1-2016Q3)			**0.000127** **(0.000129)**	**0.000114** **(0.000141)**		
Treatment*prior plan*post-intervention					**0.007686** **(0.014303)**	**0.007686** **(0.014303)**
Prior plan*post-intervention					0.024725*** (0.009152)	0.024725*** (0.009152)
Controls for interaction treatment with 2013Q4-2014Q3	no	yes	no	yes	no	yes

NOTE: Each column represents a separate regression. The dependent variable is started an STC plan. The unit of observation is the UI employer-year-quarter, the time-period is 2012Q3 through 2016Q3, and each regression includes 384,670 observations. All models also include year-quarter fixed effects, industry fixed effects at the 2-digit NAICS level, and controls for the log of employment, the log of payroll, the benefit ratio, the UI tax rate, an indicator for whether the firm is multi-establishment, and the county-level unemployment rate. Standard error estimates are clustered on the firm and are reported in parentheses. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Figure 5-2. Estimates of increase in STC plans among treatment employers from interventions, Oregon RCT and QED studies



Note: Values derived from models to show estimated number of plans over the two-year period following the start of the interventions.

Figure 5-1 displays a distinct narrowing of the difference between the number of new plans between treatments and controls in 2016. In columns 3 and 4 of Tables 5-2 and 5-3, we allow for separate effects of the interventions in the period during which the interventions were being implemented and in the observation period, during which there was no outreach to either treatments or control/comparison group members.[44] The treatment interactions are statistically significant only for the initial period, and most of the new STC plans attributable to the interventions occurred during the time when the interventions were implemented. There are two plausible explanations for the drop in STC adoption in 2016. The first is the improving economy; unemployment, which had been considerably higher in Oregon than in the United States as a whole prior to the demonstration, declined and by the end of our observation period was about the same as the U.S. average. A second factor potentially affecting treatment employers was the cessation of the interventions, which would suggest that frequent reminders about the STC option are important, at least initially as employers are learning about the program. We cannot distinguish the relative importance of the two forces, though certainly an improving economy would have dampened use.

Although the interventions were intended to provide information on the STC program to employers who were unfamiliar with the option, they also may serve to remind employers with previous STC experience about the program's availability, particularly in view of the fact that even these employers tend to invoke the STC option infrequently. In the specifications reported in columns 5 and 6 of Tables 5-2 and 5-3, we use information from the state of Oregon on employers that had operated an

[44] Specifically, the model includes separate interactions of the treatment group with the time period 2014Q4 to 2015Q4 and with the time period 2016Q1 to 2016Q3. Interventions ended by November 1, and consequently during most of 2015Q4 no interventions were implemented.

STC plan at any time between January 2010 and the start of the interventions to examine whether the outreach targeting treatment employers was more effective in inducing recent users to adopt a plan or those with no recent STC experience (and perhaps no STC experience at all) to do so. These specifications include two additional variables: the interaction of prior plan adoption with the post-intervention period and this variable further interacted with membership in the treatment group. Not surprisingly, in the post-intervention period, prior users are more likely to adopt an STC plan—among both treatments and controls. However, treatment group members with prior STC experience are significantly more likely than control group members with prior experience to initiate STC plans again in the post-intervention period. In fact, most of the positive effect of outreach on plan adoption among treatments in the RCT sample arises from greater plan adoption among recent users, as indicated by the large positive and significant coefficient on the interaction of treatments with prior use and the post-intervention period in Table 5-2.[45]

In contrast to the RCT results, the highly significant coefficient in the models of columns 5 and 6 on the treatment interaction with the post-intervention period shows that the QED interventions increased STC plan adoption among those who had never previously used STC or not used STC recently. Indeed, the magnitude of that coefficient's estimate in columns 5 and 6 in comparison with its magnitude in columns 1 and 2 indicates that most of the effect in the QED study is accounted for by those who have never or not recently used STC.

The outreach interventions administered in the QED study were more intensive than those administered in the RCT study. As detailed in Chapter 2, in addition to periodic mailings to employers, outreach in the QED treatment region included presentations to employer groups, presentations to state employees outside the UI office who come into regular contact with employers, and the distribution of information on the STC program by state auditors. Although the administrative data do not permit us to definitively test whether these additional outreach components were effective, several pieces of evidence suggest that they well may have been. First, the overall estimated effects of the interventions are larger and more significant in the QED study than in the RCT study. In addition, the effects of the QED outreach were concentrated among employers who had never previously used the STC program or at least had not used the program in the preceding 5 years. It is plausible that information provided in face-to-face encounters, such as in employer forums or in one-on-one meetings with state representatives, would be more effective than letters in inducing employers with no prior experience to explore the STC program.

We expect the primary effect of interventions to be on the probability of adopting an STC plan. However, we also tested for effects on other measures of the STC use intensity. Results from several tests—in which the dependent variables are (1) STC benefit payments, (2) number of FTE STC

[45] The point estimate on the interaction of treatment with the intervention period in columns 5 and 6, which captures effect of the intervention on employers with no or no recent experience, falls sharply relative to that in columns 1 and 2, and is insignificant.

workers, and (3) the ratio of STC benefit payments to all UI charges—are reported for the RCT and QED samples in Appendix Tables A5-2 and A5-3, respectively. The last measure, the ratio of STC to total benefit charges, is not defined in quarters in which an employer had no benefit charges, and therefore, the results should be interpreted as conditional on use of the UI system in the quarter. Consistent with the results reported in Table 5-2, we find in the RCT study that among treatment group members STC benefits and number of FTE workers on STC primarily increased among prior users. However, we find no evidence that interventions significantly increased these other measures of STC use in either the RCT nor the QED sample (Appendix Table A5-2 and A5-3).

Finally, we examine selected characteristics of employers affected by the interventions. In the RCT study, employers in goods-producing industries (primarily manufacturing and construction) were more likely to adopt STC plans as a result of the interventions than those in other industries. In the QED study, we find that small employers (defined as having fewer than 50 employees) were somewhat more likely to be induced by the interventions to adopt an STC plan. (See Appendix Table A5-4.)

5.2 Iowa

The Iowa demonstration used an RCT design statewide, and consequently interventions primarily involved mailings with information about the STC program to establishments of employers in the treatment group. As noted in Chapter 3, the structure of the Iowa STC program and the interventions in the state differed in important respects from those in Oregon. Most notably, for the first half of the intervention period, Iowa relieved employers of almost all of the benefit charges they incurred as a consequence of using the STC program. Specifically, through February 22, 2015, the federal government reimbursed Iowa for 92.7 percent of STC benefits paid out, and during the period the state, in turn, relieved employers of the STC charges covered by federal reimbursement. Whereas employers who used layoffs to downsize their workforce would incur UI benefit charges for workers who claimed unemployment insurance and therefore risked increasing their UI tax rate, those who instead reduced staff hours through STC during the "tax holiday" period faced virtually no risk of raising their UI tax rate. This policy gave employers an added incentive to use STC during the first half of the demonstration, provided they were aware of it. The state, with the study team's assistance, developed special brochures featuring the temporary tax advantages of the STC program, which were mailed to all treatment employers in September 2014. A second set of these brochures was to be mailed to all treatment employers in November 2014 with the annual tax rate notice. However, owing to a programming error, the brochure was mistakenly sent to a sample of all employers, which included some in the treatment group, some in the control group, and some outside the study sample (largely because they had fewer than five employees and so were not

eligible to participate in the program).[46] About 3,000 control employers, representing 21 percent of employers in the control group, received the brochure in their tax rate notice mailing. In early January 2015, letters with the information were sent to all treatment employers who did not receive the information in their tax notice.

Our analysis for Iowa largely follows the analyses we conducted for the RCT sample in Oregon. In the Iowa analyses, however, we also take account of any separate effects the interventions had on treatments during the "tax holiday" period as well as any effects of the November tax mailings that many of the control group employers received. Our main finding for Iowa is that the interventions had no effect on the overall use of STC, and we conclude this section with a discussion of potential reasons for why the interventions failed to work.

5.2.1 Tests of the Balance of Covariates and Mean Differences in Outcomes

The characteristics of treatment and control firms in the Iowa study are well balanced, as indicated by the fact that means for treatment and control firms across a wide range of variables measuring size, industry, and experience in the unemployment insurance system are not significantly different at conventional levels (Appendix Table A5-6). Use of the STC program was very low in Iowa in the years leading up the intervention, and it remained low following the commencement of interventions. In our study sample, 31 control employers and 30 treatment firms operated STC plans between 2009 and August 2012. Among these employers, 38 initiated STC plans from September 2014 through September 2016. Control employers initiated 20 of the plans and treatment employers initiated 18 of the plans.

Table 5-4 confirms that, for the most part, various measures of STC use were insignificantly different between treatment and control firms both in the 2 years prior to the start of interventions (left panel) and in the period following the start of interventions (right panel). One exception is that the share of control employers with an STC plan is higher in the pre-intervention period at the 0.05 level of significance. Only four employers in the Iowa study sample, all control employers, operated STC plans in the 2 years prior to the interventions. This small number reflects the fact that few employers were operating plans in Iowa and that those operating plans at the time interventions commenced were excluded from the sample. Extending the timeframe, we find no significant difference in the prior use of STC between the two groups. Between 2009Q1 and 2012Q2, 31 control employers and 30 treatment employers operated plans, and as shown in the second row of Table 5-4, that difference is statistically insignificant (p-value 0.90).

[46] Appendix Table A5-5 compares the mean characteristics of treatment employers that received and did not receive the insert in their 2014 tax rate notice and the mean characteristics of control employers that received and did not receive the insert in their tax rate notice. Those receiving the insert were on average larger than those that did not.

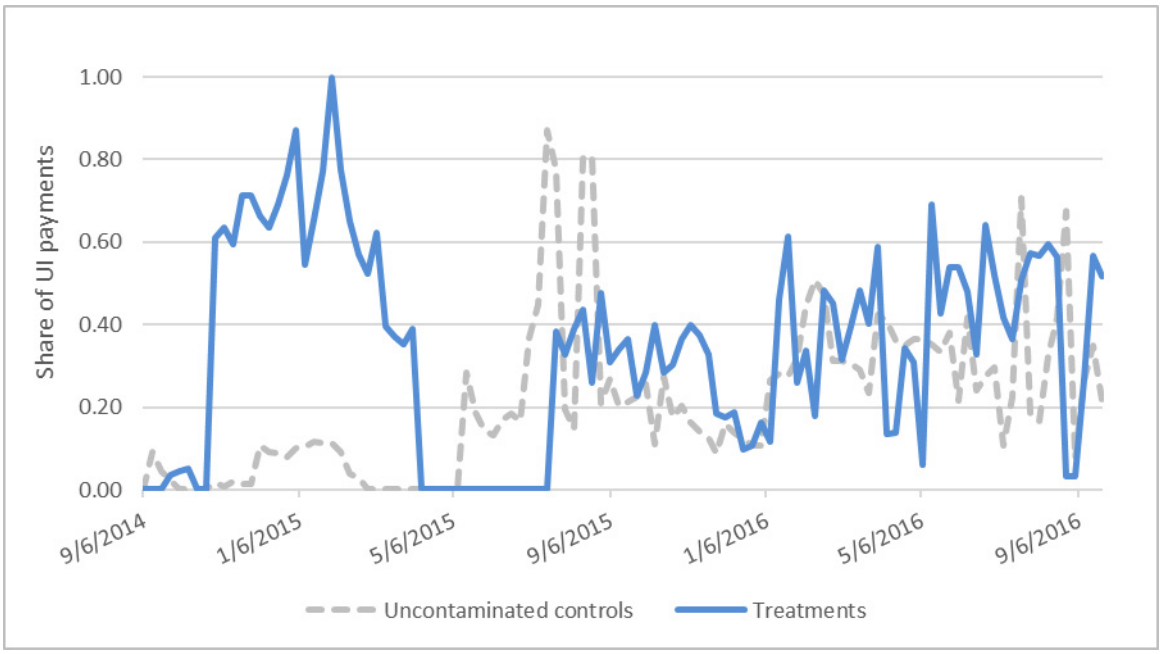
Table 5-4. Iowa, comparison of means of outcomes, treatment v. control

Outcomes	Pre-intervention: 2012Q3-2014Q2				Post-intervention: 2014Q3-2016Q3			
	Treatment N=14,329	Control N=14,327	Difference (T-C)	p-value	Treatment N=14,329	Control N=14,327	Difference (T-C)	p-value
Proportion with STC plan	0.0000	0.0003	−0.0003	0.045	0.0012	0.0010	0.0001	0.724
Proportion with STC plan 2009Q1-2012Q2	0.0021	0.0022	−0.0001	0.898				
Proportion with STC claims	0.0014	0.0010	0.0004	0.303	0.0024	0.0023	0.0001	0.809
Number of individuals with STC benefits	0.0095	0.0191	−0.0096	0.295	0.4624	0.5372	−0.0748	0.766
FTE workers on STC	0.0017	0.0032	−0.0014	0.376	0.0734	0.0855	−0.0121	0.746
Work Share benefits ($)	0.71	1.25	−0.542	0.409	30.76	34.01	−3.25	0.831
Benefit payments ($)	6,600	6,234	366	0.337	10,132	11,265	−1,133	0.417
Work Share benefits/benefit payments	0.0004	0.0004	0.0000	0.979	0.0016	0.0014	0.0002	0.665

5.2.2 The STC Tax Holiday and the Timing of Plan Adoption

Although the interventions in Iowa did not appear to affect the adoption of STC during the period studied, promotion of the tax holiday may have affected the timing and intensity of STC use. While neither treatment nor control employers were charged for STC benefits during the period of federal reimbursement of those benefits, which ended February 21, 2015, the state took special steps to inform treatment employers, along with the control employers who mistakenly received the notice in the tax rate mailing. For the sample of treatment and uncontaminated control employers that operated an STC plan at any point between September 2014 and September 2016, Figure 5-3 plots the share of total UI benefit payments that were STC payments.[47] Treatment employers received notices in early September and again in November or early January about the favorable tax treatment of STC benefit payments through February. Among treatment employers that adopted STC plans during the "tax holiday" period, a majority of the UI benefits paid out were for STC plans; in many weeks STC accounted for between 75 and 100 percent of paid UI benefits among this sample of treatment and control employers who used STC during the 25-month period. In contrast, among uncontaminated control firms that established STC plans during the tax holiday period, regular UI benefits still accounted for the large majority of benefits paid out, indicating that those firms still primarily relied on layoffs in lieu of STC. Among treatment and control employers adopting STC plans following the tax holiday period, there is little apparent difference in the intensity of STC use.

Figure 5-3. STC benefit payments as a share of all UI benefit payments among users



[47] One control employer that received information about the STC program with its tax notice and established a plan is dropped from the control sample. Including this contaminated control employer with the uncontaminated control employers that used STC does not alter the qualitative nature of the finding presented in Figure 5-3.

We estimated difference-in-differences models for Iowa similar to those reported for Oregon. The models reported in Appendix Table A5-6 provide formal tests of the effects of the interventions on the adoption of an STC plan, the value of STC benefits, and STC's share of total UI benefits. Appendix Table A5-7 reports selected coefficient estimates for the effect of the interventions on the probability that an employer had any workers receiving STC benefits during the quarter and the number of FTE workers on STC during the quarter. Not surprisingly, given the low use of STC in Iowa during the study period, the comparability of the treatment and control samples, and similar take-up of STC among treatment and control group employers, we find no effects of the interventions on any measure of STC use in this state, confirming the results of simple mean comparisons reported in Table 5-5. The model results reveal that, compared to control STC employers, Iowa treatment employers who had no experience or no recent experience with the STC program were more likely to adopt STC plans during the post-intervention period, suggesting that the interventions may have induced some new employers to try the program.[48]

5.2.3 Why the Interventions Failed to Increase Overall Use of STC in Iowa: Possible Explanations

Although it is impossible to know exactly why the interventions in Iowa failed to increase overall use of the program in that state during the eight quarters following the start of outreach, several factors plausibly contributed to this result. Possibly the most important factor is the state of the Iowa economy during this time. STC use is strongly countercyclical, and in both Oregon and Iowa, the unemployment rate was falling during the observation period. While Oregon's unemployment rate was somewhat higher than the aggregate U.S. rate during this period, Iowa's was considerably lower. At the start of the interventions in September 2014, the unemployment rate was 2.4 percentage points lower in Iowa (4.2%) than in Oregon (6.6%). By the end of our observation period in September 2016, Iowa's unemployment rate had fallen to 3.6 percent, compared to 4.9 percent in Oregon. The tight labor markets prevailing in Iowa during the observation period could alone explain the very low adoption of STC plans among treatment employers. The findings from the Iowa employer survey and from the tracking data show that (1) outreach efforts more than doubled awareness of the STC program among treatment employers, (2) inquiries to the state from treatment employers were nearly twice as high as those from control employers, and (3) employers who used the program in the past have generally been highly satisfied with their experience suggest that the interventions may boost STC use in a future recession.

The very fact that, historically, STC use had been quite low in Iowa compared to Oregon may have been another factor contributing to the different findings in the two demonstrations. For some

[48] However, the probability of recent STC users (since 2009) adopting new STC plans during the post-intervention period was lower among treatment than among control employers, so on net, the interventions had no effect on take-up.

employers, it may take repeated exposure to the program from various sources before they feel comfortable trying STC in lieu of layoffs. In the RTC study in Oregon, we found that outreach to treatment employers primarily induced employers with prior STC experience to use the program again. In Iowa, there were many fewer prior users who could be reached by the interventions.

Institutional factors also may help explain the low take-up in Iowa. IWD staff resources devoted to the STC program were limited, moreover, the system for applying for benefits was not automated. This meant that when an employer established an STC plan and applied for STC benefits on behalf of participating employees, state staff had to enter the relevant data manually for each individual. If the employer varied the number of hours in STC from week to week—a flexibility feature that many employers find attractive about the program—state staff would have to re-enter data for participating employees every time a change was made. The process of manually entering STC data could be overwhelming for staff. During interviews, staff indicated concern that actively promoting the program before computer improvements could be put in place would create a demand for the STC program that they did not have the capacity to service. Reflecting this concern during our demonstration, state staff denied an STC application from a large control employer that wanted to vary weekly hours. Extensive turnover at the senior leadership level during the demonstration, coupled with resource limitations in administering the program, led to further concerns about creating and meeting increased demands for program usage.

Additionally, Iowa reported that some employers who had used the STC program during the recession were unaware at that time that STC benefit payments were charged to their UI account and complained when their UI tax rates later increased. Afterward, the state added strong language to the literature it sent to employers expressing interest in the STC option about the possible tax consequences of STC use. This wording was removed during the first half of the intervention period, and replaced with language about the favorable tax treatment of STC, and subsequently with language about the neutrality of benefits charges incurred under STC and regular UI. Interviews with staff indicated that in some cases employers considering adopting STC plans were informed about the possible negative tax consequences, and such warnings may have dampened use.

5.3 Evidence That STC Participants Were Subsequently Laid Off

Short-time compensation programs are intended to help employers avoid layoffs during temporary declines in business activity. A common concern is that often employees placed on STC are subsequently laid off because businesses using STC fail to recover. A related concern is that employees who are placed on STC may quit to take a job with more hours.

Although this study was not designed to formally test whether STC adoption avoids layoffs or simply postpones them, descriptive evidence from this study provides no support for the hypothesis that, as a general matter, STC use postpones layoffs. The evidence comes from two sources. The

first is from questions on the long-form survey about layoffs of STC participants. The second source is administrative data, which we use to compute retention rates at STC firms.

Long-Form Survey. This survey asked employers with an STC plan for the number of employees included in their most recent STC plan at the time it was first approved and the number of STC employees laid off after the start of this STC program. In Oregon, 298 employers reported 7,801 employees (unweighted counts) included in their most recent STC plans, of which 75 employers reported 314 employee layoffs, or about 4.0 percent of all STC participants. In Iowa, 44 employers reported 3,944 employees included in their most recent STC plans, of which six employers reported 233 employee layoffs, or 5.9 percent of all STC participants. Notably, one Iowa employer laid off all of its STC employees and accounted for nearly all of the layoffs reported in the Iowa long-form survey.

Retention Rates From Administrative Data. We use administrative data on STC firms in Iowa and Oregon to compute one-quarter and four-quarter employee retention rates for various periods and groups. A one-quarter retention rate of 90 percent and a four-quarter retention rate of 75 percent, for example, would imply that 90 percent of workers employed with a firm in a particular quarter are still employed with the firm the following quarter, and that 75 percent are still employed with the firm four quarters later.[49] Retention rates capture the effects of quits as well as layoffs. We compare employee retention rates following the start of the STC program with past retention rates in the firm. We also compare one and four-quarter retention rates of STC participants with employees who do not participate in the program. Appendix Table A5-8 contains selected tabulations of retention rates in Iowa and Oregon.

If STC use was often followed by layoffs, we might expect to observe retention rates that are lower than rates observed in the past. However, average one-quarter and four-quarter retention rates at STC firms following the start of an STC plan are insignificantly different from retention rates at these firms measured one year prior to the start of the STC plan in both Iowa and Oregon. Comparisons were not sensitive to whether we computed the retention rates following the start of an STC plan or following the last STC payment. Similarly, our results were not sensitive to whether we used weights (employer size as measured by average employment) in computing average retention rates.

If STC participants often are laid off or quit to take a job with a higher number of hours, we might expect their retention rates to be lower than those for nonparticipants. Instead, one-quarter and four-quarter retention rates, measured following the start of an STC plan, for STC participants were insignificantly different or were higher than retention rates for workers who were not put on the plan in both Iowa and Oregon.

[49] A worker is employed by a firm in a given quarter if he or she receives any earnings from the employer during the quarter.

Although these simple comparisons do not control for all factors that might affect retention rates and should not be interpreted as causal, they, along with the long-form survey responses, provide no *prima facie* evidence that layoffs following the adoption of STC are widespread.

Descriptive Evidence of Other Factors Affecting Employer Use

6

In this chapter, we consider other factors besides the lack of program awareness that may impede STC use and help account for the low adoption of STC plans among employers. In contrast to the situation in many other advanced countries, the United States does not have strong employment protection laws that might inhibit layoffs. Therefore, many U.S. employers may decide that STC is not a cost-effective approach to reducing their workforce levels, especially if they view setting up and administering an STC plan as cumbersome and expensive. Similarly, high costs of operating the program may inhibit states' ability to expand the program. To shed light on the importance of these factors, we draw on evidence from the long-form survey and from interviews with employers and state administrators concerning employers' satisfaction with the STC program and the administrative costs of participating in STC. We close the chapter with suggestions gleaned from employer and staff interviews for improving the STC program operation and reducing barriers to STC use.

6.1 Employers' Perspectives on Costs and Benefits

The long-form survey focused on employers with experience with the state STC agency, including those that completed an application or had a plan but did not use it, and those that set up and utilized a plan. There were 88 firms in Iowa and 456 firms in Oregon that provided useful responses. Response rates to the long-form survey were 74.4 percent in Iowa and 67.4 percent in Oregon. Additionally, the interviews provided information whether employers viewed the costs of program participation as burdensome.

6.1.1 Employers' Perspectives on Costs of Using STC

Respondent firms that used STC provided information about the amount of time spent on administrative tasks for their STC program and an estimate of the hourly wage rate for the staff performing those tasks. We multiplied the reported hours by the hourly wage rate and calculated an average cost for development of the STC plan and an average for reporting hours for STC employees. The time needed to develop a plan can vary considerably from one employer to another because of several factors, such as prior experience with STC, the number of sites covered, the number of units covered, and the number of employees covered. Table 6-1 presents the mean values reported by Iowa employers for the costs of setting up an STC plan and reporting hours each week under the plan. Table 6-2 presents the same information for Oregon employers. Staff time represented the bulk of the costs associated with developing an STC plan ($587 in Iowa and $344 in

Oregon). In addition to any possible influence of differences in how the two states' programs are administered, the difference in the average reported employer costs shown in the tables likely reflect differences in the employers who responded, such as their industry, size and staff pay scales. On average, however, staff hours associated with developing and administering an STC plan are relatively modest, representing less than half of an FTE week of staff time to develop a plan and only a few hours per week to administer it.

Table 6-1. Estimated mean values of STC-related costs for Iowa employers

Cost category	Unweighted N	Mean (SE)	10th percentile	90th percentile
Staff hours for developing an STC plan	41	18.67 (3.48)	1.52	39.58
Hourly rate for staff member who developed plan	41	$29.17 (2.10)	15.02	43.31
Estimated cost per employer to develop STC plan	41	$587.05 (151.65)	47.86	1,218.08
Staff hours per week for reporting STC employees hours to the state	44	2.67 (0.76)	1.00	3.50
Hourly rate for staff member who reported STC employee hours	44	$25.12 (1.51)	14.25	38.82
Estimated cost per employer, per week to report STC employee hours	44	$64.12 (15.44)	15.91	90.76

Note: Results are based on responses to the Long-Form Employer Survey. Reported means reflect weighting to adjust for non-response bias. Standard errors of the mean are reported in parentheses.

Table 6-2. Estimated mean values of STC-related costs for Oregon employers

Cost category	Unweighted N	Mean (SE)	10th percentile	90th percentile
Staff hours for developing an STC plan	276	12.03 (0.92)	1.37	28.73
Hourly rate for staff member who developed plan	276	$29.17 (0.84)	14.83	43.53
Estimated cost per employer to develop STC plan	276	$344.11 (32.93)	39.30	799.98
Staff hours per week for reporting STC employees hours to the state	278	5.32 (0.55)	1.00	17.38
Hourly rate for staff member who reported STC employee hours	278	$26.58 (0.75)	14.81	39.89
Estimated cost per employer, per week to report STC employee hours	278	$131.45 (16.15)	19.32	349.91

Note: Results are based on responses to the Long-Form Employer Survey. Reported means reflect weighting to adjust for non-response bias. Standard errors of the mean are reported in parentheses.

6.1.2 Employers' Perspectives on Benefits of STC

The survey asked employers that submitted an STC application to rank the importance of several possible reasons for the firm's decision to apply for STC. As shown in Tables 6-3 and 6-4, nearly all Iowa and Oregon employers indicated that each reason listed in the survey—business survival, maintain employee morale, meet employee needs, and retain skilled or valued employees—was very important or somewhat important. The largest shares of employers ranked retaining skilled workers and valued employees as "very important" (over 90% in Iowa and Oregon). In addition, about 87 percent of Iowa employers ranked maintaining employee morale as very important. Also, about 86 percent of Oregon employers ranked meeting the needs of employees as very important. More than three-fourths of respondents in each state cited business survival as a very important reason for their decision to apply for STC.

Table 6-3. Iowa employers' ratings of the importance of several reasons for the decision to apply for STC

Importance rating	Business survival	Maintain employee morale	Meet the needs of employees	Retain valued employees	Retain skilled workers
Very important	81.4%	86.8%	83.0%	96.5%	98.3%
Somewhat important	16.9%	13.2%	17.0%	3.5%	1.7%
Not important	1.7%	0.0%	0.0%	0.0%	0.0%

Note: Results are based on 58 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias.

Table 6-4. Oregon employers' ratings of the importance of several reasons for the decision to apply for STC

Importance rating	Business survival	Maintain employee morale	Meet the needs of employees	Retain valued employees	Retain skilled workers
Very important	77.7%	80.6%	85.8%	93.1%	91.5%
Somewhat important	16.0%	16.6%	12.3%	5.6%	7.1%
Not important	6.1%	2.0%	1.1%	0.5%	0.5%
Don't know	0.6%	0.8%	0.8%	0.8%	0.8%

Note: Results are based on 354 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias.

Nearly all employers in both states would recommend the STC program to other employers (94.5% in Iowa and 94.4% in Oregon) and would consider applying to establish an STC plan again (89.1% in Iowa and 89.9% in Oregon) (Table 6-5). When asked about their STC employees' general attitude about the program, 87.1 percent in Iowa and 83.7 percent in Oregon indicated that most employees were positive about it (Table 6-6).

Table 6-5. Iowa and Oregon employers' willingness to recommend STC and to apply to establish an STC plan

Whether employer would recommend and apply	Iowa		Oregon	
	Recommend STC to other employers	Apply to establish an STC plan	Recommend STC to other employers	Apply to establish an STC plan
	Percent (SE)	Percent (SE)	Percent (SE)	Percent (SE)
Yes	94.5% (3.1)	89.1% (4.3)	94.4% (1.3)	89.9% (1.7)
No	2.0% (2.0)	5.8% (3.3)	4.7% (1.2)	9.2% (1.6)
Missing	3.5% (2.5)	5.1% (2.9)	0.9% (0.5)	0.9% (0.5)
Total	100%	100%	100%	100%

Note: Results for Iowa are based on 53 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias. Standard errors of the mean are reported in parentheses. Results for Oregon are based on 334 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias. Standard errors of the mean are reported in parentheses.

Table 6-6. Employers' perceptions of the general attitude of employees covered by their STC plan, by state

Attitude rating	Iowa	Oregon
	Percent (SE)	Percent (SE)
Most were positive about it	87.1% (4.6)	83.7% (2.0)
Most were indifferent	12.9% (4.6)	9.9% (1.6)
Most did not like it	0.0%	5.7% (1.3)
Don't know	0.0%	0.7% (0.5)
Total	100%	100%

Note: Results for Iowa are based on 53 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias. Results for Oregon are based on 334 respondents to the Long-Form Employer Survey. Reported percentages reflect weighting to adjust for non-response bias.

6.1.3 Employers' Perspectives From Interviews

Consistent with the survey evidence, interviewed employers were generally quite satisfied with the STC program, saying that it provided a way for them to avoid layoffs and meet the needs of their employees. Nearly all interviewed employers reported that the costs of administering the program, the potential impact on UI tax rates, and the need to maintain employee health and retirement benefits did not affect their decision to use STC. Nearly all said they would use the program again and would recommend it to other employers. Two employers interviewed in one of the states said that they would hesitate to use the program again because of the increase in their UI tax rate after they had used STC.

Employers' Perspectives on Use of STC

Employers said they use STC because it helps to avoid layoffs, and thereby provides an avenue for their employees to maintain earnings when the employer reduces their hours. STC helps employers to survive a reduction in demand, allowing them to maintain employee morale and minimize the loss of valued employees. As a result, employers avoid the costs of rehiring and retraining if it lost workers during a layoff and then had to bring new employees onboard.

Employers stressed the human side of avoiding layoffs: "[it] is devastating to reduce hours or lay people off," and emphasized how STC allows the company to respond to business cycles and other fluctuations in demand. The health of the company depends on employee morale to preserve functionality in the near term and on staff retention to avoid costs and difficulties of rehiring and retraining over the longer term. Employers reported employees being "grateful" for the "relief" that the STC benefits provided and the advantage to morale and a team spirit: employees' "biggest fear is their friends wouldn't have a job." Some employers reported that employees even expressed a preference for the shorter workweek. Less often, employees quit their job, citing "job insecurity" or the need for full-time income.

Consistent with employer reports, Iowa state staff commented that employees were mostly positive about STC because they knew the alternative was either layoffs or a reduction in hours without STC benefits. However, they also observed that if the reduction in hours was going to be large (40–50%), some employees might be concerned about depleting their UI benefit in case a layoff was coming.

Tax costs and the costs of maintaining employee company benefits such as medical insurance were, for the most part, not deterrents, according to the employers interviewed. Satisfaction from employers was extremely high, and most would recommend the program to other employers. One caveat some employers expressed was the requirement in Iowa that everyone in a unit must be on the program and that the reduction in hours be consistent across the unit. This requirement deterred usage, because it did not allow employers to maintain full hours for senior employees, who were the most versatile. State staff also noted that some employers complained about the requirement.

Prior to the beginning of the Oregon demonstration in October 2014, the state charged employers for STC payments differently than regular UI benefits in many cases. Oregon assigns UI tax rates based on the employer's three-year ratio of UI benefit charges to wages paid. Under the previous rules, employers with a benefit ratio higher than their tax rate were required to reimburse the state fund for STC benefit charges in full in the next calendar quarter. On the other hand, regular UI payments would only affect the employer UI tax payment over the following three years regardless of the levels of their reserve ratio and tax rate. Immediate reimbursement to the state potentially presents a cash flow challenge to the employer compared to paying at most one-third of that amount in each of the following three years.

In September 2014, the OED sent a letter to STC users telling them that starting in 2015 both regular UI and STC payments would affect UI taxes the same way. In particular, there would be no dollar-for-dollar reimbursement required in the quarter after STC payments under any circumstances. OED staff reported that the number of inquiries about the effect of STC on UI taxes dropped significantly after the rule change. This drop may have reflected a reduction in calls from former STC employers who had previously experienced the reimbursement requirement.

For the most part, employers in both states who had used the program reported that they would use the program in the future if they needed it and would recommend it to other employers. The exceptions to this were (1) two baseline employers in Iowa (one large and one small) who used the program during the Great Recession and who later saw an increase in their UI tax rate and (2) one employer who had used the program during the period of the temporary federal reimbursement.

Costs of STC Participation for Employers

At the baseline interviews, employers provided overwhelmingly positive feedback and did not see program participation as a burden. The state agency staff and process were described as "wonderful," "zero complaints," "responsive," "quick turnaround," and "made my job easier." All but one of the interviewed employers were prior users and familiar with the process. At baseline, the states reported that some employers "hate paperwork," and that the initial claim set-up was the hardest and the most time-consuming for the larger employers. Only one employer, a very large prior user, found the paperwork onerous and a significant deterrent.

At follow-up, the consistent employer feedback was that the "costs of implementation were not a deterrent." Both small- and medium-size employers expressed this sentiment. The employer reporting the most time for developing a plan (1 to 2 weeks) nevertheless said this was "not a burden." Similarly, most employers did not consider the costs of claims submissions to be a deterrent or a burden and said it was well worth the effort. In sum, evidence from the employer interviews suggests that employers do not see use of STC as burdensome. The employers' claims submission process used by the states during most of the demonstration period in Oregon and still being used in Iowa seemed to average about 5 minutes per employee with the system of individual

forms. In Oregon, on average, switching to a spreadsheet reduced the time for employers even further, to less than a minute per employee.

6.2 States' Perspectives on Costs of Administering the STC Program

The costs of administering an STC program for state staff are likely to be higher than the costs of administering a layoff that achieves a comparable workforce reduction for several reasons. First, state staff must approve an STC plan, but not a layoff. Second, to achieve a comparable workforce reduction (reduction in employees' hours), the number of employees on STC would be higher than the number of employees laid off. Third, some laid-off employees do not file for UI benefits. Because of the second and third factors, the number of UI claims processed is likely to be higher with STC. Lastly, the states may grant employers flexibility to alter the hours that STC employees work from week to week. Employers operating STC plans must report to the state that employees are participating in any given week and the hours they work. State staff must record changes from one week to the next for the purposes of issuing the correct weekly benefit payment to each employee, further inflating the costs of administering the STC program. Because of the higher administrative costs, states may be reluctant to promote the program or they may impose restrictions on its use. MCTRJCA offered grants to states for improving the administration of the program; for example, through the automation of some processes, thereby reducing these burdens for both state staff and employers. We consider the states' perspective on the burden of administrating the STC program using data gathered from the states during the demonstration period and afterward.

We use two sources of information to shed light on the costs associated with administering the STC program and to determine whether these costs are a significant barrier to program expansion. The first is monthly reporting by state staff on time spent on tasks related to the STC program. The second source is interviews and regular contacts with state staff regarding program operations.

Using time reports for Iowa staff, we developed estimates of annual costs by administrative task (e.g., respond to inquiry, set up initial claims, process claims, address questions or address errors) and total costs of operating the program during the demonstration period. Reflecting the fact that the number of plans in operation during the demonstration was very low, we estimate total annual staff time costs of operating the program to be only about $3,000. For Oregon, we received data on time spent on initial and weekly claims processing for the STC program. Probably in large part reflecting the fact that Oregon's STC program was far more active during the demonstration, we estimate annual staff time costs associated with these activities were in the neighborhood of $37,000 to $47,000. The appendix to Chapter 6 in Appendix A provides details on these cost estimates and the assumptions used to generate them.

These estimates by themselves do not suggest the cost of administering the program is high; even in Oregon, processing of STC claims accounted for less than one FTE during the demonstration. Yet, STC, like regular UI, is highly cyclical and because staff manually process initial and continuing claims, a significant expansion of the program could tax staff resources, particularly during a recession. Interviewed state staff members were consistent in saying that updates to the states' computer infrastructure would be desirable. However, OED achieved some improvements and efficiencies, even within the existing infrastructure. Oregon's administrative STC grant enabled it to update its communication with employers and claims processing. Among other changes, employers now have access to state staff through a dedicated telephone line, can find fillable PDF forms online, and are able to submit claims electronically via a state-generated spreadsheet. There was strong agreement among state staff and among interviewed employers regarding the advantages of these improvements.

Iowa staff expressed concern over the labor-intensive process currently required to enter STC claims into the system and stressed the need for improvements. Because of the administrative burden of processing these claims, during the demonstration Iowa staff restricted large employers' ability to alter weekly hours of employees on STC. During the demonstration, we were aware of one large employer who wanted the ability to vary hours from week to week, but the state agency rejected the application because it did not have the administrative capacity to manage such requests. Technological improvements in claims processing may be a prerequisite for expansion of STC usage by large employers in that state.

6.3 Suggestions for Improving the STC Program and Employer Use

The interviews yielded many suggestions from the states and employers about how to improve the states' STC programs and implementation. State staff and employers often agreed about challenges perceived and how to address them. We categorize these suggestions into four areas:

1. **Programmatic requirements** should be clear, consistent, and flexible.

2. **Technology—infrastructure and electronic efficiencies.** Notwithstanding the fact that an updated computer infrastructure is beneficial, states can implement electronic improvements and efficiencies even within the existing infrastructure. Oregon's administrative STC grant started before Iowa's grant, and Oregon was able to use those funds to update its communication with employers and claims processing.

3. **Outreach.** The demonstrations in the two states focused on better informing employers about the STC option. Suggestions for improving outreach fell into three categories:

   a. **Promotion actors and targets.** One of the lessons in the QED was the need to educate and utilize staff across multiple departments in the agency, especially those who have regular contact with employers.

   b. **Timing and modes of outreach.** Other lessons concerned the timing and frequency of outreach efforts as well as the mode of communication. Using mailings that employers can retain for future use along with emails and in-person presentations could be part of an overall strategy that staggers these efforts over time. Promotion of STC, which is a layoff aversion program, is potentially sensitive to employers. Employers may think that the state is contacting them because it has information about the viability of their company or industry. States need to take such sensitivities into account when determining the frequency and nature of outreach efforts.

   c. **Employer access to information.** Staff need to help employers obtain information required to assess whether the STC program is applicable for their firm, whether the timing is right, how to get more information, and how to launch a successful plan and program.

Findings and Lessons from the STC Demonstrations 7

Lack of awareness among employers about the STC program has long been hypothesized as a major barrier to use and explanation for the low employer participation in the program. The STC demonstrations in Iowa and Oregon provide strong support for this hypothesis. In this concluding chapter, we highlight the main findings from the Iowa and Oregon demonstrations, discuss the external validity of our findings, and draw lessons for future outreach efforts in the demonstration and other states.

Findings

Our findings indicate that lack of program awareness is a major barrier to STC use and that modest promotional efforts can significantly increase employer awareness and participation in the program.

- **Employer awareness of the STC program is low in both states.** In our survey, only about 10 percent of Iowa control employers and 21 to 28 percent of Oregon control or comparison employers reported knowing about their state's STC program. The widespread lack of awareness suggests that the large majority of employers could not utilize the program during a temporary downturn, even if doing so would benefit them and their employees.

- **Employer awareness of the program can be greatly increased with modest direct expenditures and allocations of staff time.** In the Iowa and Oregon demonstrations, the share of treatment employers who reported being aware of STC increased by an estimated 15 to 30 percentage points. In Oregon, the more expensive of the two demonstrations, we estimate that the direct and staff time costs of the promotional campaigns that led to this sizeable increase in awareness among treatment employers cost $100,000 or less, which is modest relative to the grants the federal governments awarded some states to promote their STC programs.

- **Raising awareness can have a large, immediate effect on employer participation in the program, even during a recovery.**

  - The evidence supporting this conclusion comes from Oregon, where we observe a large response among treatment employers to the interventions in both the RCT and QED studies. We estimate that in the 2 years following the start of interventions, the outreach increased STC plan adoption by 58 percent among the

RCT treatment employers and by 113 percent among the QED treatment employers. In the QED treatment region, the number of employers operating STC plans was considerably higher a year following the start of the interventions than it was 2 years before the start of interventions, when the economy was much weaker.

– We do not observe any overall effect of interventions on STC use in Iowa, where use was extremely low during our observation period. The strong economy, historically low STC use in Iowa, and capacity constraints and other institutional factors likely were contributing factors.

- **Employers' decisions about using STC may be sensitive to the effects of STC use on their UI tax rate.** Although we found no overall effect of the interventions on STC use in Iowa, treatment employers, who were informed about Iowa's policy of not charging STC benefits to employer accounts for the benefits that were reimbursed by the federal government during the first half of the demonstration, increased their intensity of the use of the program during the tax holiday period. This finding suggests that a reprieve from STC benefits charges may be an effective way to increase employer take-up. Such a policy may be particularly attractive during recessions.

- **The overwhelming majority of employers who have participated in the STC program view it positively, suggesting that there is considerable scope for expanding participation.** Nearly all prior STC users surveyed in Iowa and Oregon reported that the STC program was very important or somewhat important in helping them survive a business downturn, that they would consider using the program again, and that they would recommend the program to other employers. Our survey evidence also indicates that employers generally do not see administrative costs as a major deterrent to program participation, though in interviews some employers reported the desirability of reducing the administrative costs.

- **The cost to states of administering STC plans may pose a significant barrier to program expansion, and improvement in IT systems may need to accompany informational campaigns in some states.** A large program expansion may stress staff resources, particularly if administrative systems are not automated and so are labor-intensive. In our study, there were concerns in Iowa about the state's ability to expand the STC program without first updating IT systems.

External Validity: How Applicable Are the Demonstrations' Findings for Other States and Time Periods?

In assessing any demonstration, it is important to consider whether the findings are applicable outside the context of the demonstration. One concern is the representativeness of the two demonstration states. We have no reason to believe that employers in the two states are, broadly speaking, unrepresentative of employers in other states. The findings from the two employer surveys and in-depth employer interviews corroborated evidence from STC studies recently conducted in other states. Although the challenges facing the Iowa and Oregon state agencies, as well as agencies in other STC states, differ to some degree, there are commonalities. For example, other studies have documented concerns about antiquated IT systems similar to those that arose during interviews and regular contacts with Iowa and Oregon staff during our demonstration.[50] Concerns, particularly in Iowa, about the state's ability to expand the program without first updating IT systems are not unique to that state and point to the need, in some states, to address capacity constraints and lack of employer awareness about the program in tandem.

More relevant concerns about external validity, we believe, pertain to the economic conditions prevailing during the demonstrations and the constraints on the outreach mechanisms employed during the demonstrations. As emphasized in the report, the demonstration took place during an economic expansion, and we expected that this fact would dampen any observed effects of outreach on STC adoption. The effects of outreach on awareness also may be less when the economy is strong than when it is weak if recipients are less likely to pay attention to promotional materials when times are good. It is reasonable to suppose, therefore, that the impacts of similar interventions would have been larger had they been administered during a period when economic conditions were weak and employers are most likely to benefit from the STC option.

Lessons for Future Outreach Efforts

Interventions involved updating and improving informational materials about the STC program—brochures, fact sheets, webpages and, in Oregon, presentation slides—and distributing this information to employers. In both states, the primary vehicle for distributing information was mailings, although in the Oregon QED staff began developing a network of interagency state staff and other stakeholders who communicated to employers about the program. We draw several lessons from these efforts:

[50] See Department of Labor, Employment and Training Administration, Implementation of the Short-Time Compensation (STC) Program Provisions in the Middle Class Tax Relief and Job Creation Act of 2012 (PL 112-96), Report to the President and to the Congress, February 22, 2016.

- **Mailings are a simple, relatively low-cost, and effective way to promote the STC program.** Inserting information on the program into mailings that are already planned—such as in annual tax rate notices—is an especially low-cost option. In the short-form survey, we found that a high share of treatment employers reported having learned about the program via mailings from the state agency, confirming their effectiveness.

- **Because the program is still infrequently used, periodic reminders about STC may be beneficial.** Supporting this conclusion, we found that the promotional materials primarily increased use among employers with previous STC experience in the Oregon RCT study. Following the end of the intervention period, STC use dropped sharply among treatment employers, though this decline also could have resulted from improving economic conditions. In a few cases, the state agencies fielded complaints from employers who received repeated mailings related to a notice of claims. Particularly given the sensitivity of notice of claims, states may want to limit the number of times any employer receives promotional material via this channel.

Our survey evidence indicates that employers often learn about the program through informal channels, such as employees or other employers. This, along with qualitative evidence from states such as Rhode Island that had relatively high take-up of STC during the last recession, suggests that a multi-pronged approach to publicizing the STC program is desirable.[51] Oregon state staff developed a more extensive set of mechanisms for disseminating information about STC in the QED treatment region. Compared to the mailings, these mechanisms involved more staff and took a longer time to develop and implement. Although it is not possible for us to formally assess their effectiveness, particularly given the short timeframe of this study, during interviews and regular communications, Oregon staff generally expressed the view that the supplemental outreach interventions were effective. They have continued to develop and implement them following the conclusion of the demonstration.

The outreach interventions developed for the QED treatment region may provide useful models for other states and include the following:

- **Educating state staff working outside the UI program about STC.** The motivation is to develop a network of state staff who are in regular contact with employers and who can spread the word about the program to those who may benefit from it. Oregon experts on STC made presentations to labor market analysts, tax auditors, and business specialists about the STC program. Labor market analysts, who regularly make presentations about the local economy to employers, in turn, developed two to three slides on the STC program, which they integrated into their talks. Tax auditors and

[51] See Katharine G. Abraham and Susan N. Houseman, "Encouraging Work Sharing to Reduce Unemployment," op. cit.

business specialists disseminated brochures to employers during meetings. Overall, once initial kinks were worked out, state staff felt this outreach was beneficial. The possible exception involved disseminating information during tax audits, owing to the sensitive nature of those meetings.

- **Making presentations to employer groups and other stakeholders.** State STC experts also made presentations to the Oregon Employer Councils (OECs), regionally based private–public partnership organizations focused on workforce issues, as well as to selected other employer groups. Although the number of people attending each meeting was small, the OEC employers have strong connections in the community, often know other employers who may benefit from the program, and can inform those employers about the STC option. For similar reasons, toward the end of the demonstration, Oregon staff sent materials to legislators who represent the QED treatment region, and to their aides. During the follow-up to the demonstration, they intend to incorporate testimonials from an employer in the legislator's district into STC materials targeting state legislators and their staff.

- **Conducting webinars for employers.** The number of state experts on the STC program is small, and because of travel time, it is infeasible for them to conduct many in-person presentations to employer groups. For this reason, webinars were determined to be a more cost-effective way for state STC experts to reach a large number of employers. During the demonstration, Oregon staff conducted two webinars; about 40 employers attended each webinar. Staff used employer feedback from these webinars to modify the presentation and plans to conduct periodic webinars in the future. Appendix B provides slides developed for these presentations.

In closing, we emphasize that even in the Oregon QED study we were unable to utilize certain methods to publicize the program, owing to its experimental study design. These omitted methods include television, radio and billboard advertisements, and presentations at statewide employer meetings. Such outreach methods may be cost-effective in reaching many employers, and states will likely want to use some or all of them if they initiate a statewide campaign.

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Appendix A

Appendices to Individual Chapters

Appendix to Chapter 1
Introduction

Table A1-1. Table of states with STC programs established in law that meet the federal definition of STC[1]

State	Program is operational	Year of original STC legislation
Arizona	Yes	1982
Arkansas	Yes	1985
California	Yes	1978
Colorado	Yes	2010
Connecticut	Yes	1991
Florida	Yes	1983
Illinois	No	1983
Iowa	Yes	1991
Kansas	Yes	1988
Maine	Yes	2011
Maryland	Yes	1984
Massachusetts	Yes	1988
Michigan	Yes	2012
Minnesota	Yes	1994
Missouri	Yes	1987
Nebraska	Yes	2014
New Hampshire	Yes	2010
New Jersey	Yes	2012
New York	Yes	1985
Ohio	Yes	2013
Oregon	Yes	1982
Pennsylvania	Yes	2011
Rhode Island	Yes	1991
Texas	Yes	1985
Vermont	Yes	1985
Washington	Yes	1983
Wisconsin	Yes	2013

[1] Illinois' 1983 STC legislation was abolished in 1988, and new legislation was enacted in 2014. However, Illinois is not yet operating its program.

Appendix to Chapter 2
Study Design

A2.1 Selection of States for the Demonstration

We used several criteria in selecting Iowa and Oregon as sites for this STC demonstration project. In particular, the demonstration states:

- Needed to have a well-established STC program;
- Could not be involved with other U.S. Department of Labor (DOL)-funded studies requiring significant time;
- Needed to have a relatively large manufacturing base, since manufacturers are disproportionately represented among STC users;[2]
- Should not already have high STC use (i.e., there needed to be "room for improvement"); and
- Needed to have UI directors with a strong interest in promoting STC and, more generally, in participating in the demonstration and evaluation study.

DOL, with STC Study Team assistance, conducted telephone discussions in November 2013 to invite Iowa and Oregon to participate in the RCT demonstration. To follow up on the interest expressed by the states to participate, STC Study Team members visited the states in December 2013 to learn more about the operation of their STC programs, explore potential RCT interventions, and discuss next steps.

Weekly discussions with both states occurred in early 2014 to determine the availability of UI administrative data on employers to support random assignment. During that process, a quasi-experimental design was proposed and more fully discussed. Data sharing agreements were signed in early 2014, followed by formal planning to launch the demonstration in fall 2014.

Overview and Characteristics of the States

Iowa. Iowa's STC program is called Voluntary Shared Work (VSW). The VSW plan in Iowa must include an affected group of at least five employees and a reduction of the normal weekly hours of work for an employee in the affected unit by at least 20 percent, but not more than 50 percent.

[2] National data on the industry composition of organizations using STC is not available. Studies, however, have shown that manufacturers disproportionately use STC. For example, a study of California found that while manufacuting firms accounted for only 11 percent of all firms generating UI benefits, they accounted for 62 percent of all STC firms. See Thomas MaCurdy, James Pearce, and Richard Kihlthau, "An Alternative to Layoffs: Work Sharing Unemployment Insurance," *California Policy Review*, August 2004.

The peak of participation occurred in 2009 with 95 employers. In the 12-month period from October 2012 through September 2013, there were 34 employers in Iowa who had an active VSW program for 1 or more months. Most of the VSW employers are described as small (10-250 employees), in manufacturing industries, and located in eastern cities of the state.

Iowa Workforce Development (IWD) did little promoting of the VSW. There was no dedicated web page for the program. Employers heard about it mostly by word of mouth or from IWD business representatives. When an employer inquired about VSW, the VSW administrator replied with a detailed email (with 14 attachments) to the employer. The email provided information about the program, instructions for submitting a plan, and materials related to other requirements once a plan is accepted.

Iowa received reimbursement from the Federal government for STC benefits paid out. Because of sequestration, the Federal reimbursement was somewhat less than 100 percent.[3] Notably, in 2014 the state opted not to charge employers for the STC benefits that were federally reimbursed, providing a potentially important incentive for employers to use work sharing in lieu of layoffs prior to February 22, 2015. Iowa also received Federal grant monies available to improve outreach and the administration of its STC program, but the staff also understood the importance of not undertaking activities that could contaminate the demonstration project results.

Iowa had a sizable presence in manufacturing and in professional, scientific, and technical services, with about 2,300 firms and 1,900 firms, respectively, in 2013. In both sectors, firms had large skilled workforces and would potentially benefit from the STC option. As in any state with a STC program, potential use in any given period depends not only on the state's industry structure but also on the state of its economy; use of STC programs typically rises during recessions and falls during expansions. According to an Iowa report, Iowa came out of the most recent recession faster than other states, led by strong growth in agriculture and manufacturing. In April 2014, the unemployment rate in Iowa was just 4.3 percent, two percentage points lower than the national unemployment rate.[4]

Oregon. The STC program in Oregon is called Work Share. A Work Share plan must include an affected group of at least three employees and a reduction of the normal weekly hours of work for an employee in the affected unit by at least 20 percent, but not more than 40 percent. As with Iowa, Oregon also received Federal reimbursement for STC benefits, but the Oregon Employment Department (OED) interpreted state law in a way that precluded it from relieving employers from

[3] With respect to the federal reimbursement of STC benefits paid, sequestration applied to multiple fiscal years: In FY2013, the STC federal reimbursement was 94.9 percent (reduced by 5.1%); in FY2014, the STC federal reimbursement was 92.8 percent (reduced by 7.2%); and in FY2015, the STC federal reimbursement was 92.7 percent (reduced by 7.3%). In FY2012, the STC federal reimbursement was 100 percent.

[4] See Iowa Workforce Development, *Iowa's Workforce and the Economy 2013*.

STC charges during the period of Federal reimbursement. Effective October 1, 2014, Oregon law governing its STC program was brought into compliance with Federal law. To come into compliance with Federal law, however, Oregon had to change its rules concerning charging certain employers for STC benefits. Previously, employers whose benefit ratio exceeded their tax rate were required to fully reimburse the state for Work Share benefits paid; now, the tax treatment is the same whether employers use Work Share or lay off employees. OED indicated that this change could provide a significant incentive for certain employers to use the Work Share program. The Oregon Work Share program began in 1993. The largest number of employers using the program was in 2010 (794) and 2011 (473). As of December 2013, more than 180 employers in Oregon had an active Work Share plan, with over half of them (57 percent) located in the Portland metro area. The Portland metro area accounted for a little under half (46 percent) of the employers that were eligible to participate in the Oregon Work Share program.

OED did little promotion of the Work Share program. OED systematically provided employers with information about Work Share only via its Work Share webpage. Interested employers contacted the Work Share administrator, who answered questions and provided further information.

Based on our personal communications, OED staff members were committed to the Work Share program and enthusiastic about participating in the demonstration. The consensus was that Work Share was underutilized in the state. In 2014, OED received STC grant funding from DOL to improve outreach and program administration. OED delayed conducting grant activities so as not to interfere with the demonstration. OED saw participation in the study as a way to better understand the effectiveness of outreach efforts and therefore to better target its Federal grant monies.

In contrast to the situation in Iowa, Oregon's recovery from the recent recession has been relatively slow. According to data from the Bureau of Labor Statistics, Local Area Unemployment Statistics program, in April 2014, the state's unemployment rate was 6.9 percent, compared to 6.3 percent nationally. Economic conditions varied considerably across the state. Oregon has four metropolitan areas outside of Portland: Salem, Bend, Eugene, and Medford. In the Portland area, unemployment was 6.2 percent in March 2014, compared to 7.3 percent in other metro areas combined and 8.5 percent in non-metro (or rural) areas combined.

A2.2 Selection of Employers for RCT and QED Studies

We used a stratified sample design in Iowa to randomly assign employers to a treatment or a control group. In Oregon, we implemented a random control trial (RCT) similar to that in Iowa in the Portland metropolitan area of Oregon and a quasi-experimental design (QED) in the balance of the state. In the Portland metropolitan area, as in Iowa, we constructed a stratified sample of all employers and randomly assigned them to treatment and control groups. OED divides the state into 15 state Worksource Regions for the purposes of delivering services (Figure A2-1). The QED uses

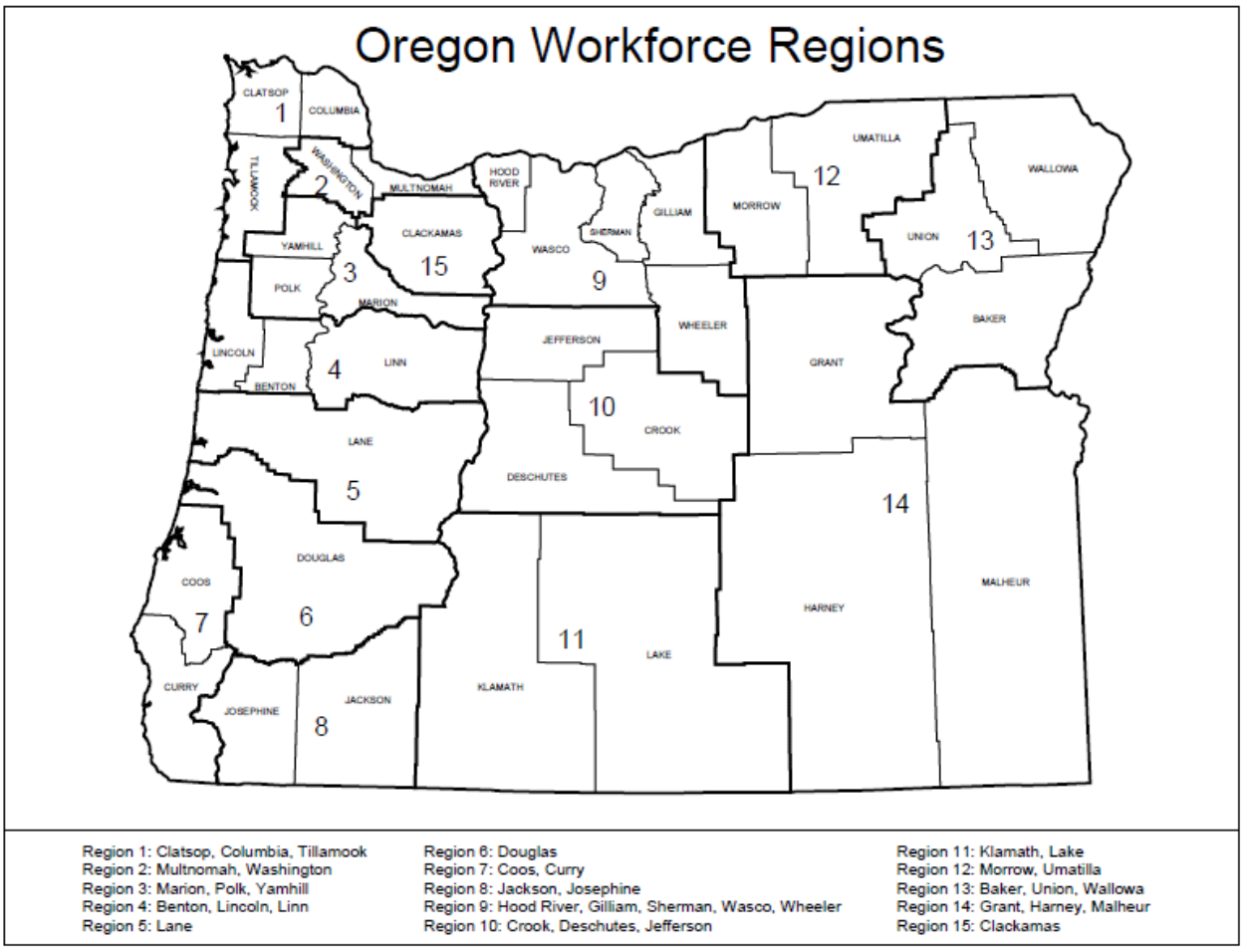
Worksource Regions located outside of the Portland metro area as the basis for employer assignment: all employers located in one set of Worksource Regions received interventions, while all employers located in the other set did not. We refer to these as the "treatment" region and the "comparison" region, respectively. The areas designated as treatment and comparison regions were selected so as to be balanced on key factors: metropolitan areas (two each), the number of employers, and the industry distribution of employment. Reflecting this balance, STC use, although fluctuating with the business cycle, has been near identical in the treatment and control regions in each of the 6 years preceding the demonstration. Portland is by far the largest metropolitan area in Oregon, and it would be difficult to integrate Portland into a quasi-experimental design because assignment of Portland to either the treatment or comparison region would disrupt the balance between the two.

Iowa and Oregon provided Upjohn and Westat with historical data about UI employers through the third quarter of 2013. These data were used to construct treatment and control samples in the two states. In the Iowa data, some but not all of the employers that had multiple locations were represented by multiple records corresponding to their multiple locations. In the Iowa data, 629 firms were classified as multiple establishment firms, but were reported as a single unit. Therefore, no establishment detail were available for those firms. Also, for the third quarter of 2013, 18 firms classified as being multi-establishment lacked records concerning their sub-units/establishments. Each employer, however, was identified by a unique identifier. For Iowa, we used the data provided to create an employer-level data file containing the following variables:

- Identifier for the UI employer account;
- North American Industrial Classification System (NAICS) code;
- Work-share region: For employers having multiple locations, the assigned region was the one with the most employment;
- Number of employees, calculated by averaging monthly non-zero employment over the 12-month period from October 2012 through September 2013;
- Indicator of work-share usage at any time during the 12-month period;
- Indicator that the employer contributes to (non-reimbursable) UI;
- Total UI benefits charged during the 12-month period;
- Total separations for lack of work during the 12-month period;
- 2013 UI benefit ratio; and
- 2013 UI tax rate.

A similar employer-level data file was created from the data provided by Oregon.

Figure A2-1. Map of Oregon workforce regions



Employers eligible for the intervention studies were those currently in business and likely to meet STC plan requirements, but without current STC plans. In Iowa, all employers covered by UI and who had five or more employees could establish STC plans. The number of such Iowa employers was 28,692, and 34 of these employers had an STC plan sometime during the period from October 2012 through September 2013. Hence, Iowa had 28,658 employers eligible to participate in the intervention study, which was an RCT involving all study-eligible employers.

In Oregon, all employers covered by UI who have three or more covered employees could establish STC plans, and 182 of these employers established STC plans sometime during the period from October 2012 through September 2013. For Oregon, an RCT involving 24,661 employers was conducted in the Portland area—specifically, Workforce Regions 2 and 15. Outside of the Portland metro region, we divided the balance of the state into a treatment region and a comparison region.

Assignment Procedures

The procedure that we used to randomly assign employers in the RCT studies to treatment and control groups is referred to as *blocking* in the program-evaluation literature and is referred to as *stratified sampling* in the survey-sampling literature. The random assignment of one-half of the employers in the RCT studies to the control group and the other half to the treatment group was done within non-overlapping groups of employers—referred to as *blocks* or *explicit strata*—such that employers in the same group are similar with respect to characteristics known for all employers participating in the RCT studies.

According to Bloom (2005, p. 147), the two main criteria for defining blocks are face validity and predictive validity:[5]

> "Face validity is the degree to which characteristics that define blocks appear on their face to be important determinants of the outcome measure being used. Thus, when assessing the face validity provided by a blocking on a set of characteristics, it is important to ask: To what extent does ensuring that the program and control groups have the same distributions of these characteristics lend credulity to the evaluation findings? …
>
> "Predictive validity is the degree to which characteristics that define blocks predict and thus can be used to control for random variations in the outcome measure. …"

The creation of blocks and then randomly assigning employers within each block to equal-size samples creates treatment and control groups that are similar with respect to the characteristics used to define the blocks. By using systematic sampling within blocks, the treatment and control groups are also made similar with respect to one or more additional characteristics—referred to as *implicit stratifiers*. Within each block, employers were sorted by the additional characteristics, the first employer in the sorted list within each block was randomly assigned to either treatment or control, and then all the subsequent employers in the sorted lists were assigned in alternating order to treatment or control. Every employer that was eligible for the RCT had a probability of 0.5 of being assigned to the treatment group and also had a probability of 0.5 of being assigned to the control group. These assignment probabilities did not vary across blocks. By sorting employers within blocks, however, employers that are close to each other on the sorted lists are more alike with respect to the implicit stratifiers than employers that are far from each other in the sorted order. Iachan (1983)[6] has shown that when this type of correlation structure exists, the expected sampling variability of systematic sampling is less than or equal to the expected sampling variability of simple

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[5] Howard S. Bloom (2005), "Randomizing groups to evaluate place-based programs," in Bloom, H.S. (ed.), *Learning More from Social Experiments* (New York: MDRC, 2005).

[6] Ronaldo Iachan, "Asymptotic Theory of Systematic Sampling," *The Annals of Statistics* 11, no. 3 (1983): 959-969.

random sampling. Sorting by the implicit stratifiers and then using systematic sampling produces samples that are more representative with respect to the implicit stratifiers than does simple random sampling.

For both RCTs, we assigned the 50 largest firms in terms of their number of employees to a large-employer stratum. These employers were sorted by their number of employees. Following a random assignment of the first employer to either the treatment or control group, the employers then were assigned to treatment or control in an alternating pattern.

The balance of the employers eligible for each RCT was explicitly stratified by NAICS sector and Workforce Region for Iowa and by NAICS sector for the Oregon RCT. We performed implicit stratification within the explicit strata by sorting the employers by two employer-level variables. The first sorting variable was a categorical variable based on the employer's benefit charges during the 12-month period from October 2012 through September 2013. Employers that had no charges were assigned a value of 0. If for a particular combination of industry and region there were fewer than 20 employers that had UI charges, the categorical variable based on charges is equal to 1 for the employers that have charges. If there were 50 or more employers that had charges, the positive values of the categorical variable indicate which quintile of UI charges the employer belongs to with respect to all employers that had charges in a particular industry and region. If there were 20 or more but fewer than 50 employers with charges, the positive values of the categorical variables indicate a classification coarser than quintiles for each employer that had charges with respect to all employers with charges in a particular industry (and region). Specifically, there are two positive values for the categorical variables when the number of employers is 20 or more but less than 30, three positive values when the number of employers is 30 or more but less than 40, and four positive values when the number of employers is 40 or more but less than 50 employers in a particular industry (and region).

The second employer-level sorting variable was an employer's number of employees, calculated by averaging monthly non-zero employment during the 12-month period from October 2012 through September 2013. The third sorting variable was a randomly generated number between 0 and 1. The sorting of employers within the explicit strata by the three sorting variables was done in a serpentine fashion by using the "hierarchic serpentine ordering" procedure described by Williams and Chromy (1980),[7] which permits one to use multiple variables as implicit stratifiers. In a serpentine sort with three variables, the sorting order of the second variable alternates between increasing and decreasing as the value of the first variable changes, and the sorting order of the third variables alternates between increasing and decreasing as the value of the second variable changes. Following the sorting in serpentine fashion of the employers within each explicit stratum, the first employer in the stratum

[7] Williams, R. and Chromy, J. (1980). SAS sample selection macros, *Proceedings of the 1980 SUGI Conference*, SAS Institute, Cary, NC.

was assigned to either treatment or control. Then, all remaining firms were assigned to treatment or control in an alternating pattern.

We also sorted the explicit strata. For Iowa, we sorted the explicit strata based on the average UI tax rate of employers belonging to the strata. For Oregon, the explicit strata are industries, which we sorted by 2-digit NAICS code. The sort order or the explicit strata determined the sequence for randomizing employers within each explicit stratum. The assignment to treatment or control for the first employer in each explicit stratum was the opposite of the assignment for the last employer in the preceding explicit stratum.

The randomization approach had many explicit strata. There were 20 NAICS sectors. Iowa's RCT involves 16 Workforce Regions, and Oregon's RCT involves two Workforce Regions. Having many explicit strata and also implicitly stratifying by sorting within explicit strata are frequently used methods when selecting samples from large populations of businesses. For example, in surveys of farms, the explicit strata may be states and/or counties and then individual farms systematically sampled within the explicit strata in such a way that farms near each other geographically are near each other on the list used for systematic sampling. In smaller evaluation studies, such as randomizing schools within a city, one should avoid having a large number of explicit strata because of the loss of one degree of freedom for each explicit stratum when estimating the residual error. Because of the large number of employers participating in the Iowa and Oregon RCTs, however, we believe that having a large number of explicit strata will not be a problem.

We reviewed the resulting RCT randomizations by comparing the mean, median, and quartiles of the treatment and control groups for a number of variables, such as the number of employees, total UI charges, and UI benefit ratio. The use of systematic sampling produced treatment and control groups that are more similar with respect to the explicit and implicit stratifiers than would be with the use of simple random sampling. However, if subsequent data analyses assume simple random sampling was used, then the standard errors of treatment effects may be overestimated and could result in loss of statistical power. By using replication methods to estimate standard errors—such as the delete-a-group jackknife, described by Kott (2001)[8]—unbiased estimates of standard errors can be obtained.

Defining Treatment and Control Regions for the Oregon QED

Outside the Portland area, about 13,400 employers have at least three employees and so are eligible to participate in Oregon's Work Share program. The QED starts with the same treatment interventions as used in the Portland RCT, but adds more interventions that are deemed to be very

[8] Kott, P. (2001). The delete-a-group jackknife, Journal of Official Statistics, v. 17, pp. 521-526.

effective based on experiences in states with relatively high STC use, but that are not compatible with an RCT. Because a primary mechanism for delivering the supplemental interventions is meetings of employers located within a particular Worksource Region and the Worksource Offices that service all or a subset of employers located in a region, we use the 13 Worksource Regions outside of Portland as the basis for defining treatment and comparison regions for the QED. The goal is to define treatment and comparison regions in the QED that are as comparable as possible on key observable variables that affect the probability an employer will utilize STC. Because of their small number, random assignment of Worksource regions into treatment and comparison groups is not optimal; models that carefully balance key observable factors will generally result in more comparable treatment and comparison regions. As Larry Orr points out, "…purposive selection is preferable to random selection of sites when the number of sites is small because in small samples sampling error can create large differences between the sample and the population from which it is drawn." [9] The treatment region consists of employers located in Worksource regions 1, 3, 4, 9, and 10, and the comparison region consists of employers located in Worksource regions 5, 6, 7, 8, 11, 12, 13, and 14 (see Figures A2-1 and A2-3). We experimented with a number of possible combinations, and this division seems the best on several key dimensions:

- The treatment and comparison regions are fairly well balanced in terms of the number of Work Share-eligible employers and their industry distribution. Most important, employers in durable goods manufacturing, non-durable goods manufacturing, and professional and technical services are well represented in each region; last year, the number of STC-eligible manufacturing employers in the proposed treatment and comparison regions was 1,097 and 938, respectively, while the number of STC-eligible employers in professional and technical services was 914 and 886.

- Prior use of Oregon's Work Share program is comparable. As of December 2013, 36 employers in each region had an active Work Share plan.

- The treatment and comparison regions each have two metropolitan areas. Outside of Portland, there are four metro areas in Oregon, and the treatment region includes Salem and Bend, while the proposed comparison region includes Eugene and Medford. In addition, the Cascade Mountains divide the state, and each of the regions has metro areas in the western part of the state (Salem and Eugene) and metro areas considered to be in the eastern part of the state (Bend and Medford).

Although use of STC is highly variable, rising during recessions and falling in recoveries, the number of new STC plans implemented in the treatment and comparison regions is near identical in each of the 7 previous years (see Figure 2-1 in report).

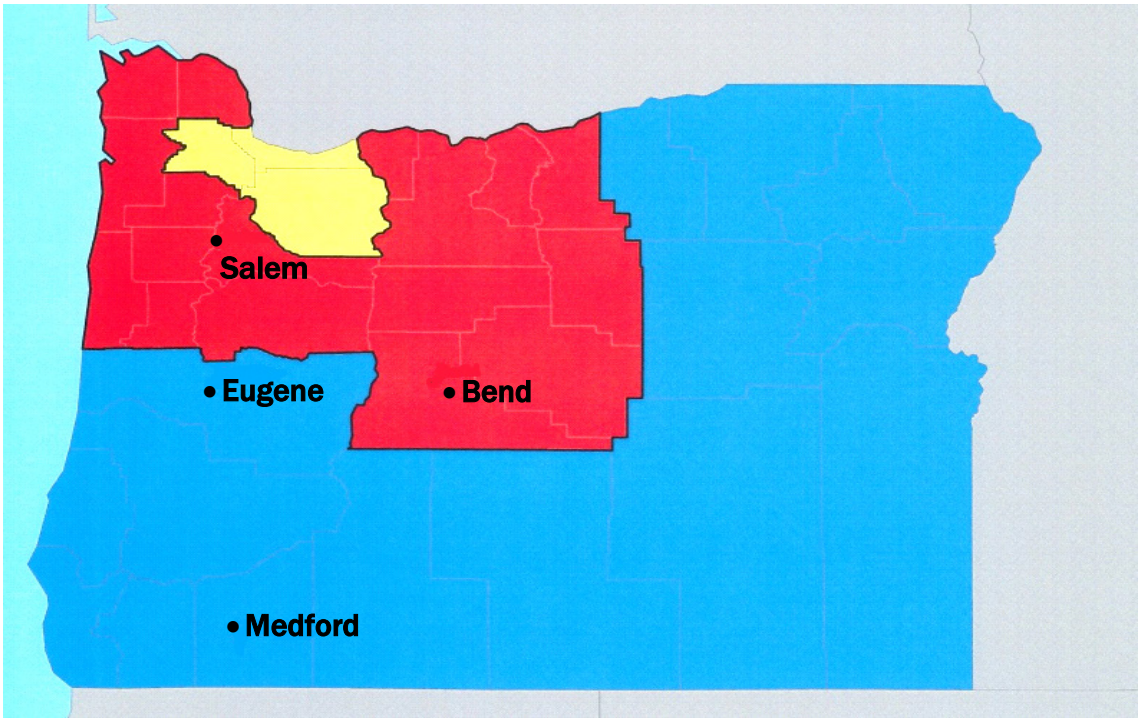
[9] Larry L. Orr, Social Experiments: Evaluating Public Programs with Experimental Methods (chap. 7). (Sage, 1999).

For practical reasons, it was preferable to designate the regions with Salem and Bend as the treatment region and the regions with Eugene and Medford as the comparison region. The success of this demonstration project depends critically on the ability of state agency staff to properly implement the treatment interventions. The staff members who will be overseeing the supplemental interventions and making many of the presentations to employers will be based in Salem. Because of the state's size and difficulty in accessing the eastern part of the state, selecting the Salem/Bend region for the roll-out of these new types of promotions will likely result in better oversight and enable a greater number of in-depth employer presentations by subject matter experts.

One might be concerned that there could be contamination if employers in the control (RCT) or comparison (QED) groups gain access to information given to treatment employers. This could occur if treatment employers relay information they receive about the program to employers in the control or comparison groups. Arguably, such information exchanges are more likely to occur among employers located in the same locale. By defining the treatment region and the comparison region as a set of contiguous Worksource regions, we reduce the chances that such contamination will occur—at least from the employers in the QED treatment region to control employers in the Portland region or the QED comparison region. In addition, the primary mechanisms for outreach in the QED treatment region—local employer meetings, one-on-one meetings with employers, and distribution of informational materials at local offices of the Employment Services or business groups—will not be accessed by employers outside the area. Figure A2-2 shows the Oregon RCT and QED intervention areas. The RCT area is yellow; the QED treatment region is red; and the QED comparison region is blue.

Possibly of greater concern is the fact that some employers have establishments located in multiple regions of our study (Portland/treatment/comparison regions). The problem is relatively minor, however. More than 98 percent of both manufacturing employers and professional and technical services employers, who account for the majority of the Work Share use in Oregon, have only one establishment or are located in a single study region. For employers located in more than one of our study regions, we are minimizing bleed among establishments by using establishment-level addresses for mailings. In the treatment region, only representatives of establishments located in the treatment region would be likely to attend an employer meeting or visit a local Worksource office, for example. Because we know the identity of these employers, we will include controls for them in statistical analyses of the impacts of interventions.

Figure A2-2. Map of Oregon intervention-study areas



States' Experience Implementing Interventions

Iowa

In our early discussions with Iowa about which intervention mechanisms to use, sending emails to treatment employers with a promotional message and a link to the STC webpage was considered as a low cost option. However, as the start of the demonstration period approached, IWD determined that it could not proceed with emails as a mechanism because its anticipated database for employer contact information would not be ready and existing contact data was not reliable.

In Iowa, the notable deviation from fidelity occurred during the November 2014 UI tax notice mailing. During employer interviews in December of 2014, we discovered that an insert describing the STC program, which was to be included only in the mailings to treatment employers, had been sent to some control employers. Upon further investigation in cooperation with state staff, we learned that because of a programming error, IWD randomly sent the insert to employers, including 21 percent of control employers; many treatment employers did not receive the insert. After discovering this error, the study team required both states to submit mailing list IDs to the study team before sending mailings to confirm that each list consisted only of treatment employers. In January, using the list of employers, IWD mailed the insert to treatment employers who did not

receive the insert in their November tax rate notice. Iowa staff provided us with a list of control employers that received the November tax rate insert, and we take these "contaminated" control employers into account in our data analyses (i.e., they are excluded from main analysis).

In addition, IWD accidentally discarded returned letters from the first Iowa mailing that occurred in September 2014, meaning that it was unable to attempt to correct addresses and resend the information. In later mailings, to avoid similar errors recurring, returned mail went to one of the IWD staff working on the project rather than to the mailroom.

In July 2015, IWD launched a new web system for the agency. Agency staff believed that the tracking of demonstration URLs would continue with the move to the new system. However, this did not happen for 2 months following the transition. IWD later restored tracking, but data for this 2-month period were lost. The timing of this development was unfortunate, as web tracking data are missing for the period immediately following the second large mailing to all treatment employers.

Oregon

Oregon was enthusiastic about the demonstration and testing different intervention mechanisms. Although it did not have email addresses for most of the treatment employers, it was willing to try it with employers for which it did have email addresses. About a third of the emails sent bounced back as undeliverable. Recognizing that it was not reaching many and that it would be a large effort to update the list, the agency decided that it would be best not to continue with email as an intervention. Maintaining and updating employer contact lists is resource-intensive.

The supplementary outreach in the QED demonstration, which involved presentations to employers and government employees by staff in several parts of the OED, was more difficult to coordinate than the outreach in the RCT portion of the demonstration, which primarily involved mailings to employers. OED delayed the initial implementation of these supplementary outreach efforts, and later required some mid-course corrections. We originally planned to rely primarily on the state's relationship with the OEC to promote the STC program in the treatment region. OED and OEC coordinated to make presentations on the STC program at OEC board meetings in each of the eight OEC offices in the treatment region, and OEC offices emailed announcements about the webinar to members. However, various factors limited OEC's role in further promoting the program. In particular, it was determined that larger meetings hosted by local OEC chapters were generally not appropriate vehicles for distributing information about the STC program because these meetings were infrequent (no regular schedule) and, when they were held, focused on other agenda items. In addition, the OEC covering the Salem metropolitan area, one of two metropolitan areas in the treatment region, was inactive. Finally, as mentioned, the OEC partnership with OED ended in July 2015, before the conclusion of our demonstration.

For these reasons, prior to the start of the demonstration and in consultation with OED, we decided to supplement outreach through the OEC offices with presentations made by workforce analysts, who regularly meet with individual employers and groups of employers to provide local labor market information. However, monitoring revealed that few workforce analysts were presenting material on STC. During a site visit in February 2015, we met with the group of workforce analysts and learned that there were several reasons for the limited outreach. First, workforce analysts had been tasked that year to make presentations at educational institutions, which limited the number of presentations to employer groups. Second, the workforce analyst covering the Salem metro area had left the job, and so there was no one with contacts in that employer community to fill the void. Finally, there was a misunderstanding among some workforce analysts as to the purpose of the study and the outreach to conduct. Some believed they were to push the program on employers and felt uncomfortable doing so. We corrected this misperception during the meeting, and outreach among the workforce analysts increased. In total, workforce analysts gave materials to 10 employers during one-on-one meetings and distributed brochures and incorporated slides into presentations at another 29 employer meetings.

During the February 2015 site visit, we agreed with OED to supplement the employer presentations further with outreach by tax auditors working in the QED treatment region. Tax auditors are often vehicles for distributing information about government-based labor market programs. OED and the study team provided auditors with brief training on the STC program, as well as instruction to provide brochures to employers they were auditing and to direct employers who wanted more information to experts in OED. Tax auditors reported providing brochures to about 80 employers.

In addition to issues concerning outreach in the QED treatment region, we encountered some problems with the information tracking systems. OED did not record inquiries during July and August 2015, as STC operations were taken over by another unit with new staff members.

OED Business Employment Specialists (BES) have direct contact with employers and received guidance on making presentations to employer groups or discussing STC one-on-one with employers. To record these activities for the demonstration, OED established a tracking system in the iMatchSkills system to record the number of employers contacted and number of brochures distributed. Few of the BES recorded the information and OED did not deliver the information from iMatchSkills to the study team; instead, OED provided reports from individual BES about their activities.

Another form of outreach we developed with OED involved educating legislators about STC so that the legislators could discuss inform their constituents. OED developed an email for OEC to send to legislators representing areas included in the treatment region, asking if the legislator was interested in talking with OED about STC, and if so to contact OED to schedule a discussion. Because of concerns about potential contamination—specifically that treatment-region legislators would share the information with legislators from the control region—OED decided that the best

time to do the outreach was after the conclusion of the main legislative session in June and before the interim session in September, a period when legislators generally would be back in their districts. OEC sent the email in late August 2015. OED reported that it did not receive any responses from legislators.

Appendix to Chapter 3
Data Collection Activities and Methods to Address Research Questions

A3.1. Administrative Data for the Short-time Compensation Evaluation

Overview

Program administrative data were provided by Iowa Workforce Development (IWD) and Oregon Employment Department (OED) in support of the demonstration and evaluation. Administrative data from both states were provided from UI administrative files on employers, employees, and program payments. Data on characteristics of employers and their interaction with the UI system were drawn mainly from UI tax systems that include employers' quarterly reports to the state on wage and salary payments to all employees. Data on employees comes from the quarterly employer reports on wage payments and from applications for UI benefits. Naturally, program payments data come from UI administrative payment systems. These systems disburse payments for both regular UI and STC compensation.

Iowa Program Administrative Data

The Iowa analysis was based on three data files. The first is an employer file that included information about the 28,658 treatment and control group employers and covered the time period of the third quarter of 2012 through the fourth quarter of 2015.[10] The employer variables listed in Table A3-1 provide information on firm characteristics. Examples include total and taxable wages, the firm's benefit ratio, tax rate and UI benefit charges, an industry code and an indicator whether the firm had initiated a VSW plan during the quarter.

The second administrative data file provided information on the weekly UI benefits payments to UI applicants from the third quarter of 2012 through the fourth quarter of 2015. The data include the payments associated with 197,165 weeks of UI claimed. The Iowa certification variables are listed in Table A3-2. Since some states refer to this type of data as certifications, it is referred to here as the certifications file. The data are organized by an individual identifier (Social Security number), the date the UI claim became effective, the week for which the individual was compensated and the amount of the UI benefit. Important to the analysis, the data file included an indicator for whether the payment was associated with STC or regular UI along with the employer ID of the separating employer which provided a link back to the employer file described above.

[10] The employer extract failed to produce any data for one control group firm which was dropped from the analysis.

Table A3-1. Iowa employer variables from program administrative data on employers in UI tax payment systems for regular UI or STC in Iowa

Variable name	Variable label
empid	Employer ID
yyyyq	Year and quarter
initiated_vsw	Initiated VSW plan in quarter
wages_total	Total wages
wages_taxable	Taxable wages
employment	Employment in quarter
benefit_ratio	Benefit ratio
tax_rate	Tax rate
charges	UI benefit charges
naics	NAICS industry code
zip_code	ZIP Code
county	County code
reimbursable	Reimbursable employer
multiple_locations	Multiple location employer
eligibility_year_exp	Year of experience rating eligibility
status_date	Status date
effective_date	Effective date
inactive_date	Inactive date
treatment	Treatment, 1=yes, 0=control group

Table A3-2. Iowa weekly certification variables for weekly UI or STC payments from program administrative data systems

Variable name	Variable label
ssn	Social Security number
edc	Effective date of claim
week_ending	Week ending date
wba	Weekly benefit amount
earnings	Earnings
benefit	UI benefit amount
stc	STC payment
empid	Employer ID
birth_year	Year of birth
age	Age as of EDC
male	Gender, male
female	Gender, female
treatment	Treatment, 1=yes, 0=no
file_yyyyq	YYYY:Q of data file

The third Iowa data file is a quarterly wage record data set that along with the individual identifier and the year and quarter of the payments, included the amount of earnings reported and the ID of the employer that reported those wages. The variables in this file are listed in Table A3-3. As for the two preceding files, the data cover the time period of the third quarter of 2012 through the fourth quarter of 2015.

Table A3-3. Iowa employee variables from program administrative data on UI wage record and payment systems for regular UI or STC in Iowa

Variable name	Variable label
ssn	Social Security number
yyyyq	Year and quarter
empid	Employer ID number
wages	Wages
treatment	Treatment, 1=yes, 0

Each of the three data files provided by IWD was quite complete and data validation checks identified few problems. We resolved a problem in the employer file in which two records in the third quarter of 2015 shared the same employer ID but were clearly for different firms. In the Iowa certifications file, a total of 175 records had to be dropped because the week ending date of the UI claim was not a Saturday, as is required. They were deleted after confirming that the preceding record for the same claim had the proper Saturday date. Of the 1.5 million records in the file, 29,531 records represented multiple records for the same individual, UI claim, and week of payment; but had differing payment amounts. An attempt was made to select the valid record by applying Iowa UI law. That is, when multiple records for an individual included reported earnings, the earnings disregard formula was applied and the record with the proper calculated benefit calculation was chosen. If no earnings were reported for the week claimed among multiple records and the sum of the benefit payments to the individual for the week equaled the claimant's entitled weekly benefit amount (WBA), then we assumed the individual received his/her full WBA and the observation was included. This process "resolved" all but 462 of the multiple records which were dropped from the certifications data set.

The quarterly wage record data included 19,310,456 records of which 855,406 were dropped because the reported earnings were zero. Another 903 records were dropped due to invalid social security numbers (the first three digits being zero). Finally, the data included 89,468 records that had multiple earnings amounts for the same individual, year and quarter and employer. We selected the record that had the highest reported earnings.

Oregon Program Administrative Data

Program data for Oregon were also drawn from three main administrative data systems. The UI tax file provided employer data, the UI payments (certifications) file provided employee data, and the UI wage record file in Oregon provided a link between employee earnings and employer identity. In addition, a list of employers that were originally included in the study sample but that were inactive as of the start of the demonstration was used to drop inactive employers from the data set constructed for the analysis. A summary of key raw and constructed variables for Oregon is given in Table A3-4.

Table A3-4. Oregon administrative data variables list by UI file source

Original file source	Variable name	Variable label
BIN assigned to treatment or control groups	bin	Business identity number
	multi_establ	Dummy for company operating multiple establishments in Oregon
	subgroup	Subgroup indicator dummy variable
	group	Group indicator dummy variable
	new_group	New group indicator dummy variable
Variables drawn from Oregon UI TAX file	naics	6 digit NAICS
	first_elig	Subject Year: Year first eligible for experience rating
	reimburs	Reimbursing Flag: Eligible for reimbursing status (yes or no)
	multi_firm	Multiple Worksite Flag(employer has more than one location)
	county_cd	County Code [corporate location, in cases of multiple worksites]
	zip	ZIP Code [corporate location, in cases of multiple worksites]
	inactive	Inactivity Date (19000101-20160331)
	tax_rate	Tax Rate: Employer UI tax rate applicable in the calendar year
	tax_year	Tax Year
	benefit_ratio	Employer UI benefit ratio determining the calendar year UI tax rate
	workers_unit	Workers in effected unit
	plan_init	Initiated plan (yes or no)
	plan_operate	Operating Plan (yes or no)
	benefit_chrg	Quarterly Benefit Charges
	payroll_tax	Payroll taxes paid total
	payroll_tot	Payrolls subject to taxation total
	month1	Month1 of calendar quarter
	month2	Month2 of calendar quarter
	month3	Month3 of calendar quarter
UI payments file	wsh_wkrs	Number of workers receiving Work Share benefits
	wsh_benefits	Amount of work share benefits paid in dollars
	fte_bin	Number of full time equivalent (FTE) weeks paid on work share
List of STC plan start/end dates	plan_start	STC plan start date
	plan_end	STC plan end date
	prior_plan	Employer had an STC plan before 2014Q4(since2010Q1)
Unemployment data from BLS/LAUS	county	FIPS code
	unemp	Unemp (mean)
	unemp_imput	County unempl rate w/weighted average unempl rate for multifirms
	unemp_new	Unemp (mean)
Variables constructed from raw administrative data	year	Year
	qtr	Quarter
	new_plan	Plan is active & no active plan in the prior quarter
	new_plan_start	Year and quarter a new plan starts, no active plan in the prior quarter
	plan_oper_n	Plan number
	plan_dur	Number of quarters (new) plan is observed to be active

Data checks on the administrative data initially provided in March 2016 revealed many inconsistencies. Ultimately, it was determined that there had been errors in the data pull, and Oregon staff provided three new administrative data sets in May 2016. Each of the three administrative data files required a significant amount of data scrubbing in order to prepare the final data set used in the analysis. Of the 669,900 observations in the tax file, 107 were duplicates (same values for all

variables) and were removed. In addition, 5.65 percent of observations had more than one record for same employer in one quarter. These records differed on payroll and employment levels. After confirming with Oregon on appropriate steps, we summed payroll and employment figures reported across an employer's records for the year-quarter and ended with 650,257 unique employer-year-quarter observations. This data set had information on 49,716 employers, some of which were not part of the study sample. We further deleted employers who were not in the treatment or control/comparison groups and who were no longer active as of the start of the demonstration.

The quarterly UI wage records file contains earnings received by individuals from each employer for which they worked during the quarter; individuals will have a separate record in the year-quarter for each employer. The UI wage records file included many duplicate records; after these were removed there were 24,942,248 unique observations in the file. We also removed records for the first quarter of 2016 (601,345 observations). The scrubbed data set had 24,340,903 observations, with 118,014 employers, of which 42,663 employers were in the study sample (19,027,569 observations).

The UI payments file provided to us contained 34,776,800 records, of which 7,490,045 were duplicates and were removed. An additional 20,086,935 observations that were outside the time frame used in the analysis (2012Q3 to 2014Q4) were removed as were 16 observations for which weekly earnings and weekly benefits were zero. The Oregon weekly payment file included two indicator variables for payment associated with an STC plan: "work share" and "work share adjustment." In cases where individuals had both payment types in the week, we summed the two amounts to obtain total STC benefit payments for the individual for the week, after consulting with Oregon staff.

Although Oregon was able to provide a variable indicating whether the payment was associated with an STC plan, Oregon was not able to provide the employer ID for the plan. This relationship was constructed for the purpose of our analysis by the link provided through the UI wage records between employers and employees. Specifically, we kept employees in the UI payments file who received STC benefits and employers in the UI wage file that, according to the tax file, operated an STC plan in a quarter. The linking process was done by finding the employer for whom the STC recipient worked that had an operating plan in the quarter the individual received benefits, or an employer that had an operating plan in the preceding quarter. Eleven individuals had two STC employers in the same quarter, and we assigned them to the employer with whom they had longer tenure. An STC employer was assigned to 2,193 out of 3,548 individuals with STC benefits between 2012Q3 and 2015Q4.

A3.2. Employer Survey

The surveys of employers provided data on employer awareness of STC, as well as experiences with STC, and costs associated with the program. The short-form survey (only three questions) captured

employer awareness of the state STC program, when the employer learned about the program and how it learned about the program.

The long-form survey was directed to employers who ever contacted the state agency about the state STC program, or had an STC plan (since 2008 in Iowa and 2010 in Oregon). The instrument consisted of 34 questions for Iowa employers and 33 questions for Oregon employers.

This long-form survey followed several possible paths depending on (1) whether the employer applied to establish an STC plan, (2) whether the application for a plan was approved, and (3) whether the approved plan was used. Therefore, the total number of questions answered by survey participants varied based on their experience with STC. This structure was used to focus on the issues relevant to the particular experiences of the employers. For example, only those who have used an STC plan can address questions about the administrative burden associated with the STC reporting requirements. Employers were asked about their reasons to apply to establish an STC plan, or why they did not apply. It also asked about the impact of the program on their business, the amount of time spent on administering the program, and background information about the business.

Separate survey instruments were developed for administration in Iowa and Oregon. The two surveys reflect variations in the state STC programs. Iowa operated under a provision of not fully charging employers for VSW benefits until February 21, 2015.

Electronic employer surveys using web-based technology were administered to 4,116 employers. We anticipate that many employers would find the online survey less burdensome because it offers easy access and submission, and allows for completing the survey at a time convenient to them and at their own pace. An online survey has the additional advantages of reducing the potential for errors as it will be designed to check for logical consistency across answers, accept only valid responses and automate skip patterns.

Because the short-form survey consists of only three questions and can fit on a single sheet of paper, we tested two different approaches to collecting those data. The first approach invited 70 percent of sampled employers to participate using the online survey, with letter follow-ups (where later reminder letters include a paper survey). The second approach sent the invitation letter (and no mention of online survey) with a paper survey to the other 30 percent of employers, followed by a reminder letter with a paper survey, then reminder letters with instructions for accessing the survey online (without a paper survey included). Results are presented later in this appendix.

One reason for testing these two approaches was that reliable email addresses for the sample were not available to send a direct link, so a letter needed to be mailed. Second, for such a short survey, an online instrument may or may not be the most efficient and effective means of reaching employers. Because the short-form survey is only three questions, it can fit on one sheet of paper

and be completed in one minute when received, then placed in a business reply envelope and mailed back. In contrast, with the online survey, the employer has to go to the web, type in the URL, enter username and passcode, and then answer the questions. It is possible that mailing a paper survey could produce a higher response rate than sending instructions for participating in an online survey.

To increase the response rates to the two surveys, telephone follow-up calls were administered in the third month to all sample members that did not respond. They were also given the option of answering the survey by telephone. Samples of the short-form and long-form surveys, along with invitation and reminder letters are provided at the end of this appendix. Most of the examples are for Iowa only because of the similarity for the two states.

Sampling Methodology for Employer Surveys

The sampling frames for the employer surveys were administrative data files provided by Iowa and Oregon shortly before the fielding of the employer surveys. These files were matched to the assignments of employers in the Iowa and Oregon STC experiments to define the major strata for the employer surveys. The universe for the long-form survey in each state consisted of the employers that had an STC plan in effect immediately prior to the start of the STC experiments plus other STC-eligible employers who requested information from their respective state UI agency about developing an STC plan either before or during the STC experiments. The universe for the short-form employer surveys were all employers eligible for the STC experiments, plus employers that were not eligible because they had an STC plan in effect immediately prior to the start of the STC experiments (meaning that all STC-eligible employers in the state were included). Employers that were no longer in business in each state were ineligible. The numbers of firms in the long-form universes were 165 and 828 for Iowa and Oregon, respectively. The short-form-survey universes contained 26,300 firms in Iowa and 43,722 firms in Oregon.

We invited all firms in each state's long-form universe to participate in the long-form survey because of the expected small sizes of the long-form universes. For collecting short-form data, we selected a two-stage stratified sample from each state's short-form universe. The first and second stages of sampling selected eligible firms and then associated establishments, respectively. The Iowa short-form universe contained two major strata: one for employers assigned to the treatment group of the RCT and the other for employers assigned to the RCT's control group. The Oregon short-form universe contained four major strata: treatment and control strata for the RCT and treatment and comparison strata for the QED. The purpose of the major strata was to create analysis domains for comparing the short-form responses by employers assigned to the experiments' treatment groups with those from employers assigned to the control groups. The experiments used blocking variables—including NAICS sector, workforce region, and employer's annual Unemployment Insurance benefit charges—to randomly assign employers to the treatment and control groups, so

the distributions of these variables were very similar within the RCT major strata in each state. The two QED major strata in Oregon provided geographical stratification.

Table A3-5 indicates the number of firms and establishments in the major strata for the short-form survey. Within the major strata in each state, we created substrata based on the firm's number of establishments. Tables A3-6 and A3-7 disaggregate Table A3-5 to the sub-stratum level for Iowa and Oregon, respectively. The first stage of sampling for the short-form survey selected firms. Those firms in the sub-stratum containing the largest employers with respect to number of establishments were selected with certainty, and proportional allocation was used to determine the number of employers to be selected with equal probability in the other sub-strata. To increase slightly the precision of resulting estimates, the firms in each stratum were sorted by number of employees and industry and then the firms were randomly sampled by using systematic sampling with a random start. Tables A3-5, A3-6, and A3-7 also indicate the number of sampled firms by stratum and sub-stratum.

The second stage of sampling for the short-form survey selected establishments associated with firms selected in the first-stage of sampling. For single-establishment firms, if the firm was selected in the first stage of sampling then the firm was also a selected establishment. If a single-establishment firm was in the long-form universe and it was also selected in the first-stage of sampling for the short-form survey, the firm was flagged as a duplicate sample unit and fielded only for the long-form survey (17 cases).

For multi-establishment firms selected in the first-stage of sampling, the second-stage of sampling selected two establishments with equal probability from a firm having more than one but less than 11 establishments, and it selected three establishments from firms that have 11 or more establishments. This was decreased by one if the firm selected for the short-form survey was also in the long-form universe. To increase slightly the precision of resulting estimates, the establishments associated with each selected firm were sorted by the establishment's ZIP Code and establishments were sampled by using systematic sampling with a random start.

Table A3-5. Number of firms and establishments by short-form survey major strata

State	Major Stratum		Number of firms		Number of establishments	
	Study	Assignment	Universe	Sample	Universe	Sample
Iowa	RCT	Treatment	13.134	675	22,893	835
	RCT	Control	13,166	675	22,612	846
	Total		26,300	1,350	45,505	1,681
Oregon	RCT	Treatment	9,945	286	12,080	325
	RCT	Control	9,938	285	13,063	357
	QED	Treatment	12,297	348	14,280	381
	QED	Comparison	11,542	348	14,067	396
Both	Total	Total	43,722	1,267	53,490	1,459

Table A3-6. Sub-stratum universe and sample sizes for Iowa

Substratum level	Major stratum		Sample size by substratum (based on number of establishments)				
	Study	Assignment	Single establishment	2-10	11-34	35+	Total
Universe employers	RCT	Treatment	11,145	1,779	183	27	13,134
	RCT	Control	11,281	1,675	173	37	13,166
	Total		22,426	3,454	356	64	26,300
Sampled employers	RCT	Treatment	551	88	9	27	675
	RCT	Control	549	81	8	37	675
	Total		1,100	169	17	64	1,350
Universe establishments	RCT	Treatment	11,145	6,419	3,195	2,134	22,893
	RCT	Control	11,281	5,946	3,078	2,307	22,612
	Total		22,426	12,365	6,273	4,441	45,505
Sampled establishments	RCT	Treatment	551	176	27	81	835
	RCT	Control	549	162	24	111	846
	Total		1,100	338	51	192	1,681

Table A3-7. Sub-stratum employer sample sizes for Oregon

Substratum level	Major stratum		Sample size by substratum (based on number of establishments)				
	Study	Assignment	Single establishment	2-10	11-24	25+	Total
Universe employers	RCT	Treatment	9,623	265	43	14	9,945
	RCT	Control	9,590	277	40	31	9,938
	QED	Treatment	11,981	267	38	11	12,297
	QED	Comparison	11,131	340	54	17	11,542
	Total		42,325	1,149	175	73	43,722
Sampled employers	RCT	Treatment	263	7	2	14	286
	RCT	Control	245	7	2	31	285
	QED	Treatment	328	7	2	11	348
	QED	Comparison	319	10	2	17	348
	Total		1,155	31	8	73	1,267
Universe establishments	RCT	Treatment	9,623	1,180	665	612	12,080
	RCT	Control	9,590	1,129	671	1,673	13,063
	QED	Treatment	11,981	1,227	583	489	14,280
	QED	Comparison	11,131	1,354	844	738	14,067
	Total		42,325	4,890	2,763	3,512	53,490
Sampled establishments	RCT	Treatment	263	14	6	42	325
	RCT	Control	245	14	6	92	357
	QED	Treatment	328	14	6	33	381
	QED	Comparison	319	20	6	51	396
	Total		1,155	62	24	218	1,459

Data Collection

Data collection started on February 29, 2016, and continued through June 3, 2016—a period of 14 weeks. Survey administration began with web and paper surveys, followed by computer assisted telephone interview (CATI) phone surveys to nonrespondents beginning on May 3, 2016.

Web Surveys. A secure website was developed for the web survey data collection. The short and long-form web surveys were programmed to be accessible from the same website. When sample members logged into the survey, their survey access codes were verified against a database in the Survey Management System (SMS) and they were sent to either the short or long-form survey. Two different survey URLs (ia.stcsurvey.org and or.stcsurvey.org) were created using branding and language from the states in order to make them recognizable to establishments. A total of 1,078 web surveys were completed. See Table A3-8.

Table A3-8. Number of completed employer surveys by mode

Web Survey Completes	Paper Survey Completes	CATI Completes	Total Completes
1,078	709	920	2,707
39.8%	26.2%	34.0%	100%

Paper Surveys. The paper survey was only designed for the short-form survey. It included three questions and was printed on a 4 page black and white booklet that was mailed to sampled establishments. Logos from Iowa Workforce Development and Oregon Employment Department were displayed on the cover. The mailing included pre-paid business reply envelope to facilitate its return to Westat. The returned paper surveys first were receipted into the SMS and later keyed into the SMS by using a two-pass verification process. Westat received 709 completed paper surveys throughout the data collection.

CATI. The short and long-form web surveys were used as the basis to develop the followup CATI survey. Additional transitional and instructional text was added to the CATI survey to work as a telephone interview, however, the content of the questions in the CATI survey remained the same to facilitate comparison against the web and mail responses. Telephone interviewing began for nonrespondents on May 3, 2016 and ended on June 3, 2016. A total of 9,300 calls were made and 920 CATI interviews were completed during this period.

Communications. Communications with sampled establishments began with survey invitation letters to the web survey or paper surveys sent via first-class postal mail. The survey invitation letter described the purpose of the survey, requested participation in the survey, how to contact the Survey Help Desk, and included a list of frequently asked questions. The communications used letterhead from Iowa Workforce Development and Oregon Employment Department, and signatures from state officials from those agencies. Those invited to take the web survey received invitation letters that included the survey URL and a unique survey access code to allow each sample member to access the web survey. Establishments which had been sent the paper survey received invitation

letters requesting they complete the questionnaire and return it in the included postage-paid business reply envelope. To encourage survey response, Westat sent three additional reminder communications to survey nonrespondents. The second communication was sent three weeks following the invitation and the remaining reminders were sent two weeks apart. See Table A3-9.

Table A3-9. Schedule and counts of the invitation and reminder communications sent to employer for the long-form and short-form surveys

Letter and data sent	Iowa			Oregon		
	Long-Form Web Survey	Short-Form Web Survey	Short-Form Paper Survey	Long-Form Web Survey	Short-Form Web Survey	Short-Form Paper Survey
Invitation Letter *Sent 2/29/2016*	165	1,177	502	828	1,012	432
Reminder Letter *Sent 3/21/2016*	124	939	427	737	871	355
Second Reminder Letter *Sent 4/4/2016*	108	880	365	630	791	319
Third Reminder Letter *Sent 4/18/2016*	17	838	290	534	754	261
Third Reminder Email Sent 4/18/2016	79	N/A	N/A	26	N/A	N/A

There were three different types of communications sent. The first was for establishments selected for the long-form web survey who were sent three postal invitation/reminder letters followed by a fourth communication sent via email or mail. Establishments with no email address on record were sent a postal reminder instead. The second type of communication was for short-form web survey establishments, which were sent the invitation and reminder letters with instructions to access the web survey. Then they were converted to paper surveys for the second and third reminders. The third type of communication was for establishments selected for the short-form paper survey. They were sent the invitation and reminder letters with paper surveys. Then they were also converted to the web survey reminders for the second and third reminders.

Updating Contact Information. Two weeks prior to mailing the invitation letters, Westat processed the addresses through the National Change of Address (NCOA) system to identify updated and bad mailing addresses. NCOA processing identifies entities that have submitted address changes within the past 12 months and also verifies that the mailing address is valid, with a matching city and ZIP Code. This process identified 169 updated street addresses, 114 addresses that were flagged as possible bad addresses, 40 that gave a warning of multiple matches because of missing secondary address (i.e., suite), and 3 that were missing city, state, or ZIP Code. Westat reviewed and corrected addresses that were bad, received warnings, or were missing required information.

After mailing the invitation letters, Westat received 279 letters with bad addresses returned by the postmaster as non-deliverable (PND) during the following three weeks. The PNDs were receipted into the SMS and were further examined to determine if the establishment had a new address, the

name had changed, or if the establishment was out of business. Of the 279 PNDs received, Westat was able to update 226 addresses so that future postal communications could be mailed.

All of the Oregon establishments selected for the long-form survey were missing email addresses. A few weeks before the third email invitation was sent, Westat identified the nonrespondents and requested email addresses from the Oregon Employment Department. They were able to provide only 26 email addresses.

Westat traced phone numbers for nonrespondents 2 weeks before beginning the CATI survey. Staff used information from a Dun and Bradstreet (D&B) database to look up phone numbers. D&B is an organization that specializes in providing commercial data to businesses and has information on millions of businesses. In addition, staff manually searched the Internet for phone numbers. The purpose of this was to find direct numbers to human resource managers, however, in many instances only generic phone numbers were found. Westat retained up to four phone numbers per sampled establishment. The tracing took approximately two weeks and resulted in 1,556 phone numbers being added. At least one phone number was found for every establishment traced except those establishments no longer in business.

Survey Help Desk. During the field period, Westat maintained a toll-free telephone number and a project email box that sampled establishments could use to request technical assistance in accessing the survey or to ask general questions about the survey.

Toll-Free Hotline. The hotline number rang directly at the Survey Help Desk and was answered by a representative during weekday business hours of 10:00 a.m. to 7:00 p.m., EDT. Voicemail was available to anyone calling after business hours or on weekends, and messages were answered within 1 business day.

During the field period, 173 phone calls or voice messages were received. Topics of the calls included background and procedure questions about the study, technical problems, uncertainty about how to answer a question, updates to business names, addresses or contacts, refusal to participate, and reports that the establishment was no longer in business. The Survey Help Desk assisted all callers and, when appropriate, provided them with contact information for the state offices.

Emails. Help Center staff received 37 emails in 14 weeks. Most individuals who responded via email mentioned technical problems with accessing the web survey. Others provided updated information on the establishment sampled. In a few instances individuals notified help center staff that the establishment was no longer in business.

Dispositions. At the end of data collection, Westat scrubbed the data and assigned final disposition codes to each establishment in the sample, indicating eligibility or ineligibility for the survey,

completes, partial completes, refusals, and nonresponse (Table A3-10). The final data set does not include any data from surveys designated as partial completes.

Table A3-10. Data collection disposition codes

Disposition	Description	Total
Completed survey	Answered enough of the key items in order to be a complete	2,707
Nonresponse	Nonresponse, reason unknown	1,151
Company out of business	It was discovered that the establishment went out of business before fielding the survey	95
Final refusal	Explicitly expressed refusal to participate	71
Unavailable during field period	HR representative or other designated employee was not available during fielding period.	57
Partial completed survey	Not enough key items were answered to be considered a complete	25
Ineligible	Establishment was not eligible to participate	5
Incapacitated/Sick	Business was operated by single person, who was sick during the fielding period	2
Deceased	Business was operated by single person, who passed away	2
Duplicate	The same establishment was sampled twice	1
Total		4,116

Instruments. To maximize response rates to the employer surveys, two separate employer instruments were used to cover two different kinds of employers: those who ever inquired about the state STC program and all other STC-eligible employers.

The short-form survey consisted of only three questions pertaining to awareness of the STC program and was addressed to a random sample of the treatment and control employers of the STC demonstration project. This survey was expected to take only one to two minutes to complete. The long-form survey was expected to take 12 minutes to complete. The long-form survey was addressed to the universe of employers who contacted the state agency about the state STC program (between 2008 and September 2015 in Iowa and between 2010 and September 2015 in Oregon). Most of these employers have established a relationship with the state STC agency and are expected to be willing to respond to the survey because of that relationship.

Response rates. Tables A3-11 through A3-14 present the weighted response rates for the employer surveys. The response rates are calculated following AAPOR Response Rate 3 formula.[11]

Table A3-11. Weighted response rates (RR3) by state and type of survey

Survey instrument type	Iowa	Oregon
Short-form establishment	67.5	66.3
Short-form firm	76.6	70.2
Long-form firm	74.4	67.4

[11] Note that a firm may consist of one or more establishments.

Table A3-12. Weighted response rates (RR3) in Iowa by assignment group and type of survey

Survey instrument type	Iowa		
	Treatment	Control	Other
Short-form establishment	66.5	68.5	Na
Short-form firm	76.5	76.8	Na
Long-form firm	75.4	74.8	73.6

Table A3-13. Weighted response rates (RR3) in Oregon by assignment group, study, and type of survey

Survey instrument type	Oregon					
	Treatment	Control/ Comparison	Other	RCT Portland	QED Treatment	QED Control/ Comparison
Short-form establishment	65.0	67.5	na	61.8	67.8	73.4
Short-form firm	68.6	71.8	Na	67.5	70.2	74.8
Long-form firm	67.8	67.8	66.1	66.4	68.7	70.5

Table A3-14. Weighted response rates (RR3) by state, multi-establishment status, and type of survey

Survey instrument type	Iowa			Oregon		
	Single establishment	Multi-establishment	Not identified	Single establishment	Multi-establishment	Not identified
Short-form establishment	76.1	59.2	Na	69.8	52.4	Na
Short-form firm	76.1	79.9	Na	69.8	82.4	Na
Long-form firm	72.7	87.0	71.7	70.7	56.1	49.7

Data Weighting

The analysis of survey data from complex sample designs requires the use of weights to (1) compensate for variable sample member probabilities of selection, (2) adjust for differential sample member response rates, and (3) improve the precision of survey-based estimates (Skinner et al, 1989)[12]. To develop weights for the employer surveys, we proceeded using the following steps:

- First, base weights equal to the reciprocal of the probability of selection were calculated for each sampled firm and sampled establishment.
- Then, the final disposition codes were used to create a disposition status variable. This variable was used to control the subsequent weighting steps.

[12] Skinner, C., Holt, D., & Smith, T. (Eds). *Analysis of complex surveys*. New York: Wiley.

- Next, the base weights were adjusted for nonresponse by creating weighting classes using variables with known values for both respondents and nonrespondents.

- Finally, the nonresponse adjusted weights were raked to population counts computed from the sampling frame files from which the employer surveys were selected.

Calculation of Base Weights. The base weight is the reciprocal of the probability of selection. Because all firms in the long-form universe were invited to participate, the base weight for each firm sent the long-form survey equals 1. For the short-form survey, we computed two types of weights, for weighting firm-level and establishment-level data. These two types of weights are associated with the sampling stages for the short-form survey: first firms were selected and then establishments. The base weight for the firm-level weight for the short-form survey is the reciprocal if the first-stage sampling probability. The base weight for the establishment-level weight for the short form survey is the reciprocal of the product of the first- and second-stage sampling probabilities.

Creation of Disposition-Status Variable. Each firm invited to participate in the long-form survey and each establishment sampled for the short-form survey was assigned a final disposition code, which was used in the calculation of response rates. The final disposition codes were also used in weighting because the associated calculations need to distinguish between different types of firms and establishments with respect to their eligibility and survey outcomes. Table A3-15 defines four disposition classes, identified by the variable STATUS, that were relevant to the weighting calculations: eligible respondent (STATUS=1), eligible nonrespondent (STATUS=2), known ineligible (STATUS=3), and cases of unknown eligibility (STATUS=4). Table A3-16 contains counts of the number of cases by state, survey, and data type in each disposition class. (Note: Each short-form case contributes to both firm-level and establishment-level counts.)

Table A3-15. Definition of disposition classes used for weighting procedures

STATUS = Disposition class		Survey disposition codes
Value	Description	
1	Eligible respondent	Completed survey
2	Eligible nonrespondent	Partial complete Final refusal Incapacitated/Sick Unavailable during fielding period
3	Known ineligible	Ineligible Company out of business Deceased
4	Unknown eligibility	Nonresponse

Table A3-16. Distribution of sampled cases by state, survey type and disposition class

Disposition class		Iowa			Oregon		
			Short form			Short form	
Value	Description	Long form	Firms	Units	Long form	Firms	Units
1	Eligible respondent	120	983	1,124	521	878	941
2	Eligible nonrespondent	8	50	59	42	57	61
3	Known ineligible	3	49	60	40	18	20
4	Unknown eligibility	34	268	436	225	314	437
Total		165	1,350	1,681	828	1,267	1,459

Nonresponse Adjustments. In an ideal survey, all elements in the population are eligible to be selected into the sample, and all selected elements participate in the survey. In practice, these conditions only rarely, if ever, occur. Some sampled elements do not respond (unit nonresponse); some sampled units are discovered to be ineligible; and the eligibility status of some units cannot be determined. We used nonresponse weight adjustments to deal with unknown eligibility and unit nonresponse.

We computed three sets of adjusted base weights corresponding to the three types of survey data: firm-level data from the long-form survey, firm-level data from the short-form survey, and establishment-level data from the short-form survey. The sample files for the three types of survey data were merged with firm-level administrative data to create nonresponse adjustment cells, defined by the firm's number of employees and number of establishments. Table A3-17 describes the nonresponse adjustment cells. One of the variables used to create the cells for the long-form survey was whether a firm was a single-establishment firm, a multi-establishment firm, or of unknown type because the firm was not present in the administrative data. Except for this particular cell variable for the long-form survey, all the other cell variables were converted to categorical variables by determining the quartiles for those employers linked to the sample files.

Table A3-17. Variables used to define nonresponse adjustment cells

State	Survey instrument type	Description	Levels
Iowa	Long form	Firm employment (e)	e<6, 6≤e<16, 16≤e<43, 43+
		Firm type	Single establishment, Multi-establishment, Unknown
	Short-form	Firm employment (e)	e<6, 6≤e<11, 11≤e<23, 23+
		Firm number of units (n)	n=1, 2≤n<11, 11≤n<35, 35+
Oregon	Long form	Firm employment (e)	e<6, 6≤e<16, 16≤e<43, 43+
		Firm type	Single establishment, Multi-establishment
	Short-form	Firm employment (e)	e<5, 5≤e<9, 9≤e<19, 19+
		Firm number of units (n)	n=1, 2≤n<11, 11≤n<25, 25+

After the nonresponse cells were defined, the number of survey respondents in each cell was determined. If a cell contained fewer than 20 respondents, it was collapsed with a cell that had a similar response rate. The following adjustment factor was then computed for each (collapsed) response adjustment cell:

$$f = \frac{S_1+S_2+S_3+S_4}{S_1+S_3}$$

where S_1, S_2, S_3, and S_4 are the sum of the base weights of the cases with STATUS=1, 2, 3, and 4, respectively. Preliminary adjusted weights were then computed by setting the adjusted weight of the STATUS=4 cases to zero and by multiplying the base weights of the STATUS=1, 2, and 3 cases by *f*. This distributed the base weights of the cases of unknown eligibility to cases that are known to be eligible or ineligible.

Next, the following additional adjustment factor was computed for each (collapsed) response adjustment cell:

$$f' = \frac{S'_1+S'_2}{S'_1}$$

where S'_1 and S'_2 are the sum of the preliminary adjusted weights of the cases with STATUS=1 and 2, respectively. The final adjusted weights are equal to zero for both STATUS=2 and 4 cases, are equal to the preliminary adjusted weight for the STATUS=3 cases, and are equal to product of the preliminary adjusted weight and *f'* for the STATUS=1 cases. This distributed the preliminary adjusted weights for the eligible non-respondents to the eligible respondents.

Raking. The nonresponse-adjusted weights were then modified through a process called raking (see Section 14.2 of Valliant, et al; (2013))[13]. The purpose of raking is to use known information about the survey population to increase the precision of population estimates. This information consists of totals for different levels of available variables.

During the raking process, sampled employers are first categorized into the cells of a table by two or more variables—called *raking dimensions*. The goal of raking is to adjust the weights so that they add up to the known totals—called *control totals*—for the different levels within each raking dimension. Raking proceeds one dimension at a time, with the weights being proportionately adjusted to the control totals for the levels of dimension being raked. After all dimensions are adjusted, the process is repeated until the sum of the weights for all levels of the raking dimensions are equal to the corresponding control totals (at least within a specified tolerance).

[13] Valliant, R., Dever, J., and Kreuter, F. (2013). *Practical Tools for Designing and Weighting Survey Samples*, Springer: New York.

Control totals were computed from information on the sampling frame from which the employer surveys were selected. Table A3-18 lists by survey the raking dimensions and associated control totals.

Table A3-18. Raking dimensions and control totals

State	Variable	Levels of dimensions raked	Control totals		
				Short form	
			Long form	Firms	Establishments
Iowa	Experiment group	Treatment	49	13,134	22,893
		Control	44	13,166	22,612
		Other	72	NA	NA
		Total	165	26,300	45,505
	Type of firm	Single-unit	95	22,426	22,426
		Multi-unit	23	3,874	23,079
		Unknown	46	NA	NA
		Total	165	26,300	45,505
Oregon	Experiment group	RCT-Treatment	195	9,945	12,080
		RCT-Control	143	9,938	13,063
		QED-Treatment	148	12,297	14,280
		RCT-Control	120	11,542	14,067
		Other	222	NA	NA
		Total	828	43,722	53,490
	Type of firm	Single-unit	667	42,325	42,325
		Multi-unit	69	1,397	11,165
		Unknown	92	NA	NA
		Total	828	43,722	53,490

Nonresponse Bias Analysis

A nonresponse bias analysis investigates the potential for bias in survey estimates due to different response rates for different types of employers. When data are available for both respondents and non-respondents, one can estimate expected nonresponse bias in estimates computed from those data. Such data, however, will usually be for variables present on the sampling frame, not for questionnaire data obtained from the survey, which does not provide usable data for nonrespondents. Nevertheless, by estimating the nonresponse bias for variables on the sampling frame, one can obtain an indication of the relative magnitude of the nonresponse bias present in those survey items that are correlated with variables on the sampling frame.

For Iowa, we estimated the relative bias due to nonresponse in the prevalence estimates for two categorical sampling-frame variables: firm type (single-establishment firm or multi-establishment firm) and firm employment size category (see firm-size categories in Tables A3-19 and A3-21). For Oregon, we estimated the relative bias due to nonresponse in the prevalence estimates for three categorical sampling-frame variables: firm type (single-establishment firm or multi-establishment

firm), location (Portland, QED treatment counties, and QED comparison counties), and firm employment size category (see firm-size categories in Tables A3-20 and A3-22).

The sources of the variables for firm type, firm employment size category, and location were data that Iowa and Oregon had provided to Westat and Upjohn in 2014 for the assignment of firms to treatment and control groups for the RCT in Iowa and to the RCT or QED in Oregon. The data sources for names and the contact information for those firms and establishments invited to participate in the employer surveys, on the other hand, were data provided to Westat by Iowa and Oregon a few months prior to the fielding of the employer surveys. The firms that were invited to participate in the employer surveys included firms that had been randomly assigned to the treatment or control groups, but also included some that had not. As a result, the data needed for nonresponse bias analysis (i.e., firm type, employment size category, and location) was available for all of the firms assigned to treatment or control and for some, but not all, of the firms that had not been assigned to an experimental group. We dropped from the nonresponse bias analysis, those firms and associated establishments that had been invited to participate in the employer survey but were not present in the 2014 data used for assigning firms to treatment and control groups.

Tables A3-19 and A3-20 contain prevalence estimates computed from the sampling-frame data for the respondents to the long-form surveys in Iowa and Oregon, respectively. These estimates are weighted means. One version of these estimates uses the base weights, whereas a second version of these estimates uses the final weights. Next to the prevalence estimates computed from the respondents are unbiased estimates of population prevalence computed from the respondents plus non-respondents, using the base weights. The computed relative biases are the result of subtracting the population prevalence from the respondent-based prevalence estimates and then dividing by the population prevalence. With one exception, all of the estimated relative biases computed using the final weights are smaller in absolute value than the estimated relative biases using the base weights. This indicates that the adjustment of the weights for nonresponse is reducing non-response bias. The one exception is in Table A3-19 (for Iowa), in which the estimated relative bias for the prevalence of firms with more than 5 employees but fewer than 16 employees is 0.1495 when using base weights but is 0.1685 when using final weights.

Across both Tables A3-19 and A3-20, the estimated relative bias computed using the final weights is less than 0.05 in absolute value, except for the prevalence estimates for the two smallest firm employment size categories in Iowa. For Iowa firms with fewer than six employees, the estimated prevalence computed from the survey respondents using final weights is 1.6 percent, whereas the corresponding estimated population value is 4.3 percent. For Iowa firms with more than 5 employees but fewer than 16 employees, the estimated prevalence computed from the survey respondents using final weights is 16.3 percent, whereas the corresponding estimated population value is 14.0 percent.

The two rightmost columns of Tables A3-19 and A3-20 contain the p-values for a test of association (Rao-Scott-adjusted chi-square test) of estimates computed from only the survey respondents with unbiased estimates computed from respondents plus nonrespondents. The magnitude of these p-values indicates that the degree of association of unbiased estimates computed from only the survey respondents using final weights is slightly larger than that for unbiased estimates computed from only survey respondents using base weights.

Table A3-19. Comparison of weighted estimates computed from Iowa respondents to long-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (%)		Prevalence in population (%)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Firm type	Single estab	89.6	90.4	90.3	-0.0077	0.0011	0.84	0.98
	Multi-estab	10.4	9.6	9.7	0.0716	-0.0099		
Firm employment (e)	e < 6	1.5	1.6	4.3	-0.6403	-0.6198	0.69	0.72
	6 <= e < 16	16.1	16.3	14.0	0.1495	0.1685		
	16 <= e < 43	26.6	27.2	28.0	-0.0493	-0.0261		
	e >=43	55.8	54.8	53.8	0.0380	0.0194		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Table A3-20. Comparison of weighted estimates computed from Oregon respondents to long-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (%)		Prevalence in population (%)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Location	Portland	55.3	55.8	55.8	-0.0086	-0.0001	0.98	0.99
	QED/Trmt	24.6	24.4	24.4	0.0057	0.0001		
	QED/Control	20.1	19.8	19.8	0.0171	0.0002		
Firm type	Single estab	93.3	92.7	92.2	0.0112	0.0045	0.47	0.78
	Multi-estab	6.7	7.3	7.8	-0.1327	-0.0533		
Firm employment (e)	e < 6	14.7	15.4	15.7	-0.0600	-0.0207	0.81	0.96
	6 <= e < 16	32.0	31.8	31.5	0.0151	0.0089		
	16 <= e < 43	29.5	28.7	27.7	0.0625	0.0348		
	e >=43	23.8	24.2	25.1	-0.0505	-0.0366		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Tables A3-21 and A3-22 are the same as Tables A3-19 and A3-20, except they are for the establishment-level responses to the short-form surveys in Iowa and Oregon, respectively. Similar to Tables A3-19 and A3-20, the estimated relative biases computed using final weights are smaller in absolute value than the estimated relative biases using base weights, except for the two smallest firm employment size categories in Iowa. Again, this indicates that the adjustment of the weights for nonresponse is reducing non-response bias. Across both Tables A3-21 and A3-22, the estimated relative biases computed using the final weights all are less than 0.05 in absolute value. Similar to

Tables A3-19 and A3-20, the p-values in the two rightmost columns indicate the degree of association of the unbiased estimates computed from only the respondents with the estimates computed from respondents plus nonrespondents. The magnitude of these p-values indicate that the degree of association of unbiased estimates computed from only the survey respondents using final weights is larger than that for unbiased estimates computed from only survey respondents using base weights. For the Iowa prevalence estimates for firm type, the p-value for the association test is p=0.10 for the estimates computed from only the respondents using base weights and is p=0.98 for the estimates computed from only the respondents using final weights. This indicates that these estimates computed from only respondents using final weights are much closer to the population values than are corresponding estimates computed from only the respondents using base weights.

Table A3-21. Comparison of weighted estimates computed from unit-level responses to Iowa short-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (% of all units)		Prevalence in population (% of all units)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Firm type	Single estab	51.8	49.3	49.24	0.0518	0.0009	0.10	0.98
	Multi-estab	48.2	50.7	50.76	-0.0502	-0.0008		
Firm employment (e)	e < 6	23.5	24.1	23.32	0.0094	0.0317	0.99	0.98
	6 ≤ e < 11	16.8	16.5	17.34	-0.0281	-0.0455		
	11 ≤ e < 23	25.7	25.5	25.48	0.0076	0.0017		
	e >=23	33.9	33.9	33.86	0.0022	0.0002		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Table A3-22. Comparison of weighted estimates computed from unit-level responses to Oregon short-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (% of all units)		Prevalence in population (% of all units)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Location	Portland	46.3	47.0	48.6	-0.0462	-0.0320	<0.001	0.04
	QED/Trmt	26.6	26.7	25.8	0.0295	0.0347		
	QED/Control	27.1	26.3	25.7	0.0573	0.0253		
Firm type	Single estab	81.1	79.1	80.0	0.0144	-0.0107	0.25	0.43
	Multi-estab	18.9	20.9	20.0	-0.0577	0.0426		
Firm employment (e)	e < 5	22.5	22.7	22.6	-0.0042	0.0041	0.71	0.87
	5 ≤ e < 9	21.7	22.1	23.2	-0.0643	-0.0486		
	9 ≤ e < 19	23.2	23.0	23.2	0.0006	-0.0054		
	e >=19	32.6	32.2	31.1	0.0506	0.0373		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Tables A3-23 and A3-24 contain prevalence estimates computed from the sampling-frame data for the firm-level responses to the short-form surveys in Iowa and Oregon, respectively. The estimated relative biases computed using final weights are smaller in absolute value than the estimated relative biases using base weights for all of the estimates in Tables A3-23 and A3-24. This indicates that the adjustment of the weights for nonresponse is reducing non-response bias. Across the two tables, the estimated relative bias computed using the final weights are all less than 0.02 in absolute value. As in the other tables, the two rightmost columns indicate the degree of association of the unbiased estimates computed from only the respondents with the estimates computed from respondents plus nonrespondents. The magnitude of these p-values indicate that the degree of association of unbiased estimates computed from only the survey respondents using final weights is larger than that for unbiased estimates computed from only the survey respondents using base weights. These p-values indicate that for the Iowa and Oregon prevalence estimates for firm type and also for the Oregon prevalence estimates for location the estimates computed only from respondents using final weights are much closer to the population values than are the estimates computed from only respondents using base weights.

Table A3-23. Comparison of weighted estimates computed from firm-level responses to Iowa short-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (% of all firms)		Prevalence in population (% of all firms)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Firm type	Single estab	85.01	85.27	85.27	-0.0031	0.0000	<.0001	0.9990
	Multi-estab	14.99	14.73	14.73	0.0178	0.0000		
Firm employment (e)	e < 6	26.08	26.93	27.03	-0.0350	-0.0039	0.8772	0.9995
	6 <= e <16	24.26	24.58	24.47	-0.0085	0.0044		
	16 <= e <43	25.04	24.63	24.71	0.0135	-0.0032		
	e >= 43	24.61	23.87	23.78	0.0348	0.0036		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Tables A3-24. Comparison of weighted estimates computed from firm-level responses to Oregon short-form survey to corresponding population values

Characteristic	Value	Weighted prevalence among respondents (% of all firms)		Prevalence in population (% of all firms)	Relative bias		P-values	
		Base weights	Final weights		Base weights	Final weights	Base weights	Final weights
Location	Portland	44.8	45.5	45.5	-0.0157	-0.0001	<.0001	0.99
	QED/Trmt	28.1	28.1	28.1	-0.0002	-0.0002		
	QED/Control	27.1	26.4	26.4	0.0270	0.0000		
Firm type	Single estab	96.6	96.8	96.8	-0.0023	0.0000	<.0001	0.63
	Multi-estab	3.4	3.2	3.2	0.0700	-0.0015		
Firm employment (e)	e < 6	26.1	26.8	26.9	-0.0274	-0.0035	0.58	0.99
	6 <= e <16	25.4	26.4	26.6	-0.0468	-0.0091		
	16 <= e <43	24.2	24.1	24.1	0.0063	-0.0007		
	e >= 43	24.3	22.8	22.4	0.0816	0.0157		

P-values are for test of association between estimates computed from base weights (or from final weights) and population values, using Rao-Scott adjusted chi-square test.

Test of Paper and Web Administration of the Short-Form Survey

The results of the experiment of "online first" versus "paper first" was intended to provide DOL with advice for conducting future short surveys of employers. The a priori expectation was that employers are more likely to complete an online survey than a paper survey. If there is a statistically significant difference in the rate of submission of employers, then DOL will have evidence for future short surveys of employers as to the method that provides a higher rate of submission (when employer email addresses are not available or reliable).

The results of the test would also impact the conduct of the short-form survey. If the submission rate after the first 2 weeks for "online first" was significantly higher than for "paper first," then the offer of an online-option would be provided by the third week of the survey rather than waiting to the planned fifth week. Alternatively, if the submission rate for "paper first" was significantly greater, then the paper option would be offered earlier than the planned seventh week of the survey (i.e., included in the reminder letter). If there was no significant difference in submission rates, no changes would be made to survey procedures, and overall submission rates of online and paper would be compared at the conclusion of the study.

Table A3-25 provides the cumulative number of short-form surveys submitted on a weekly basis for the initial mode prescribed ("paper first" or "web first") and the type of mode used for submission. For example, the first column indicates the number of "paper first" employers that submitted the survey using the paper survey. Note that only 30 percent of the sample received "paper first," so the numbers are consistently smaller than for "web first."

Tables A3-25. Cumulative number of short-form surveys submitted, by initial mode and type of mode used in submission

Date	Paper by paper	Paper by web	Paper by CATI	Web by web	Web by paper	Web by CATI	Total
March 7, 2016	0	0	0	162	0	0	162
March 14, 2016	110	0	0	279	0	0	389
March 21, 2016	189	0	0	323	0	0	512
March 28, 2016	226	0	0	467	0	0	693
April 4, 2016	276	0	0	499	0	0	775
April 11, 2016	323	8	0	515	0	0	846
April 18, 2016	341	19	0	525	73	0	958
April 25, 2016	351	39	0	529	190	0	1,109
May 2, 2016	357	47	0	534	247	0	1,185
May 9, 2016	358	49	0	535	277	11	1,230
May 16, 2016	364	51	5	538	343	152	1,453
May 23, 2016	365	51	94	539	350	300	1,699
May 27, 2016	366	51	158	540	356	419	1,890
June 6, 2016	366	51	201	542	357	519	2,036

Table A3-26 shows the percentages of short-form surveys submitted by the different modes. After 2 weeks, the submittal rate was 11.8 percent for paper by paper and 12.7 percent for web by web. However, by March 21, the submittal rates were 20.2 percent for paper by paper and 14.8 percent for web by web.

Table A3-26. Cumulative percentage of short-form surveys submitted, by initial mode and type of mode used in submission

Date	Paper by paper	Paper by web	Paper by CATI	Paper total	Web by web	Web by paper	Web by CATI	Web total
March 7, 2016	0.0	0.0	0.0	0.0	7.4	0.0	0.0	7.4
March 14, 2016	11.8	0.0	0.0	11.8	12.7	0.0	0.0	12.7
March 21, 2016	20.2	0.0	0.0	20.2	14.8	0.0	0.0	14.8
March 28, 2016	24.2	0.0	0.0	24.2	21.3	0.0	0.0	21.3
April 4, 2016	29.5	0.0	0.0	29.5	22.8	0.0	0.0	22.8
April 11, 2016	34.5	0.9	0.0	35.4	23.5	0.0	0.0	23.5
April 18, 2016	36.5	2.0	0.0	38.5	24.0	3.3	0.0	27.3
April 25, 2016	37.5	4.2	0.0	41.7	24.2	8.7	0.0	32.9
May 2, 2016	38.2	5.0	0.0	43.2	24.4	11.3	0.0	35.7
May 9, 2016	38.3	5.2	0.0	43.5	24.4	12.7	0.5	37.6
May 16, 2016	38.9	5.5	0.5	44.9	24.6	15.7	6.9	47.2
May 23, 2016	39.0	5.5	10.1	54.6	24.6	16.0	13.7	54.3
May 27, 2016	39.1	5.5	16.9	61.5	24.7	16.3	19.1	60.1
June 6, 2016	39.1	5.5	21.5	66.1	24.8	16.3	23.7	64.8

The reminder letter sent on April 4 (fifth week) offered a web option to the "paper first" employers and a paper option for the "web first" employers. On April 8, we observed the first of the "paper first" employers using the web option. On April 15, we observed the first of the "web first" employers using the paper option. By May 2, 5.0 percent of "paper first" employers used the web option and 11.3 percent of the "web first" employers used the paper option.

By the end of the survey, 39.1 percent of "paper first" employers submitted the survey using paper, compared to 24.8 percent of "web first" employers submitting the survey using the web. In addition, only 5.5 percent of "paper first" employers submitted the survey using the web option. In contrast, 16.3 percent of "web first" employers submitted the survey using the paper option (a higher rate of cross-over to paper than to web). The use of the CATI follow-up beginning in May 2016 helped increase submission rates for both groups by nearly the same percentages (21.5% for "paper first," and 23.7% for "web first" employers) by the end of the survey (June3, 2016). Among the short-form establishment respondents included in our analyses, 36 percent in Iowa and 35 percent in Oregon completed using paper compared to 30 percent in Iowa and 28 percent in Oregon that completed using the web (34% in Iowa and 37% in Oregon completed by telephone). In summary, the results indicate that employers were more likely to submit via paper than web. However, with added CATI followup, the percentage of original paper employers and original web employers that submitted surveys finished about the same at around 65 to 66 percent.

A3.3 Semi-structured Interviews With State Administrators and Employers

Selection of State Agency Officials and of Employers for the Implementation Study

In-depth interviews were conducted with state agency officials and employers. Copies of the interview guides are provided at the end of this appendix. In Iowa, 12 baseline interviews and 12 followup interviews were conducted with state agency officials, but only two individuals were present for both baseline and followup interviews because of agency turnover or reassignments. In Oregon, 18 baseline and 21 followup interviews were conducted with state agency officials, with 15 individuals present at both baseline and followup interviews. Tables A3-27 and A3-28 list the job titles for the individuals interviewed. Bold text indicates the same person was interviewed at baseline and followup.

Table A3-27. Iowa Workforce Development staff interviews*

BASELINE	FOLLOW-UP
Senior Leadership for STC	
Chief Operating Officer Senior Legal Council	Division Administrator
Management & Operations for STC	
Program Manager—Voluntary Shared Work Coordinator, UI Division-outgoing **Regional Research Bureau Actuary** Program Manager—Voluntary Shared Work Coordinator, UI Division—incoming Investigator—Workforce Advisor-outgoing	**Program Manager—Voluntary Shared Work Coordinator, UI Division** **Regional Research Bureau Actuary, Marketing Information Division** Program Manager—Voluntary Shared Work Coordinator, UI Division Workforce Advisor—Processing STC Workforce Advisor—Processing STC
Technical & Expert Support for STC	
Chief Information Officer—IT Director Information Technology Officer Communications Director Communications: Marketing, Web Content Communications, Marketing Strategies, Publications, Regional Coordination Business Services, Wagner-Peyser Program Coordinator	Interim Chief Information Officer IT Specialist UI Benefits and Mainframe IT Specialist -UI Benefits and Mainframe IT Specialist 4- My Iowa UI Communications Director Business Services, Wagner-Peyser Program Coordinator

* Bold indicates the same person was interviewed at baseline and follow-up.

Table A3-28. Oregon Employment Department staff interviews*

Baseline	Follow-up
Senior Leadership for STC	
Assistant Director, UI **Deputy Administrator, UI**	**Assistant Director, UI** **Deputy Administrator, UI**
Management & Operations for STC	
Project Manager—STC Grant **Manager, Records & Redetermination; incoming** **Coordinator STC Study Project** **Manager, Overpayment Unit (UI)** **Compliance Specialist** **Compliance Specialist STC operations – ongoing** **Operation & Policy Analyst**	**Project Manager—STC Grant** **Manager, Records & Redetermination; Outgoing** **Coordinator STC Study Project** **Manager, Overpayment Unit (UI)** **Compliance Specialist-Demo; Records and Redetermination current.** **Incoming Training Programs Unit Staff** **Operation and Policy Analyst (UI)** Business Employment Specialist, Training Programs Unit Staff- (UI Special Program-STC operations) Training Programs Unit Manager (UI Special Programs-STC operations) outgoing Training Programs Unit Manager (UI Special Programs-STC operations) incoming
Technical & Expert Support for STC	
Operations & Policy Analyst, Benefits & Payment Control **Integration & Training Manager (Field Services)** Deputy Administrator UI Tax Program **Business Group Manager Workforce & Economic Research Section** **Workforce Analysts (3)** **Business & Employment Specialist (Workforce Integration)** **Business Services—Oregon Employment Councils Liaison (Field Services)** **Business Service Analyst (Field Services)**	**Operations and Policy Analyst, Benefits and Payment Control (UI)** **Integration and Training Manager (Field Services)** UI Tax Program **Business Group Mgr. Workforce & Economic Research Section** **Workforce Analysts (3)** **Business & Employment Specialist (Workforce Integration)** **Business Services OEC Business Liaison (Field Services)-Demo; Apprenticeship Program Liaison** **Business Service Analyst (Field Services)**

* Bold indicates the same person(s) interviewed at baseline and follow-up.

For the employer baseline interviews in Iowa, the universe for the in-depth interviews of employers was the set of employers who were assigned to the treatment group and control groups of the RCT and who were prior or current users of the STC program. In Oregon, the universe for the in-depth interviews of employers was the set of employers who were assigned to the treatment group of the RCT or to the treatment region of the QED and who were prior or current program users. Purposive sampling was used to select a sample from each in-depth employer interview universe.

For the follow-up interviews, the original design was to select employers that were part of the treatment sample for the employer survey, including a mix of those that did and did not become STC users during the demonstration period in order to compare how they experienced or reacted to the intervention and their respective reasons for participating or not. The universe of treatment employers who became STC users during the treatment period was expected to be about 22 in Iowa and 88 in Oregon. The treatment non-users were selected from employers who had expressed some

interest in the program during the demonstration period, but had not gone on to use the program. In Iowa the non-users were selected from the lists of employers who had contacted the state to inquire about the program. In Oregon, the non-users were selected from a list of employers who responded to an email and registered to attend an informational STC webinar. There were about 80 employers on the webinar list, none of which had continued on to use the program. Tables 4-29 and 4-30 show the number of employers interviewed at baseline and at follow-up. Purposive selection was used to capture variation across industry sectors, firm size, urban/rural location, and prior usage of STC program under different UI taxing requirements.[14] Non-users were also purposively selected and to the extent possible, matched with the user sample.

Table A3-29. Number of employers interviewed in each state at baseline

State and study	Baseline	
	Users	Non-users
Iowa RCT	5	0
Oregon RCT	2	0
Oregon QED	1	0
Total	8	0

Table A3-30. Number of employers interviewed in each state at follow-up

State and study	Follow-up						
	Treatment			Control			Total
	Users	Non-users	Total	Users	Non-users	Total	
Iowa RCT	8	4	12	1	0	1	13
Oregon RCT	2	5	7	6	0	6	13
Oregon QED	5	4	9	0	0	0	9
Total	15	13	28	7	0	7	35

Selection and recruitment for the baseline employer interviews was performed by the senior researcher for the implementation study with varying degrees of participation by the respective state STC staff. Selection and recruitment of the employers for the baseline interviews for Iowa was done primarily by the state STC person familiar with the firms. The researcher asked the state STC staff to select firms that had used the STC program and provide variation on characteristics such as size, industry, UI tax history, positive and negative reactions to the program, and geographic feasibility. Selection for baseline Oregon employers was done primarily by the researcher. OED provided lists of employers that had used the program and the researcher prioritized the same firm characteristics as suggested to Iowa. The Oregon STC staff person familiar with the firms did the recruitment. Both states found employers mostly cooperative and willing to participate.

Selection for the follow-up interviews was performed by the researcher using lists of employers provided by the states. A systematic selection to implement a research design was conducted. RCT

[14] The taxing requirements changed as a result of the 2012 authorizing legislation.

and QED treatment users were selected from those employers who had used the program for the first time during the demonstration period. As discussed below, control employers were interviewed in place of Oregon RCT treatment employers due to the high refusal rate among treatment users.

There were two ways in which the final interviewed sample differs from the original design plan. First, it was not always possible to get the desired variation of employer characteristics within study design and program usage parameters. Second, and more significant, only two of the intended six RCT treatment users were obtained in Oregon. The state conducted the first telephone recruitment and encountered eight refusals. Six of these employers complained of too many outreach activities from OED, including mailers and the letters inviting participation for the survey and interviews. They were "alarmed" and concerned about what message OED might be sending in terms of the vulnerability of their firm or industry to downturns. The other two refusals said that they could not afford the staff time to participate in an interview.

For the RCT, we were able to recruit six control employers who had used the program. These were interviewed because most treatment users would not participate. However, we were not able to restrict usage patterns to only during the demonstration period and most of the control employers had used the program previously. Nevertheless, these employers had considerable experience with the program and could address many of the research questions pertaining to their experience in using the program and whether or not their responses differed from the treatment employers.

Data Analysis

There were several steps in compiling and preparing the data before the analysis. All the steps were performed separately for each of the two states, Iowa and Oregon. The first step was preparing the textual data, which consisted of reviewing the notes for completeness and organizing as needed into the categories and questions from the interview guides. Subsequently the textual data was compiled. The first step of compilation was to re-sort the interview data by the sections of the Interim Report. The format of the compiled data also sorted the responses within analytic categories. For example, The staff interview data was compiled keeping the three levels of respondents distinct: senior staff, STC management, and technical or area specific experts. Similarly, the compiling of the employer data was done by categories of RCT users and non-users, treatment and control; and QED users and non-users.[15] Identification numbers were generated for the employers and all textual responses and employer characteristics were tagged by the employer ID number. With the ID numbers, we could see how many different employers had similar responses and thus, provide an accurate assessment of patterns in data. It also allowed for easy reference back to the interviews for clarifying or confirming responses as the text was condensed for analysis. After the first compilation, the

[15] All QED interviewed respondents were in the treatment area, specifically Salem and Bend.

textual data was condensed while retaining the same analytic categories as described above. The analysis was conducted by assessing responses within each category of interest and contrasting them to see if such contrasts resulted in any differences in the findings.

Appendix to Chapter 4
Findings on Employer Awareness of STC

Table A4-1. How Iowa control and treatment establishments learned about STC by method of learning and by when they learned

Method of learning	Pre-intervention		Post-intervention		Don't know	
	Control %	Treatment %	Control %	Treatment %	Control %	Treatment %
One or more employees	0.1	0.0	0.4	0.7	0.0	0.0
Organized labor	0.3	0.1	0.0	0.1	0.0	0.2
Another employer	0.7	0.5	0.5	2.1	0.0	0.1
A trade association	0.7	0.1	0.3	0.5	0.0	0.1
Advertisement or PSAs	1.0	0.5	1.4	1.7	0.1	0.4
Email from IWD	0.0	0.1	0.5	2.7**	0.0	0.2
Mail from IWD	1.2	1.1	1.8	11.3***	0.1	0.1
The IWD website	0.7	0.7	1.7	2.4	0.0	0.1
IWD business representative	0.4	0.3	1.5	2.3	0.0	0.1
IWD UI services staff person	0.0	0.0	0.8	0.8	0.0	0.1
IWD rapid response team	0.0	0.0	0.0	0.0	0.0	0.0
The U.S. Department of Labor	0.0	0.0	0.0	0.0	0.0	0.0
Don't remember	0.0	0.6	1.4	1.1	0.0	0.0
Other	0.4	0.1	0.5	1.2	0.7	0.4

Note: Results are based on 206 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all control or treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and control percentages are statistically different at the indicated level: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Table A4-2. How Oregon RCT control and treatment establishments learned about STC by method of learning, and by when they learned

Method of learning	RCT Pre-intervention		RCT Post-intervention		RCT Don't know	
	Control %	Treatment %	Control %	Treatment %	Control %	Treatment %
One or more employees	2.0	0.0	3.0	1.5	0.0	0.0
Organized labor	0.0	0.5	0.0	0.0	0.0	0.0
Another employer	3.8	2.4	1.8	2.0	0.4	0.0
A trade association	0.1	1.5	2.3	0.0**	0.9	0.0
Advertisement or PSAs	0.4	4.3***	4.0	3.6	1.8	0.5
Email from OED	0.5	5.3*	3.9	3.1	0.3	0.0
Mail from OED	0.5	3.9**	5.5	15.5**	1.2	1.0
The IWD website	1.5	0.9	2.3	1.7	0.5	0.0
IWD business representative	1.8	0.2*	1.0	0.5	0.0	0.4
IWD UI services staff person	0.8	1.2	0.9	0.7	0.0	0.0
IWD rapid response team	0.0	0.0	0.0	0.0	0.0	0.0
The U.S. Department of Labor	0.4	0.0	1.2	0.2	0.2	0.0
Don't remember	0.8	3.5	2.7	3.9	0.0	0.0
Other	4.2	2.0	2.9	3.5	0.0	0.0

Note: Results are based on 331 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all Control or Treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and comparison percentages are statistically different at the indicated level.: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Table A4-3. How Oregon QED comparison and treatment establishments learned about STC by method of learning, and by when they learned

Method of learning	QED Pre-intervention		QED Post-intervention		QED Don't know	
	Comparison %	Treatment %	Comparison %	Treatment %	Comparison %	Treatment %
One or more employees	1.4	0.9	1.3	2.5	0.0	0.0
Organized labor	0.4	0.4	1.0	0.3	0.0	0.3
Another employer	2.9	3.1	1.8	2.9	0.3	0.4
A trade association	0.7	1.1	0.5	1.7	0.0	0.0
Advertisement or PSAs	1.3	3.2	1.4	6.0**	0.0	0.4
Email from OED	0.4	2.3*	1.3	2.4	0.3	0.0
Mail from OED	1.7	8.7***	2.0	16.2***	0.3	0.8
The IWD website	0.6	3.1**	0.8	3.2*	0.0	0.0
IWD business representative	1.0	1.5	0.6	1.2	0.0	0.0
IWD UI services staff person	1.8	1.5	0.6	1.2	0.0	0.0
IWD rapid response team	0.0	0.0	0.0	0.0	0.0	0.0
The U.S. Department of Labor	0.3	1.1	0.3	1.2	0.0	0.3
Don't remember	2.2	3.2	0.7	3.4**	0.0	0.0
Other	2.0	2.7	0.4	3.3	0.0	0.4

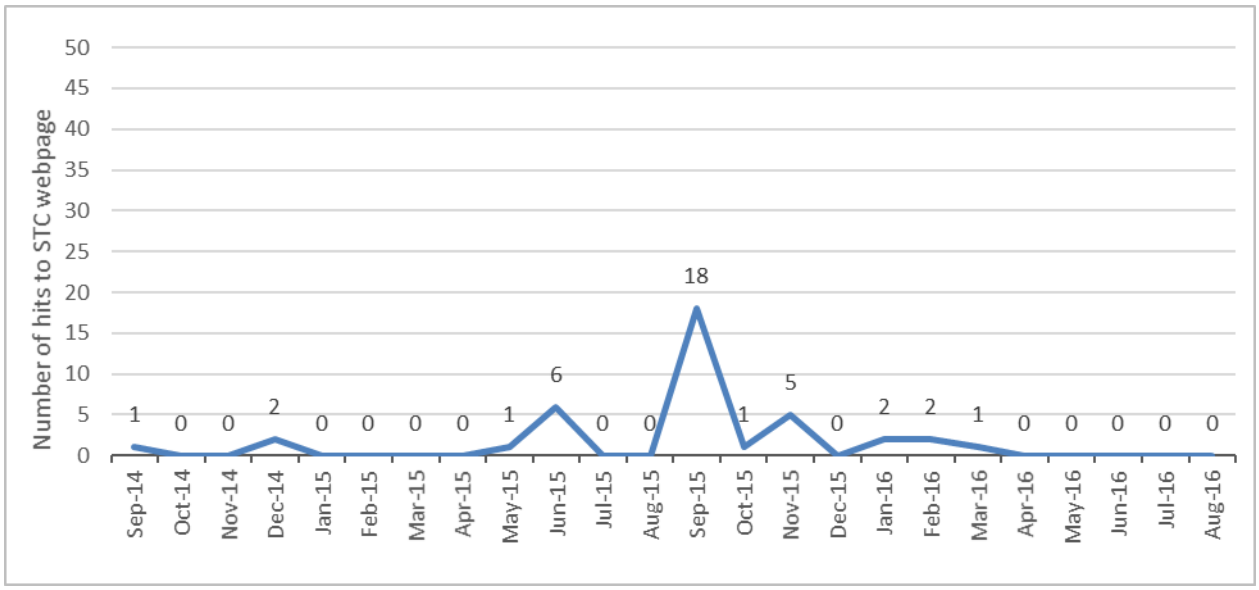
Note: Results are based on 331 responses to the short-form employer survey. Reported percentages reflect weighting to adjust for non-response bias. Cells report the percentage of all Control or Treatment establishments who learned about the program through the indicated method. Asterisks indicate that the difference between treatment and comparison percentages are statistically different at the indicated level.: *** indicates significance at 0.01 level; ** indicates significance at 0.05 level; * indicates significance at 0.10 level.

Table A4-4. Number of Oregon firms with an STC plan, by assignment group, study, when first learned of STC, and method of learning

Method of learning	RCT control		RCT treatment		QED comparison		QED treatment	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
One or more employees	3	1	0	0	1	2	0	3
Organized labor	0	0	0	0	0	0	0	0
Another employer	0	1	0	1	3	1	0	1
A trade association	0	0	0	0	0	0	0	0
Advertisement or PSAs	0	0	0	1	0	0	1	2
Email from OED	0	0	0	0	0	0	2	4
Mail from OED	0	0	1	5	1	0	0	11
The OED website	0	0	0	3	0	1	1	3
OED business representative	0	0	0	1	0	1	0	0
OED UI services staff person	0	0	0	0	0	2	1	2
OED rapid response team	0	0	0	0	0	0	0	0
The U.S. Department of Labor	0	0	0	0	0	0	0	0
Don't remember	1	0	1	0	0	0	0	1
Other	0	0	0	2	0	1	2	1

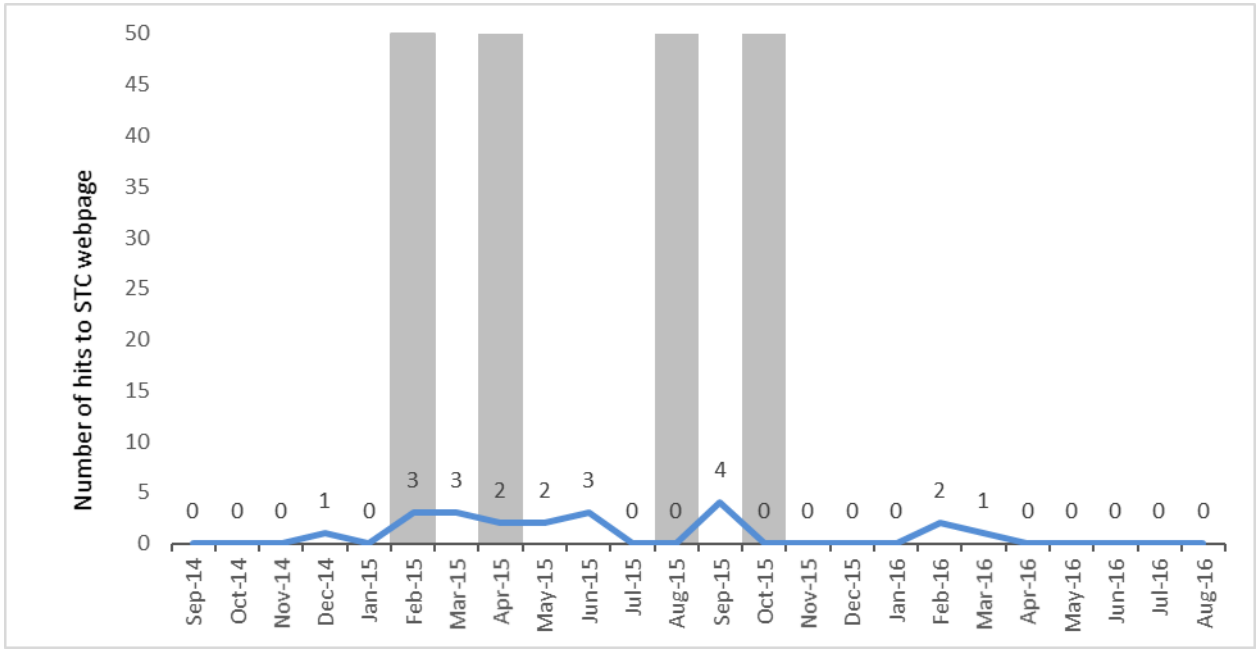
Note: Results are based on 53 responses to the long-form employer survey.

Figure A4-1. Number of hits per month to Iowa STC webpage via URL included on banner to treatment employers



Source: Data reported by Iowa Workforce Development.

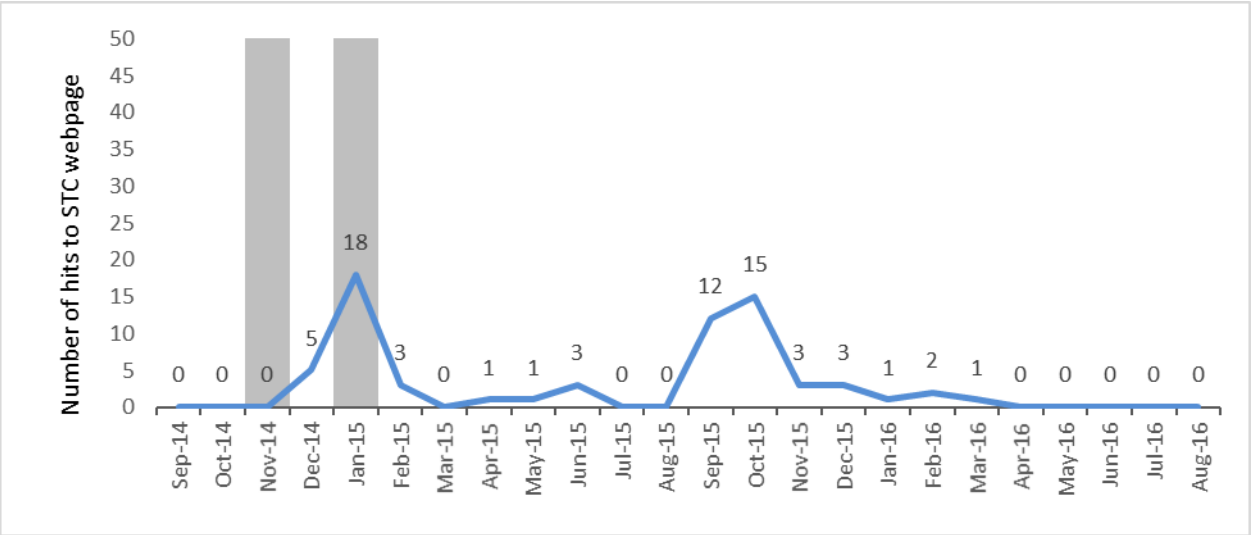
Figure A4-2. Number of hits per month to Iowa STC webpage via URL included with Notice of Claim mailing to treatment employers



Source: Data reported by Iowa Workforce Development.

Vertical bars indicate timing of the intervention.

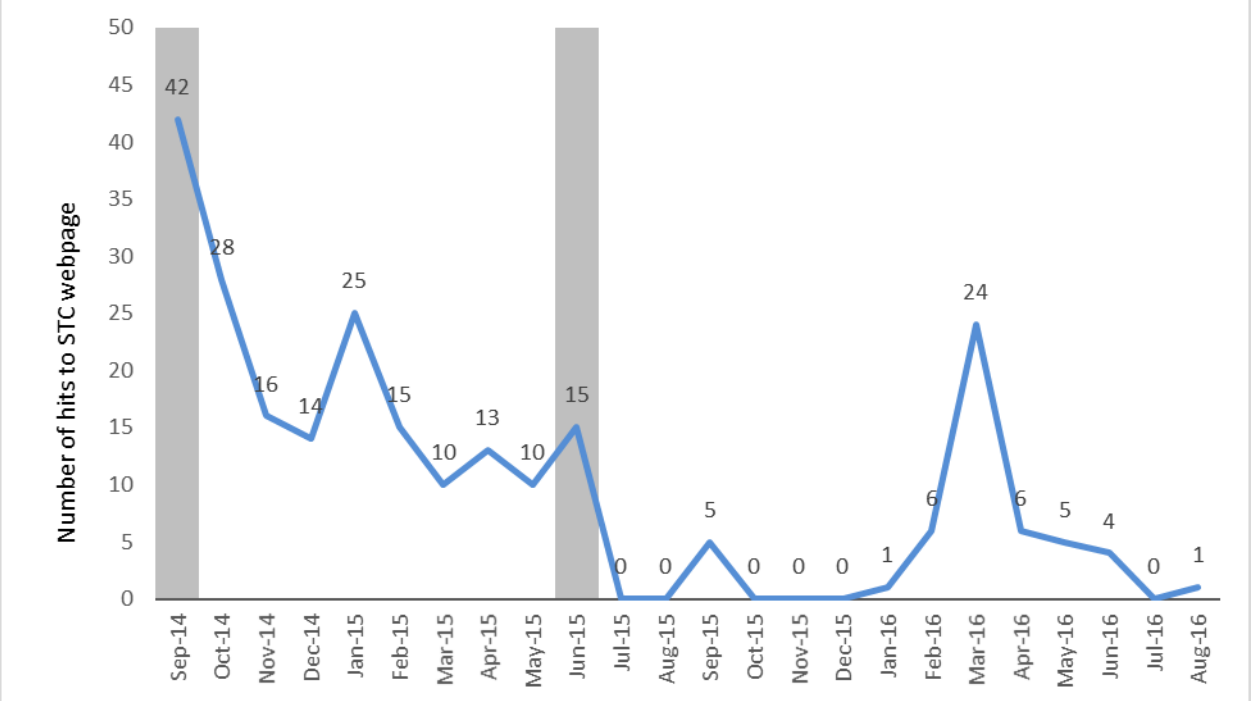
Figure A4-3. Number of hits per month to Iowa STC webpage via URL included with Tax Rate Notice mailing to treatment employers



Source: Data reported by Iowa Workforce Development.

Vertical bars indicate timing of the intervention.

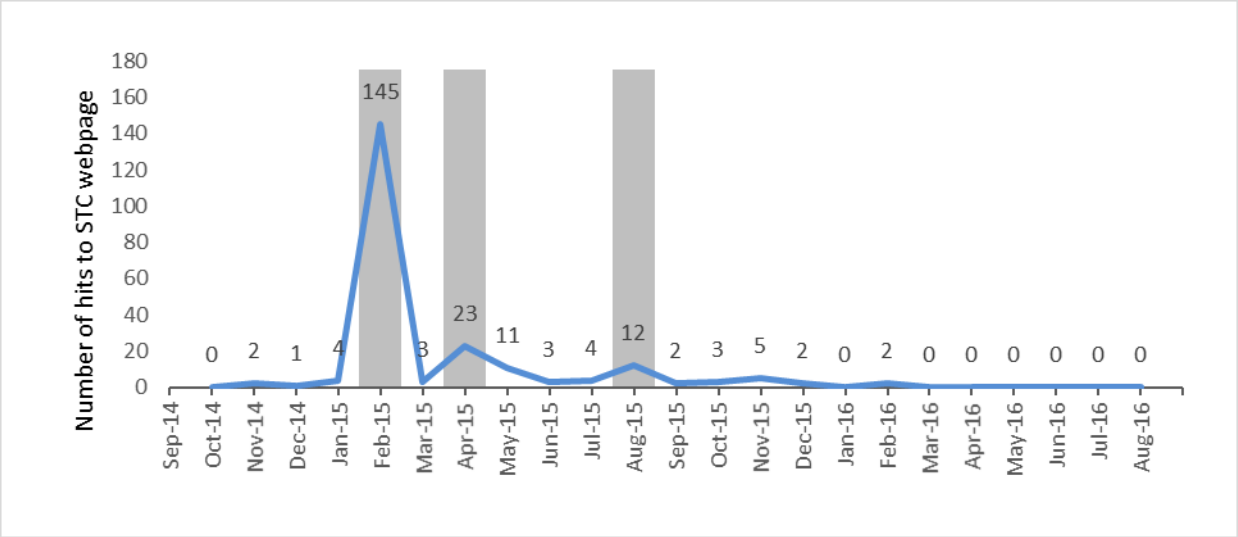
Figure A4-4. Number of hits to Iowa STC webpage via URL included with direct mailings to treatment employers



Source: Data reported by Iowa Workforce Development.

Vertical bars indicate timing of the intervention.

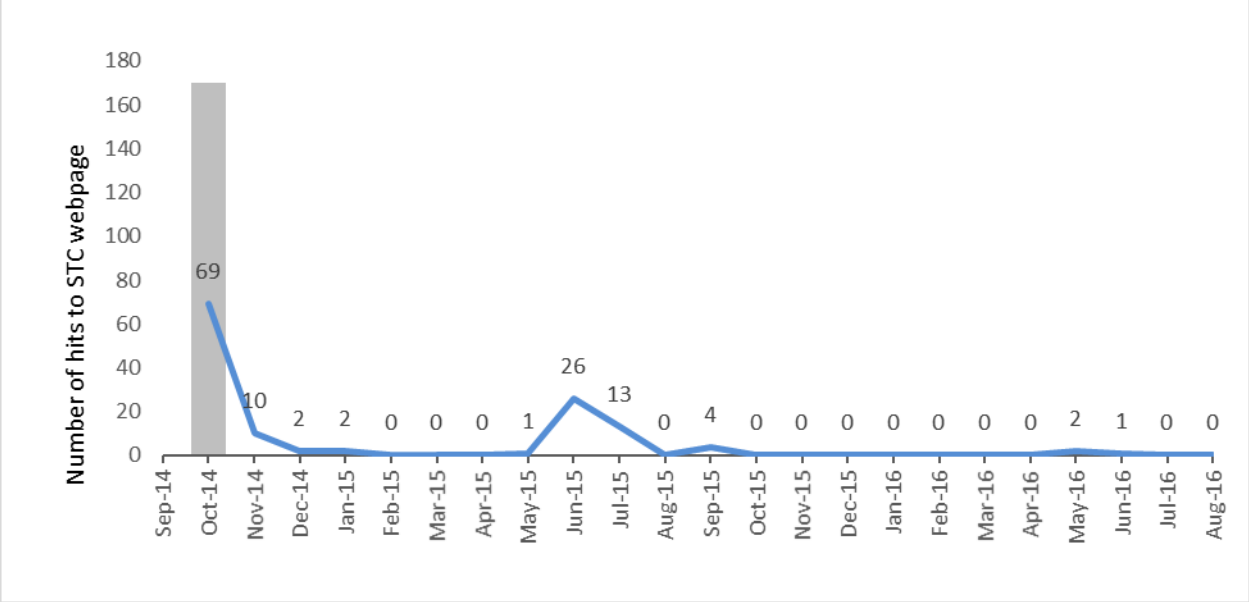
Figure A4-5. Oregon: Number of hits per month to Oregon STC webpage via URL included with Notice of Claims mailing to treatment employers



Source: Data reported by Oregon Employment Department.

Vertical bars indicate timing of the intervention.

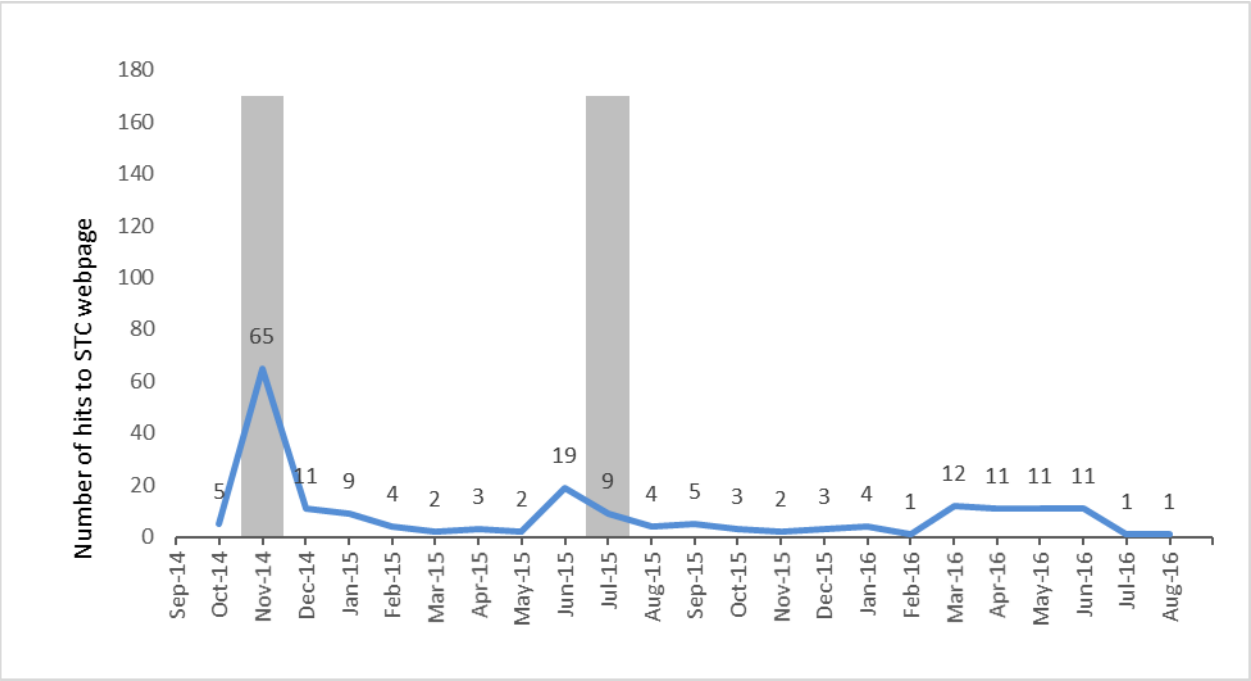
Figure A4-6. Oregon: Number of hits per month to Oregon STC webpage via URL included in email to select treatment employers



Source: Data reported by Oregon Employment Department.

Vertical bars indicate timing of the intervention.

Figure A4-7. Oregon: Number of hits per month to Oregon STC webpage via URL included with direct mailings to all treatment employers



Source: Data reported by Oregon Employment Department.

Vertical bars indicate timing of the intervention.

Appendix to Chapter 5
Findings on Employer Use of STC

Table A5-1. Oregon, comparison of means of control variables, treatment v. control/comparison employers, 2012Q3-2014Q3

Outcome and industry sector	RCT sample				QED sample			
	Treatment, N=9,729	Control, N=9,730	Difference (T-C)	p-value	Treatment, N=11,925	Comparison, N=11,258	Difference (T-C)	p-value
Total wages	473,455	482,806	−9,351	0.914	201,174	220,177	−19,004	0.280
Taxable wages	223,665	215,744	7,921	0.728	113,201	128,752	−15,551	0.050
Employment	38.702	36.780	1.921	0.622	23.226	25.875	−2.649	0.192
Benefit ratio	0.018	0.020	−0.002	0.043	0.024	0.026	−0.002	0.051
UI tax rate	0.028	0.028	0.000	0.828	0.028	0.029	−0.001	0.000
Multi-establishment	0.053	0.055	−0.002	0.508	0.036	0.046	−0.011	0.000
Benefit Charges ($)	3,763	3,754	9	0.977	2,088	2,618	−530	0.001
N (for Benefit Charges ($) only)	7,767	7,663			9,795	9,398		
Proportion in sector:								
Agriculture, forestry, fishing	0.017	0.017	0.000	0.955	0.097	0.074	0.022	0.000
Construction	0.086	0.090	−0.004	0.338	0.099	0.087	0.012	0.002
Manufacturing	0.075	0.074	0.001	0.847	0.077	0.071	0.006	0.076
Wholesale trade	0.072	0.076	−0.004	0.311	0.030	0.040	−0.010	0.000
Retail trade	0.095	0.096	−0.001	0.828	0.121	0.126	−0.004	0.325
Transportation, warehousing	0.027	0.027	0.000	0.894	0.023	0.030	−0.007	0.001
Information	0.021	0.021	0.000	0.999	0.012	0.015	−0.002	0.111
Finance and insurance	0.034	0.034	0.000	0.970	0.022	0.026	−0.004	0.031
Real estate, rental, leasing	0.031	0.032	−0.001	0.623	0.028	0.030	−0.001	0.547
Professional, scientific, technical	0.111	0.111	0.000	0.980	0.063	0.064	−0.001	0.695
Enterprise management	0.005	0.004	0.001	0.226	0.003	0.003	0.000	0.707
Admin, support, waste mgmt	0.059	0.057	0.002	0.558	0.045	0.045	0.001	0.821
Educational services	0.017	0.017	0.000	0.867	0.008	0.008	0.000	0.746
Health care/social assistance	0.114	0.114	0.000	0.998	0.106	0.128	−0.022	0.000
Art, entertainment, recreation	0.017	0.016	0.001	0.613	0.020	0.018	0.002	0.378
Accommodation and food services	0.123	0.118	0.005	0.310	0.136	0.129	0.007	0.097
Other Services (except public administration)	0.094	0.095	−0.001	0.904	0.093	0.092	0.002	0.663
Public administration	0.003	0.003	0.000	0.888	0.017	0.016	0.001	0.712

NOTE: Owing to rounding error, the implied difference between the treatment and control/comparison means may not equal the difference reported in the table.

Table A5-2. Oregon, effect of interventions on UI benefit payments and STC workers, RCT sample

Key independent variables	STC benefit payments ($)		Number FTE STC workers		STC benefits/all charges	
Treatment	3.46782*	3.47632*	0.00871*	0.00872*	0.00168**	0.00169**
	(1.88996)	(1.89087)	(0.00448)	(0.00448)	(0.00069)	(0.00069)
Treatment*20134-20143	−2.04955	−2.04870	−0.00569	−0.00569	−0.00303*	−0.00304*
	(1.81874)	(1.81849)	(0.00430)	(0.00430)	(0.00173)	(0.00173)
Treatment*post-intervention	**2.26040**	**−3.59237**	**0.00339**	**−0.00846**	**−0.00054**	**−0.00166***
	(3.70555)	**(2.61483)**	**(0.00773)**	**(0.00588)**	**(0.00096)**	**(0.00085)**
Treatment*prior plan*post-intervention		**922.87968****		**1.84219***		**0.07301**
		(469.23543)		**(0.94875)**		**(0.05745)**
Prior plan*post-intervention		195.96246		0.47385		0.07062*
		(122.75622)		(0.30411)		(0.03680)
N	322,369	322,369	322,369	322,369	113,549	113,549

NOTE: Each column represents a separate regression with the indicated dependent variable. The unit of observation is the UI employer-year-quarter and the time-period is 2012Q3 through 2016Q3. All models also include year-quarter fixed effects, industry fixed effects at the 2-digit NAICS level, and controls for the log of employment, the log of payroll, the benefit ratio, the UI tax rate, an indicator for whether the firm is multi-establishment, the county-level unemployment rate, and interaction of treatment with an indicator or year-quarter indicators for 2013Q4-2014Q3. Standard errors are in parentheses. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table A5-3. Oregon, effect of interventions on UI benefit payments and STC workers, QED sample

Key independent variables	STC benefit payments ($)		# FTE STC workers		STC benefits/all charges	
Treatment	0.58106	0.57099	0.00175	0.00173	0.00046	0.00047
	(0.95453)	(0.95781)	(0.00236)	(0.00236)	(0.00052)	(0.00052)
Treatment*20134-20143	−1.08323	−1.08243	−0.00282	−0.00282	−0.00059	−0.00059
	(1.09375)	(1.09293)	(0.00270)	(0.00270)	(0.00065)	(0.00065)
Treatment*post-intervention	**−2.13442**	**−1.19554**	**−0.00385**	**−0.00219**	**0.00014**	**0.00043**
	(2.95687)	**(2.78745)**	**(0.00632)**	**(0.00601)**	**(0.00089)**	**(0.00086)**
Treatment*prior plan *post-intervention		**−366.23270**		**−0.66047**		**−0.09437**
		(349.46542)		**(0.71437)**		**(0.06924)**
Prior plan *post-intervention period		602.43378*		1.24053**		0.15042**
		(317.22820)		(0.61582)		(0.06303)
N	384,670	384,670	384,670	384,670	145,354	145,354

NOTE: Each column represents a separate regression with the indicated dependent variable. The unit of observation is the UI employer-year-quarter and the time-period is 2012Q3 through 2016Q3. All models also include year-quarter fixed effects, industry fixed effects at the 2-digit NAICS level, and controls for the log of employment, the log of payroll, the benefit ratio, the UI tax rate, an indicator for whether the firm is multi-establishment, the county-level unemployment rate, and interaction of treatment with an indicator or year-quarter indicators for 2013Q4-2014Q3 . Standard errors are in parentheses. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table A5-4. Oregon, effect of interventions on adoption of new STC plan, by firm sector and size

Key independent variables	RCT Sample				QED Sample			
Treatment	0.00003 (0.00008)	0.00010 (0.00012)	0.00003 (0.00008)	0.00010 (0.00012)	0.00001 (0.00005)	0.00002 (0.00008)	0.00000 (0.00005)	0.00001 (0.00008)
Treatment*20134-20143		−0.00016 (0.00012)		−0.00016 (0.00012)		−0.00003 (0.00008)		−0.00003 (0.00008)
Treatment*post-intervention	**0.00001 (0.00015)**	**−0.00006 (0.00018)**	**0.00088 (0.00064)**	**0.00081 (0.00064)**	**0.00022 (0.00017)**	**0.00020 (0.00018)**	**−0.00069 (0.00056)**	**−0.00070 (0.00056)**
goods sector*post-intervention	0.00022 (0.00034)	0.00022 (0.00034)			0.00041* (0.00022)	0.00041* (0.00022)		
other services*post-intervention	−0.00012 (0.00011)	−0.00012 (0.00011)			−0.00018* (0.00011)	−0.00018* (0.00011)		
treatment*goods sector*post-intervention	**0.00155*** (0.00057)**	**0.00155*** (0.00057)**			**0.00017 (0.00034)**	**0.00017 (0.00034)**		
treatment*other services*post-intervention	**0.00009 (0.00016)**	**0.00009 (0.00016)**			**0.00006 (0.00019)**	**0.00006 (0.00019)**		
<50*post-intervention			−0.00038 (0.00043)	−0.00038 (0.00043)			−0.00076* (0.00043)	−0.00076* (0.00043)
treatment*<50*post-intervention			**−0.00063 (0.00066)**	**−0.00063 (0.00066)**			**0.00108* (0.00056)**	**0.00108* (0.00056)**
N	322,369	322,369	322,369	322,369	384,670	384,670	384,670	384,670

NOTE: Each column represents a separate regression. The dependent variable is started an STC plan. The unit of observation is the UI employer-year-quarter and the time-period is 2012Q3 through 2016Q3. All models also include year-quarter fixed effects, industry fixed effects at the 2-digit NAICS level, and controls for the log of employment, the log of payroll, the benefit ratio, the UI tax rate, an indicator for whether the firm is multi-establishment, the county-level unemployment rate, and interaction of treatment with an indicator or year-quarter indicators for 2013Q4-2014Q3 . Standard errors are in parentheses. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, and *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table A5-5. Mean values of analysis variables in Iowa administrative data files, 2012Q3 through 2014Q2

Analysis variable	Per-firm mean		Difference (T−C)	p-value
	Control (n = 14,328)	Treatment (n = 14,329)		
Total wages	378,828	388,477	9,648	0.768
Taxable wages	211,581	216,484	4,903	0.715
Employment	41.96	43.10	1.14	0.688
Benefit ratio	0.0134	0.0128	−0.0006	0.117
UI tax rate	0.0179	0.0173	−0.0006	0.026
Total UI benefit charges	20,328	19,531	−797	0.553
Number of quarters with wages	7.56	7.56	0.00	0.891
Multiple location firm	0.065	0.069	0.004	0.163
Experience rated before 2012	0.862	0.857	−0.004	0.285
Has UI claims in certifications file	0.542	0.541	−0.001	0.872
Amount of total UI benefits	11,524	12,204	680	0.326
Unconditional total UI benefits	6,243	6,600	357	0.349
Has STC claims in certifications file	0.001	0.001	0.000	0.303
Amount of STC benefits	1,277	506	−771	0.117
Unconditional STC benefits	1.25	0.71	−0.54	0.409

NOTE: Owing to rounding error, the implied difference between the treatment and control means may not equal the difference reported in the table.

The Iowa experiment ended with four groups for analysis. The two control groups are those that were sent the November tax notice STC insert (CN) and those that were uncontaminated (CU) by the error in mailing. The two treatment groups are those that were sent the November STC enclosure (TN) and those sent the STC information in January (TJ). Table I.3 compares the four groups on means of observable characteristics. Compared to the CU group, the CN group employers had significantly larger employment and consequently significantly larger total and UI taxable quarterly wages paid. The CN group also had significantly higher UI benefit ratios than CU, but the UI tax rates were not different between the two groups. The CN group also operated slightly longer, was more likely to have multiple locations, and was more likely to be experience rated than the CU group. Generally, the TN group is like the CN group in observable characteristics, and therefore has the same pattern of differences from the CU group. The TJ group is not significantly different from the CU group on any observable characteristics. The treatment group that was not mailed either STC packet associated with the tax rate notice included mostly inactive employers with values of mean characteristics reflecting the shorter observed active period.

Table A5-6. Iowa, effect of interventions on employer adoption of STC, STC benefits, and STC benefits as a share of total UI benefits

Key independent variables	Initiated an STC Plan				STC Benefits ($)				STC Benefits as a Share of Total UI Benefits			
Treatment group	−0.00004	−0.00004	−0.00005	−0.00683***	−0.11	−0.11	−0.30	−210.53***	0.00006	0.00006	−0.00004	−0.01814***
	(0.00004)	(0.00004)	(0.00004)	(0.00050)	(1.03)	(1.03)	(1.10)	(12.81)	(0.00030)	(0.00030)	(0.00032)	(0.00223)
Treatment * post-intervention	0.00003	−0.00000	0.00001	0.00003	−0.36	−0.69	−0.85	−0.25	−0.00047	−0.00062	−0.00045	−0.00048
	(0.00006)	(0.00006)	(0.00007)	(0.00006)	(1.44)	(1.62)	(1.73)	(1.44)	(0.00041)	(0.00046)	(0.00049)	(0.00041)
Treatment * tax holiday		0.00009	0.00009			0.98	2.50			0.00045	0.00042	
		(0.00008)	(0.00009)			(2.13)	(2.28)			(0.00059)	(0.00064)	
Contaminated control			−0.00007				−0.88				−0.00044	
			(0.00007)				(1.78)				(0.00051)	
Contaminated control * post intervention			0.00008				−0.63				0.00072	
			(0.00011)				(2.76)				(0.00076)	
Contaminated control * tax holiday			0.00002				6.78~				−0.00015	
			(0.00014)				(3.61)				(0.00098)	
No prior plan*post-intervention				–0.02470***				–866.24***				-0.07035***
				(0.00049)				(12.50)				(0.00221)
Treatment * post-intervention*no prior plan				0.00681***				210.87***				0.01831***
				(0.00050)				(12.80)				(0.00222)
N	456,523	456,523	456,523	456,523	456,523	456,523	456,523	456,523	85,675	85,675	85,675	85,675

NOTE: Each column represents a separate regression with the dependent variable. The unit of observation is the UI employer-year-quarter and the time-period is 2012Q3 through 2016Q3. The regressions also include industry fixed effects, quarter-year fixed effects and the following firm controls: log employment, benefit ratio, UI tax rate, an indicator for multiple locations and the county unemployment rate. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table A5-7. Iowa, effect of interventions on the probability of workers receiving STC benefits and full-time equivalent number of workers on STC

Key independent variables	Workers Receive STC Benefits				FTE Workers on STC			
Treatment group	−0.00185	−0.00185	−0.00497	−3.20944***	−0.00027	−0.00027	−0.00074	−0.55373***
	(0.01779)	(0.01779)	(0.01898)	(0.22119)	(0.00248)	(0.00248)	(0.00264)	(0.03073)
Treatment * post-intervention	**−0.00839**	**−0.01482**	**−0.01967**	**−0.00675**	**−0.00137**	**−0.00228**	**−0.00265**	**−0.00111**
	(0.02492)	**(0.02794)**	**(0.02986)**	**(0.02480)**	**(0.00347)**	**(0.00389)**	**(0.00415)**	**(0.00345)**
Treatment * tax holiday		**0.01866**	**0.03663**			**0.00265**	**0.00695**	
		(0.03670)	**(0.03927)**			**(0.00511)**	**(0.00546)**	
Contaminated control			−0.01450				−0.00216	
			(0.03067)				(0.00427)	
Contaminated control * post intervention			**−0.02072**				**−0.00154**	
			(0.04759)				**(0.00662)**	
Contaminated control * tax holiday			**0.08005**				**0.01923****	
			(0.06226)				**(0.00866)**	
No prior STC plan * post intervention				−13.47304***				−2.10370***
				(0.21588)				(0.02999)
Treatment * no prior plan * post intervention				**3.21447*** **				**0.55465*** **
				(0.22095)				**(0.03070)**

NOTE: Each column represents a separate regression with the dependent variable. The unit of observation is the UI employer-year-quarter and the time-period is 2012Q3 through 2016Q3. The regressions also include industry fixed effects, quarter-year fixed effects and the following firm controls: log employment, benefit ratio, UI tax rate, an indicator for multiple locations and the county unemployment rate. * denotes statistical significance at the 0.1 level, ** at the 0.05 level, *** at the 0.01 level. Coefficient estimates (standard errors) for variables that provide causal estimates of the effects of the interventions are bolded.

Table A5-8. Employee retention rates at firms with STC plan, Oregon and Iowa (percent)

Values	Oregon		Iowa	
	1-quarter retention rate	4-quarter retention rate	1-quarter retention rate	4-quarter retention rate
Post-STC (def 1)	87.60	68.92	93.44	82.08
Pre-STC	89.18	71.73	91.48	80.88
F-test, p-value	0.40	0.36	0.35	0.54
N	71	71	17	17
Post-STC (def 2)	86.25	62.05	94.16	72.59
Pre-STC	89.70	70.43	91.00	73.77
F-test, p-value	0.23	0.16	0.11	0.75
N	55	26	15	7
post-STC wkrs (def 1)	97.57	75.78	98.11	85.21
post-all wkrs	87.61	68.83	91.67	80.19
F-test, p-value	0.00	0.00	0.00	0.08
N	70	70	17	17
post-STC wkrs (def 2)	88.25	59.85	97.08	82.75
post-all wkrs	86.25	62.05	91.64	58.13
F-test, p-value	0.14	0.62	0.03	0.02
N	55	26	15	7

NOTE: Retention rates are computed using administrative UI quarterly earnings data from Oregon and Iowa. The samples include employers with STC plans and employees who received STC payments from those plans. In post-STC definition 1, the retention rate is measured from quarter of the first STC payment. In post-STC definition 2, the retention rate is measured from the quarter of the last STC payment. F-tests show the statistical significance of the differences in mean retention rates. Observations are weighted by the number of the firm's employees receiving STC benefits during a plan's operation.

Appendix to Chapter 6
Descriptive Evidence of Other Factors Affecting Employer Use of STC

Cost to States of Administering the STC Program

Iowa

Iowa recorded and provided to the Study Team the number of minutes spent on eight separate tasks between October 2014 and April 2016. The administration of the program was primarily conducted by one staff member. For the demonstration, she agreed to track time spent on different tasks in an Excel spreadsheet. This tracking continued when the person administering the program was reassigned and a new person took over the role. Two additional staff members were trained and began work in January 2016. They were involved in addressing employer inquiries and the handling of STC applications, and their time was also recorded. Table A6-1 provides the number of minutes per month spent on the various tasks. For some activities, there were few occurrences but setting up claims and processing claim hours appear to be ongoing tasks.

The number of minutes for inquiries was highest in November 2014 (115 minutes), February 2015 (86 minutes) and January 2016 (80 minutes), suggesting the possibility of peak periods of employer interest in STC. However, data on inquiry counts indicate that the number of employers contacting the state agency did not vary greatly. October 2014 had the largest number of inquiries, at 14, followed by 11 in February 2015, and 10 in January of 2016. So, it appears more likely that the amount of time spent reflects meeting the needs of particular employers (e.g., to learn about the STC program, application process and potential tax rate implications) rather than the number of employers.

Table A6-2 provides the total time in minutes per activity for September 2014 through April 2016, the number of occurrences, and the average number of minutes per occurrence. The average amount of time per occurrence is relatively small, with the largest amount of time spent to set up STC claims (20.1 minutes per occurrence).

Table A6-1. Minutes of IWD staff time by task, per month, September 2014 through April 2016

Year	Month	Inquiries	Applications	Plans	Approval of Plans	Set up Claims	Process Hours	Reactivate previous plan	Address question and errors
2014	September	40	0	0	15	0	0		10
2014	October	76	5	0	35	20	9	5	5
2014	November	115	10	0	10	113	36		99
2014	December	55	20	15	25	116	78		160
2015	January	58	0	0	10	65	70	10	121
2015	February	86	0	0	10	150	86	10	60
2015	March	16	0	0	0	85	61		23
2015	April	30	15	0	10	20	38		137
2015	May	0	0	0	25	60	32		30
2015	June	55	10	0	20	25	30	5	10
2015	July	50	10	5	40	165	33		85
2015	August	30	5	0	35	365	79		265
2015	September	12	0	0	5	680	74		100
2015	October	5	0	0	0	100	78		40
2015	November	5	5	0	0	55	82		50
2015	December	5	0	0	0	40	66		65
2016	January	80	0	0	30	162	66		37
2016	February	0	0	0	80	384	183		114
2016	March	10	5	5	37	401	137		150
2016	April	2	0	0	10	85	130		122
Mean		*36.5*	*4.3*	*1.3*	*19.9*	*154.6*	*68.4*	*7.5*	*84.2*

Source: Administrative data provided by Iowa Workforce Development

Table A6-2. Mean number of minutes per occurrence spent by Iowa administrative staff on STC activities between September 2014 and April 2016

Activity	Total time spent (minutes)	Number of occurrences	Mean number of minutes per occurrence
Respond to inquiry	730	88	8.3
Assist with application	85	13	6.5
Assist with plan	25	4	6.3
Approve plan	397	43	9.2
Set up claims	3,091	154	20.1
Process weekly hours	1,368	655	2.1
Reactivate previous plan	30	6	5.0
Address questions/correct errors during participation	1,683	260	6.5

Source: Administrative data provided by Iowa Workforce Development.

Table A6-3 provides the estimated cost to Iowa Workforce Development for a managerial level staff member to administer the program based on the reported actual average time spent per month over the period of September 2014 through April 2016.[16] The table indicates the amounts of time (in minutes) spent per occurrence for each activity and the estimated salary cost per month and per year for each activity. The total cost to administer the program in Iowa for 12 months is estimated to be about $3,147 (the summation of the last column).

Table A6-3. Estimates of monthly and annual state agency costs in Iowa to administer the STC program, based on data for September 2014 through April 2016

Activity	Mean number of minutes per occurrence	Cost per occurrence for wage of $38/hr	Mean number of minutes per month	Cost per month for wage of $38/hr	Cost for 12 months for wage of $38/hr
Respond to inquiry	8.3	$5.26	40.6	$25.71	$308.56
Assist with application	6.5	$4.12	9.4	$5.95	$71.44
Assist with plan	6.3	$3.99	8.3	$5.26	$63.08
Approve plan	9.2	$5.83	25.5	$16.15	$193.80
Set up claims	20.1	$12.73	162.7	$103.04	$1,236.52
Process weekly hours	2.1	$1.33	72	$45.60	$547.20
Reactivate previous plan	5.0	$3.17	7.5	$4.75	$57.00
Address questions/ correct errors during participation	6.5	$4.12	88.1	$55.80	$669.56
Total	NA	NA	NA	$262.26	$3,147.12

NOTE: The estimates in this table are based on the assumption of an hourly wage rate of $38 for administrative staff.

Oregon Hours

OED provided the Study Team with monthly reports of staff time (in hours) charged to specific subaccounts beginning in September 2014, thereby allowing us to tally the hours by subaccounts related to the demonstration activities, initial STC claims, and weekly STC claims, among others. One challenge is estimating the annual cost of administering the STC program in Oregon is that, in August 2015, administration of the STC program was transferred to a different unit within the agency and new staff took over that work. At the same time, OED was implementing process improvement activities. The cost analysis is also limited by the accuracy of staff members' reporting of their hours worked by subaccount category.

[16] We estimated a wage rate of $38 per hour from salary data reported in the Des Moines Register for a State Workforce Development Agency Management Analyst 3 downloaded July 13, 2016.

Table A6-4 provides the number of hours of staff time charged per month to handle initial claims and weeks claims between September 2014 and April 2016. For the months of September 2014 through July 2015, an average of 37.0 hours per month of staff hours were charged for handling *initial* STC claims and 28.6 hours for handling *continued weekly* STC claims (or 52.5 hours per month for the period of September 2014 through February 2015 when positive hours were reported). For the months of August 2015 through April 2016, after the Work Share program was moved to a new unit with newly trained staff members, staff charged an average of 104.4 hours per month for initial claims and 111.4 hours per month for continued weekly claims.

OED provided data about STC plans established during the demonstration that we consider in an effort to determine whether there might have been an increase in the volume of staff activity to explain the marked increase in average hours charged to the program beginning in August 2015. Table A6-5 shows the number of new plans with a first claim week in the 4-week ending in week 40 of 2014 through the 4-week period ending in week 52 of 2015. Table A6-6 shows the number of Oregon employers with new STC plans by the start week of the plan, again reported for successive 4-week periods. These data do not support there having been a sharp jump in the Work Share workload beginning in August 2015. The reason for the jump is unknown.

Table A6-4. Hours of Oregon staff time charged to handle initial claims and continued weekly claims, September 2014 through April 2016

Year	Month	Initial Claims	Continued Weekly Claims
2014	September	38.5	31
2014	October	56	41
2014	November	68.5	58.5
2014	December	70.5	65.5
2015	January	29.5	65.75
2015	February	55	53
2015	March	21.5	0
2015	April	24.5	0
2015	May	6.5	0
2015	June	10.5	0
2015	July	26	0
2015	August	130.3	117.25
2015	September	98.5	189.5
2015	October	67.25	130
2015	November	76.25	151
2015	December	118.5	112.5
2016	January	96.75	59.5
2016	February	120.25	106.5
2016	March	93.5	67.25
2016	April	138	69
Total		1346.3	1317.25

Source: Administrative data provided by Oregon Employment Department

Table A6-5. Number of Oregon employers with a STC first claim week starting between September 2014 and December 2015

Four-week period end week	Approximate month	Number of employers with a STC first week claim
2014_40	September	4
2014_44	October	5
2014_48	November	20
2014_52	December	9
2015_04	January	13
2015_08	February	11
2015_12	March	13
2015_16	March/April	6
2015_20	April	7
2015_24	May	12
2015_28	June	9
2015_32	July	9
2015_36	August	12
2015_40	September	4
2015_44	October	2
2015_48	November	2
2015_52	December	0

Source: Administrative data provided by Oregon Employment Department

Table A6-6. Number of Oregon employers with new STC plans, by start week, starting between September 2014 and December 2015

Time period for start week of plan	Approximate month	Number of Employers
2014_40	September	10
2014_44	October	8
2014_48	November	23
2014_52	December	14
2015_04	January	18
2015_08	February	16
2015_12	March	15
2015_16	March/April	5
2015_20	April	13
2015_24	May	14
2015_28	June	7
2015_32	July	10
2015_36	August	14
2015_40	September	7
2015_44	October	18
2015_48	November	14
2015_52	December	7

Source: Administrative data provided by Oregon Employment Department

Appendix B

Intervention Materials

Oregon

DRAFT POP-UP OR BANNER FOR JOB POSTING SITE

Permanent Layoffs and Re-tooling are Expensive

Consider Work Share Instead of Layoffs

The Work Share program in Oregon is an alternative to layoffs during declines in regular business activity. Under Work Share, work reductions are shared by reducing employees' work hours and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs and employers maintain their skilled workforce for when business improves. Could Work Share help your business and employees?

Learn more at www.oregon.gov/employ/ui/employer/Pages/work_share_updated.aspx

Oregon
Kate Brown, Governor

Employment Department
875 Union Street NE
Salem, Oregon 97311
(503) 947-1394
TTY-TDD 711
www.Employment.Oregon.gov

State of Oregon
Employment
Department

-EMPLOYER NAME
-ADDRESS 1
-ADDRESS 2
-CITY –STATE –ZIP –ZIP+4

The Oregon Employment Department has a valuable tool to help you retain skilled workers during temporary business downturns. This program is called Work Share.

The Work Share Program gives you an alternative to layoffs if business declines. You can reduce the number of hours for workers, and the Work Share Program will provide partial lost earnings replacement through unemployment insurance (UI) benefits. Work Share can keep employees connected to their job and allow you to maintain a skilled workforce for when business conditions improve.

Employees can receive a partial UI benefit equal to the percent of their work hour reduction. Benefits paid to your employees under a Work Share plan will affect your UI tax rate in the same manner that regular UI payments do, but Work Share lets the employer set the duration of the Work Share plan, with agency approval, and the percentage of the work week reduction in hours (between 20-40%).

While the Oregon Work Share Program does not apply to normal seasonal business slowdowns, it has already made a difference to hundreds of Oregon businesses.

Enclosed is a Work Share Program brochure. If you are interested in learning more, please call us at 1-800-237-3710 ext 71649 or 503-947-1649, or visit our website at: www.oregon.gov/Employ/Businesses/Pages/Work-Share-Program-6.aspx.

/David Gerstenfeld/
David Gerstenfeld
Assistant Director for Unemployment Insurance

Oregon
Kate Brown, Governor

Employment Department
875 Union Street NE
Salem, Oregon 97311
(503) 947-1394
TTY-TDD 711
www.Employment.Oregon.gov

State of Oregon
Employment
Department

-EMPLOYER NAME
-ADDRESS 1
-ADDRESS 2
-CITY –STATE –ZIP –ZIP+4

The Oregon Employment Department has a valuable tool for retaining skilled workers during temporary business downturns. This program is called Work Share.
The Work Share program gives you an alternative to layoffs if business declines. Instead of losing valuable workers, you can reduce weekly hours and the Work Share Program will replace part of those lost earnings through unemployment insurance (UI) benefits. Work Share can keep employees connected to their job and allow you to maintain a skilled workforce for when business conditions improve.

Employees receive UI benefits equal to the percent of their work hour reduction. Benefits paid to participants in Work Share affect employer UI tax rates the same way that regular UI payments do, but Work Share lets employers control the amount of compensation their employees receive. While the Oregon Work Share Program does not apply to normal seasonal patterns, it has already made a difference to hundreds of Oregon businesses.

Enclosed is a Work Share Program brochure. We are also offering a free webinar about the Work Share program. The webinar is scheduled to take place on XXXXXX. If you are interested in signing up, please send an email request to

If you are interested in learning more, please call us at 1-800-237-3710 ext 71649 or 503-947-1649, or visit our website at: www.oregon.gov/Employ/Businesses/Pages/Work-Share-Program-5.aspx.

/David Gerstenfeld/

David Gerstenfeld

Assistant Director for Unemployment Insurance

Oregon

Kate Brown, Governor

Dear [NAME]:

Do you know a company that struggles with multiple layoffs?

Does the company spend too much money training new workers when business recovers?

Would the company be interested in a program to help keep skilled workers employed?

Running a business can be a challenge. There are unexpected downturns that make things difficult, and the Work Share program is a tool that can help businesses deal with those challenging times.

Employers can reduce the number of hours for workers, and the Work Share Program will partially replace lost earnings through Unemployment Insurance (UI) benefits. Benefits paid to employees in Work Share affect employer UI tax rates in the same way that regular UI payments do, but Work Share lets the employer set the duration of the Work Share plan, with agency approval, and the percentage of the work week reduction in hours (between 20% and 40%).

We are offering a free webinar about the Work Share program. The webinar will be offered on June 23, 2015 at 10:00 a.m. and again on July 9, 2015 at 2:00 p.m. If you or businesses in your county are interested in signing up, please visit the following website: XXXXXXXX. To sign up for the webinar, you will need the password: workshare. Space is limited, so sign up now.

/David Gerstenfeld/
David Gerstenfeld

David Gerstenfeld

Assistant Director for Unemployment Insurance

Oregon

Kate Brown, Governor

Dear [Legislator]:

I am writing to share information about a program offered by the Oregon Employment Department to employers. The Work Share program assists employers in dealing with non-seasonal downturns in their business by providing an alternative to layoffs. Using Work Share, employers can better control their employment costs by reducing the number of hours for workers and partially replacing the lost earnings of their employees with Unemployment Insurance (UI) benefits.

Among the benefits to employers are:

1. Reducing training costs by keeping their workforce intact;
2. Avoiding costs related to hiring and reassignment;
3. Keeping their ability to expand operations quickly when business conditions improve; and
4. Maintaining productivity and quality levels when using their existing workforce.

The Work Share program has the potential to save employers in your district thousands of dollars, not to mention help maintain economic stability in your area by keeping people working. Please help us promote this valuable resource for your constituents.

To see how the Work Share Program has helped other employers in Oregon, I invite you to watch a video at: www.oregon.gov/EMPLOY/Businesses/Pages/Work-Share-Program-Overview.aspx. For more information about the program, you can also visit: www.oregon.gov/Employ/Businesses/Pages/Work-Share-Program-1.aspx.

If you are interested in meeting with us, you can reach the agency's Legislative and Public Affairs Manager, Andrea Fogue, at 503-947-1301 or andrea.j.fogue@oregon.gov.

/David Gerstenfeld/
David Gerstenfeld

David Gerstenfeld
Assistant Director for Unemployment Insurance

What is WORK SHARE?

Work Share is a program that offers an alternative to laying off employees. It allows employers to retain their skilled workforce during times of slowdown by reducing work hours. Employees whose hours and wages are reduced are eligible to receive a portion of their regular unemployment insurance benefits to compensate for the lost wages.

If You Have Any Questions:

1-800-237-3710 ext. 7-1649

TDD relay service - 711

Applications may be obtained upon request from:

State of Oregon Employment Department

Work Share Unit
875 Union St NE
Salem, OR 97311

www.oregon.gov/Employ/Businesses/Pages/Work-Share-Program-6.aspx

The Oregon Employment Department is an equal opportunity employer/program. Auxiliary aids and services, and alternate formats are available to individuals with disabilities and language services to individuals with limited English proficiency free of cost upon request. TTY/TDD – dial 7-1-1 toll free relay service. Access free online relay service at: www.sprintrelayonline.com

El Departamento de Empleo de Oregon es un programa que respeta la igualdad de oportunidades. Disponemos de servicios o ayudas auxiliares, formatos alternos para personas con discapacidades y asistencia de idiomas para personas con conocimiento limitado del inglés, a pedido y sin costo. Llame al 7-1-1 para asistencia gratuita TTY/TDD para personas con dificultades auditivas. Obtenga acceso gratis en Internet por medio del siguiente sitio: www.sprintrelayonline.com

State of Oregon
Employment Department
UIPUB062c (1014)

WORK SHARE

Business and the State of Oregon Working Together to Reduce Layoffs

www.Employment.Oregon.gov

State of Oregon Employment Department

Work Share

...Business and the State of Oregon Working Together to Reduce Layoffs

Advantages to Work Share

For Employers:

- Retain skilled workers
- Reduce hiring and retraining costs when business improves
- Improve employee morale

For Employees:

- Avoid financial and emotiona hardships usually associated with layoffs
- Unemployment benefits replace portion of lost wages
- Maintain benefits such as healt insurance and retirement benefit

Work Share is available to any employer with three or more employees. Employees who would normally be eligible to receive regular unemployment insurance benefit in Oregon may participate in Work Share.

The following requirements also apply:

- The normal weekly hours of work and wages are reduced by at least 20% and not more than 40%
- The employee must serve a waiting period before receiving Work Share benefits, unless a waiting period ha already been served on an existing claim
- Persons who have used all of their unemployment benefits or who hav a claim against another state can not receive Work Share benefit
- The employee must be fully available for work with the Work Share employer

How do I get started?

Employers submit a Work Share Plan Application to the Oregon Employment Department. Once approved, the employer receives a packet of unemployment insurance applications and a supply of weekly claim certifications

To receive a Work Share Plan Application, contact the Oregon Employment Department at:

1-800-237-3710 ext. 7-1649 or in Salem, (503) 947-1649

www.oregon.gov/Employ/Businesses/Pages/Work-Share-Program-6.aspx

Oregon Work Share

Business and the State of Oregon Working Together to Reduce Layoffs

Overview

- What is Work Share?
- Advantages for Employers and Employees
- Eligibility Conditions
- How to get started – Application Process
- Impact to Employer Tax Rate

Oregon Work Share

A Program Beneficial to Everyone:

Employers, Employees & the Community

What is Work Share?

A voluntary program that:

- Avoids layoffs
- Preserves jobs
- Provides a portion of Unemployment compensation
- Cushions the adverse effect of work reduction
- Maintains work skills during temporary declines in business activity

Advantages for Employers

- Retain your trained workers
- Maintain product/service levels
- Valued, trained workforce is available
- Avoid hiring/training new employees
- Maintain employee morale
- The UI Tax Rate may be lower than if employees were totally laid off

Advantages for Employees

- Continuous employment
- Maintain skills
- Work and earn wages and receive a portion of UI benefits
- Continuation of health care and retirement benefits

Eligibility Conditions

- Any employer with three or more employees
- Employees are eligible for UI benefits
- Hours are reduced at least 20% and not more than 40%
- Plans last no more than one year
- Employees must be fully available for work with their Work Share employer
- Worked continuously for six months on a full-time basis, or for one year, on a part-time basis

What's Involved in the Application Process?

Submit plan that includes:

- Number of participants
- Estimated number of layoffs averted
- Weekly hours and the percentage of reduction
- Employee notification plan
- Expected start and end date

What's Involved in the Application Process?

Certification that:

- Health and retirement benefits will continue
- Reduction is in lieu of layoffs
- Plan is consistent with Federal and State laws

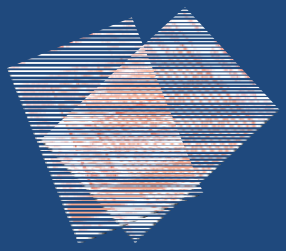
How Work Share Compares to a Layoff

- John Doe normally works 40 hours per week and earns $600 in regular pay. Under the Work Share program, John's hours are reduced by 1 day of work per week from 5 days to 4 days (a 20% reduction). How does this compare to a total layoff for John?

100% Layoff Unemployment Compensation	20% Work Reduction Short-Time Compensation
Total weekly UC benefit: $300 Hours worked: 0	4 days regular pay (80% of $600) $480 + Weekly Work Share payment $60 (20% of UC Benefit) Total weekly income: $540 Hours worked: 32

Effect of Work Share on UI Tax Rate

- Just as with layoffs Work Share affects tax rates.



Oregon Employment Department
Attn: Work Share
875 Union St NE
Salem, OR 97311
503-947-1649
800-237-3710 ext. 71649
Fax: 503-947-1888
OED_workshare@oregon.gov
OED_Tax_workshare@oregon.gov

Tax Rate Calculation

- Tax rates are based on an employer's "Benefit Ratio." Benefits charged to an account, divided by the taxable payroll, equals the Benefit Ratio.
- TAXABLE PAYROLL includes payroll for a maximum of 12 calendar quarters preceding July 1, of the current year. The first two quarters an employer is subject are not used in this computation.
- BENEFIT CHARGES are the benefits paid out and charged to the employer's account. The Benefit Charges used are for the same time period as the taxable payroll.
- BENEFIT RATIOS of eligible employers in the state are compared. The comparison is divided into groups. The tables are listed in ORS 657.462.

Iowa

BANNER

Permanent Layoffs and Re-tooling are Expensive

Consider Voluntary Shared Work Instead of Layoffs

The Voluntary Shared Work Program (VSW) is an alternative to layoffs during declines in regular business activity. Under VSW, work reductions are shared by reducing employees' work hours and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs and employers maintain their skilled workforce for when business improves. Could VSW help your business and employees?

Learn more at www.iowaworkforce.org/vsw1

Terry E. Branstad, Governor

Kim Reynolds, Lt. Governor

Teresa Wahlert, Director

IOWA WORKFORCE DEVELOPMENT
Smart. Results.

September 11, 2014

«NAME1»
«NAME2»
«ADDRESS»
«CITY», «ST» «ZIPCODE»-«PLUS4»

Account Number: «ACCOUNT»

Dear «NAME1»,

At the request of the U.S. Department of Labor, Iowa Workforce Development is participating in a two-year study of the Voluntary Shared Work (VSW) program.

VSW can be a valuable tool for retaining skilled workers during temporary business downturns. The work reduction is shared by reducing work hours instead of laying off employees. Unemployment Insurance (UI) will partially replace lost earnings so employees can stay connected to their jobs and employers can maintain their skilled workforce for when business improves. Employees receive UI benefits prorated according to the percent of their work-hour reduction. While VSW does not apply to seasonal fluctuations, it has already made a difference to dozens of businesses experiencing a temporary decline.

Through the week ending February 21, 2015, UI benefits paid under VSW will not affect employer UI tax rates because of temporary federal reimbursement of VSW benefit payments to the state of Iowa.

Enclosed are a VSW program brochure, fact sheet, and answers to frequently asked questions. If you are interested in learning more about VSW, please, visit the website at: www.iowaworkforce.org/vsw4

Sincerely,

Teresa Wahlert
Director Iowa Workforce Development

1000 E Grand Avenue • Des Moines, IA 50319 • 515-281-5387 • 800-562-4692 • www.iowaworkforce.org

Terry E. Branstad, Governor

Kim Reynolds, Lt. Governor

Teresa Wahlert, Director

November 24, 2014

Dear Employer,

At the request of the U.S. Department of Labor, Iowa Workforce Development is participating in a two-year study of the Voluntary Shared Work (VSW) program.

VSW can be a valuable tool for retaining skilled workers during temporary business downturns. The work reduction is shared by reducing work hours instead of laying off employees. Unemployment Insurance (UI) will partially replace lost earnings so employees can stay connected to their jobs and employers can maintain their skilled workforce for when business improves. Employees receive UI benefits prorated according to the percent of their work-hour reduction. While VSW does not apply to seasonal fluctuations, it has already made a difference to dozens of businesses experiencing a temporary decline.

Through the week ending February 21, 2015, UI benefits paid under VSW may not affect employer UI tax rates because of temporary federal reimbursement of VSW benefit payments to the state of Iowa.

A fact sheet is enclosed to answer frequently asked questions that involve the VSW program. If you are interested in learning more about VSW, please visit the website at: www.iowaworkforce.org/vsw3.

Sincerely,

/Teresa Wahlert/
Teresa Wahlert

Teresa Wahlert

Director Iowa Workforce Development

1000 E Grand Avenue • Des Moines, IA 50319 • 515-281-5387 • 800-562-4692 • www.iowaworkforce.org

VOLUNTARY SHARED WORK PROGRAM





The Voluntary Shared Work Program (VSW) is an alternative to layoffs during declines in regular business activity. Under VSW, work reductions are shared by reducing employees' work hours, and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs, and employers maintain their skilled workforce for when business improves.

How Does it Work?

Employers wishing to participate in the VSW program must complete a short VSW Plan Application (available at: http://www.iowaworkforce.org/ui/vsw/60-0333VSWApplication.pdf). The plan must include:

- Affected work unit designation
- Number of affected employees (minimum of five employees)
- Planned percentage of work hour reduction (must be between 20 percent and 50 percent and be the same for all affected employees)
- Estimate of the number of layoffs that would occur without VSW
- Impact (if any) on employees' fringe benefits
- Expected number of weeks reduced work will be needed
- Whether affected employees are covered by a collective bargaining agreement

IWD staff can help with completing the application. Employers must fully understand and commit to following the plan as outlined.

If affected employees are covered by a collective bargaining agreement, written approval by their representative is also required.

VSW Requirements

To participate in VSW, the employer must:

- Be current in filing quarterly UI reports
- Have paid all UI taxes owed in full
- Not be using VSW for seasonal work reductions

To be eligible to participate in VSW, affected employees must:

- Qualify for UI benefits
- Not have an existing UI claim in another state
- Be able and available to work their usual hours for the VSW employer

IOWA WORKFORCE DEVELOPMENT

VSW vs. Regular Unemployment Insurance

Currently, laid off employees can receive UI benefits for up to 26 weeks at a maximum of $511.00 per week. This amount is charged against an employer's UI tax account.

With VSW, employees receive a fraction of regular UI benefits equal to the percentage of their work hour reduction. The employer sets the duration of the plan (with agency approval), along with the percentage of the full weekly UI benefit payment the employee receives. Workers can receive a portion of their UI benefits even if hours are reduced by as little as 20 percent.

What is the Cost?

UI benefit payments for VSW and UI generally are charged to employer accounts in exactly the same way. Through the week ending February 21, 2015, the federal government will be temporarily reimbursing 92.7 percent of VSW benefit payments in the state of Iowa, and employers will be charged only for the remaining 7.3 percent. After the temporary federal reimbursement ends, employer accounts will be charged in the normal way for benefits paid under the VSW program. Employers should be aware that, just as when laid off employees collect regular UI, use of VSW may affect the employer's UI tax rate.

For more information on Voluntary Shared Work

Visit our website at www.iowaworkforce.org/vsw4

Email us at VSWClaims@IWD.Iowa.gov.

VOLUNTARY SHARED WORK PROGRAM

VSW vs. Regular Unemployment Insurance

Currently, laid off employees can receive UI benefits for up to 26 weeks at a maximum of $511.00 per week. This amount is charged against an employer's UI tax account.

With VSW, employees receive a portion of regular UI benefits equal to the percentage of their work hour reduction. For example, if there is a 40 percent reduction in work hours, the affected employees receive 40 percent of the weekly UI benefit payment they would receive if they were laid off for a full week. The employer sets the duration of the plan (with agency approval), along with the percentage of the work week reduction in hours. Workers can receive a portion of their UI benefits even if hours are reduced by as little as 20 percent.

What is the Cost?

UI benefit payments for VSW and UI generally are charged to employer accounts in exactly the same way. Employers should be aware that, just as when laid off employees collect regular UI, use of VSW may affect the employer's UI tax rate.

For more information on Voluntary Shared Work

Visit our website at
www.iowaworkforce.org/vsw4

Email us at VSWClaims@IWD.Iowa.gov.

The Voluntary Shared Work Program (VSW) is an alternative to layoffs during declines in regular business activity. Under VSW, work reductions are shared by reducing employees' work hours, and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs, and employers maintain their valued employees for when business improves.

How Does it Work?

Employers wishing to participate in the VSW program must complete a short VSW Plan Application (available at: http://www.iowaworkforce.org/ui/vsw/60-0333VSWApplication.pdf).

The plan must include:

- Affected work unit designation
- Number of affected employees (minimum of five employees)
- Planned percentage of work hour reduction (must be between 20 percent and 50 percent and be the same for all employees in the same work unit)
- Estimate of the number of layoffs that would occur without VSW
- Impact (if any) on employees' fringe benefits
- Expected number of weeks reduced work will be needed
- Whether affected employees are covered by a collective bargaining agreement

IWD staff can help with completing the application. Employers must fully understand and commit to following the plan as outlined.

If affected employees are covered by a collective bargaining agreement, written approval by their representative is also required.

VSW Requirements

To participate in VSW, the employer must:

- Be current in filing quarterly UI reports
- Have paid all UI taxes owed in full
- Not be using VSW for seasonal work reductions

To be eligible to participate in VSW, affected employees must:

- Qualify for UI benefits
- Not have an existing UI claim in another state
- Be able and available to work their hours for the VSW employer

WORKFORCE DEVELOPMENT
Smart. Results.

Final Report on the Demonstration and Evaluation of the STC Program In Iowa and Oregon

VSW vs. Regular Unemployment Insurance

Currently, laid-off employees can receive UI benefits for up to 26 weeks at a maximum of $511 per week. This amount is charged against an employer's UI tax account.

With VSW, employees receive a fraction of regular UI benefits equal to the percentage of their work hour reduction. The employer sets the duration of the plan (with agency approval), along with the percentage of the full weekly UI benefit payment the employee receives. Workers can receive a portion of their UI benefits even if hours are reduced by as little as 20 percent.

VSW Requirements

To participate in VSW, the employer must submit a short application that:

- Provides an estimate of the number of layoffs that would occur without VSW
- Lists the percentage of reduction in affected employees' work hours (must be between 20 percent and 50 percent and be the same for all affected employees)
- Certifies that the reduction in hours is in lieu of layoffs
- Includes written approval from the affected employees' collective bargaining representative (if applicable)

VOLUNTARY SHARED WORK PROGRAM






YOUR
Alternative to Layoffs

Keeping all your skilled workers and controlling your unemployment costs

A VSW plan must affect at least five employees. VSW cannot be used for seasonal work reductions. A participating employer's quarterly UI reports must be current and UI taxes paid in full.

To be eligible to participate in VSW, affected employees must:

- Qualify for UI benefits
- Not have an existing UI claim in another state
- Be able and available to work their usual hours of work for the VSW employer

For more information on Voluntary Shared Work
Visit our website at www.iowaworkforce.org/vsw4
Or email VSWClaims@IWD.Iowa.gov.

Westat®

IOWA® WORKFORCE DEVELOPMENT

The Voluntary Shared Work Program (VSW) is an alternative to layoffs during declines in regular business activity. Under VSW, work reductions are shared by reducing employees' work hours, and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs and employers maintain their skilled workforce for when business improves.

Employer Advantages

Under VSW, employers can:

- Maintain productivity and quality levels (because the same experienced employees are doing the same work)
- Keep the ability to expand operations quickly when business conditions improve
- Reduce training costs by keeping the workforce intact
- Avoid costs related to hiring and reassignments
- Avoid transfers, demotions, and tenure based layoffs

Employee Advantages

With VSW, employees can:

- Keep job skills sharp
- Maintain a higher family income than with UI benefits alone
- Keep health insurance and retirement benefits
- Continue building job tenure






How VSW Affects Employer UI Taxes

UI benefit payments for VSW and UI generally are charged to employer accounts in exactly the same way. Through the week ending February 21, 2015, the federal government will be temporarily reimbursing 92.7 percent of VSW benefit payments in the state of Iowa and employers will be charged only for the remaining 7.3 percent. After the temporary federal reimbursement ends, employer accounts will be charged in the normal way for benefits paid under the VSW program. Employers should be aware that, just as when laid off employees collect regular UI, use of VSW may affect the employer's UI tax rate.

A VSW employer may provide a training program for affected employees to attend during the regular hours not worked. Iowa Workforce Development (IWD) will relieve the employer of UI benefit charges if the training program:

- Is approved by IWD
- Increases the employee's skills
- Reduces the potential for future periods of unemployment

Temporary Special Tax Treatment of Voluntary Shared Work

Through the week of February 21, 2015, employer accounts will only be charged 7.3 percent of the VSW benefit paid because of a temporary federal reimbursement of VSW benefit payments to the State of Iowa. This will reduce the chances that VSW program use during the period will affect UI tax rates.

Final Report on the Demonstration and Evaluation of the STC Program in Iowa and Oregon

Westat

VSW vs. Regular Unemployment Insurance

Currently, laid-off employees can receive UI benefits for up to 26 weeks at a maximum of $511 per week. This amount is charged against an employer's UI tax account.

With VSW, employees receive a portion of regular UI benefits equal to the percentage of their work hour reduction. The employer sets the duration of the plan (with agency approval), along with the percentage of the work week reduction in hours. Workers can receive a portion of their UI benefits even if hours are reduced by as little as 20 percent.

VSW Requirements

To participate in VSW, the employer must submit a short application that:

- Provides an estimate of the number of layoffs that would occur without VSW
- Lists the percentage of reduction in affected employees' work hours (must be between 20 percent and 50 percent and be the same for all employees in the same work unit)
- Certifies that the reduction in hours is in lieu of layoffs
- Includes written approval from the affected employees' collective bargaining representative (if applicable)

VOLUNTARY SHARED WORK PROGRAM

YOUR
Alternative to Layoffs

Keeping all your skilled workers and controlling your unemployment costs

A VSW plan must affect at least five employees. VSW cannot be used for seasonal work reductions. A participating employer's quarterly UI reports must be current and UI taxes paid in full.

To be eligible to participate in VSW, affected employees must:

- Qualify for UI benefits
- Not have an existing UI claim in another state
- Be able and available to work their hours of work for the VSW employer

For more information on Voluntary Shared Work
Visit our website at www.iowaworkforce.org/vsw4
Or email VSWClaims@IWD.Iowa.gov.

WORKFORCE DEVELOPMENT
Smart. Results.

The Voluntary Shared Work Program (VSW) is an alternative to layoffs during declines in regular business activity. Under VSW, work reductions are shared by reducing employees' work hours, and Unemployment Insurance (UI) partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs and employers maintain their valued employees for when business improves.

Advantages to Employers

Under VSW, employers can:

- Maintain productivity and quality levels (because the same experienced employees are doing the same work)
- Keep the ability to expand operations quickly when business conditions improve
- Reduce training costs by keeping the workforce intact
- Avoid costs related to hiring and reassignments
- Avoid transfers, demotions, and tenure based layoffs

Advantages to Employees

With VSW, employees can:

- Keep job skills sharp
- Maintain a higher family income than with UI benefits alone
- Keep health insurance and retirement benefits
- Continue building job tenure
- Benefit from partial replacement of lost earnings

How VSW Affects Employer UI Taxes

UI benefit payments for VSW and UI generally are charged to employer accounts in exactly the same way. Employers should be aware that, just as when laid off employees collect regular UI, use of VSW may affect the employer's UI tax rate.

A VSW employer may provide a training program for affected employees to attend during the regular hours worked. Iowa Workforce Development (IWD) will relieve the employer of UI benefit charges if the training program:

- Is approved by IWD
- Increases employees' skills
- Reduces the potential for future periods of unemployment

Employer Testimonials

"By using VSW, we keep our trained employees. Our employees keep their job and benefits, and so are assured that they will not be in a deep financial hole as a result of layoff."

– HARDI NORTH AMERICA

"We were pleasantly surprised by how easy it was to move everyone onto the VSW program. If we were in that situation again, we would use VSW."

– PEERLESS SUPPLY, INC.

"Keeping our long-time employees was the main factor behind our decision to use VSW. We have staff with 5 to 20 or more years with the company and we invest heavily in their training. You cannot replace that kind of experience. We would use VSW again, and we recommend it to other businesses."

– STAR EQUIPMENT, LTD.

State VSW program staff are available for an onsite visit to assist employers with the application process.

Westat

Appendix C

Data Collection Instrumentation

Materials for Conducting the Employer Survey

Terry E. Branstad, Governor
Kim Reynolds, Lt. Governor
Beth Townsend, Director

IOWA WORKFORCE DEVELOPMENT
Smart. Results.

- Long Web Mailing 1 (#10 envelope) -

[Barcode] [ID]
[Fname] [Lname]
[OrgName]
[Addr1], [Addr2]
[City], [St] [Zip]

[Date]

Dear [Fname] [Lname]:

Iowa Workforce Development (IWD) administers the Voluntary Shared Work (VSW) program, an alternative to layoffs during declines in business activities. Under VSW, work hours are reduced 20 to 50 percent and employees receive partial unemployment insurance benefits to cover reduced earnings. To inform us on how to better serve Iowa employers through the VSW program, I am asking you to complete a short 12-minute survey about your awareness of, experience with, and views about the VSW program.

For the survey to provide reliable information that will help IWD to improve its administration of the VSW program for Iowa employers, it is important that we receive input from your business. Your business was selected to participate in the survey because of your previous inquiry about the VSW program.

The survey is being administered by Westat, a social science research firm working with IWD under a contract funded by the U.S. Department of Labor. The Westat team worked with IWD to conduct the outreach project and will analyze the survey results. Your participation is voluntary and your answers will be kept private. You will never be identified in any report based on the survey. The results will help us understanding the perceptions and experience of employers, including how you first learned about the program, the application process, setting up a VSW plan, and using it.

Please go to the following secure website and enter your personal identification number (PIN) to begin the survey.

Survey website: ia.stcsurvey.org

Your PIN: [PIN]

The "Frequently Asked Questions" on the back of this letter provide more details. If you have other questions or unable to complete the web survey please contact the Survey Help Desk by phone 1-855-558-6573 or send an email to support@stcsurvey.org.

I encourage you to take a few minutes to complete this survey. Your response will help us improve our employer outreach efforts and administration of the VSW program.

Sincerely,

/ Ryan West /
Ryan West

Ryan West
Division Administrator
Unemployment Insurance Division
Iowa Workforce Development

Frequently Asked Questions

Who is conducting the survey?

This survey is being conducted by Westat on behalf of the Iowa Workforce Development agency and the U.S. Department of Labor. The U.S. Office of Management and Budget approved this research (OMB Control No. 1291-0005, expiration date of 10/31/2018).

What is the purpose of the survey?

The purpose of this survey is to gather information to provide a better understanding of Iowa employers' familiarity with Iowa's Voluntary Shared Work (VSW) program, their views about the program, and their experiences. The VSW program is an unemployment insurance program that provides employers and their workers with an alternative to layoffs by reducing employees' hours and partially replacing lost earnings with Unemployment Insurance. You might also know of it as "work sharing" or "short-time compensation."

Why should I participate?

Your participation in the study is important to provide an accurate estimate of how familiar Iowa employers are with the program, and to reflect their views about the program. We estimate that the survey will take about 12 minutes to complete. Participation is voluntary and will not affect your firm's current or future unemployment insurance tax rate or eligibility for any public-funded program.

Will my answers be kept private?

Yes. Your answers will be kept private to the extent permitted by law and you and your business will never be identified in any report based on the survey. Survey responses will be analyzed together with state unemployment insurance administrative information to get a full understanding of employer's experiences and perspectives.

Who to contact about the survey?

If you have questions about the survey, you can call the Survey Help Desk line at 1-855-558-6573 or send an email to support@stcsurvey.org. Survey Help Desk representatives are available Monday - Friday 10:00 a.m. - 7:00 p.m. EDT.

Who is Westat?

Westat is a national research firm located in Maryland. Westat is an internationally known research and statistical survey organization. Westat manages the technical aspects of the web survey operations and can help you with any computer or technical problems. You can get more information about Westat by visiting their website at www.westat.com.

Terry E. Branstad, Governor
Kim Reynolds, Lt. Governor
Beth Townsend, Director

IOWA WORKFORCE DEVELOPMENT

Smart. Results.

- Short Paper Mailing 1 (9x12 envelope) -

[Barcode] [ID]
[Fname] [Lname]
[OrgName]
[Addr1], [Addr2]
[City], [St] [Zip]

[Date]

Dear [Fname] [Lname]:

Iowa Workforce Development (IWD) administers unemployment insurance programs. As part of our ongoing effort to improve services, we are asking you to complete a short survey (only three questions) about employer awareness of a particular IWD program. Westat, a research firm working with IWD under contract with the U.S. Department of Labor, is conducting the survey.

Your response is extremely valuable to us. It will ensure that all Iowa employers are represented in the survey and the information provided will help us improve administration of programs. Your participation is voluntary and your answers will remain private. No individual or firm will be identified in any report based on the survey.

I encourage you to take two minutes to complete the enclosed survey and return it in the provided business reply envelope to Westat, 1600 Research Blvd, RW 2634, Rockville, MD 20850. If you have any questions please contact the Survey Help Desk by phone at 1-855-558-6573 or send an email to support@stcsurvey.org.

Thank you for considering this request. Your response will help us determine the success of our employer outreach efforts.

Sincerely,

/ Ryan West /
Ryan West

Division Administrator
Unemployment Insurance Division
Iowa Workforce Development

Frequently Asked Questions

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This survey is being conducted by Westat on behalf of the Iowa Workforce Development agency and the U.S. Department of Labor. The U.S. Office of Management and Budget approved this research (OMB Control No. 1291-0005, expiration date of 10/31/2018).

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Terry E. Branstad, Governor
Kim Reynolds, Lt. Governor
Beth Townsend, Director

IOWA WORKFORCE DEVELOPMENT

Smart. Results.

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[Fname] [Lname]
[OrgName]
[Addr1], [Addr2]
[City], [St] [Zip]

[Date]

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Survey website: ia.stcsurvey.org

Your PIN: [PIN]

The "Frequently Asked Questions" on the back of this letter provide more details about the survey. If you have other questions or are unable to complete the web survey please contact the Survey Help Desk by phone 1-855-558-6573 or send an email to support@stcsurvey.org.

I encourage you to take two minutes to complete this survey. Your response will help us determine the success of our employer outreach efforts.

Sincerely,

/ Ryan West /
Ryan West

Division Administrator
Unemployment Insurance Division
Iowa Workforce Development

Frequently Asked Questions

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This survey is being conducted by Westat on behalf of the Iowa Workforce Development agency and the U.S. Department of Labor. The U.S. Office of Management and Budget approved this research (OMB Control No. 1291-0005, expiration date of 10/31/2018).

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Who is Westat?

Westat is a national research firm located in Maryland. Westat is an internationally known research and statistical survey organization. Westat manages the technical aspects of the web survey operations and can help you with any computer or technical problems. You can get more information about Westat by visiting their website at www.westat.com.

Banner Image & Title

OMB Control Number: 1291-0005

Expiration Date: 10/31/2018

Welcome to the Survey of State Employers about the Voluntary Shared Work and Work Share Programs. This survey is being conducted by Westat on behalf of the Iowa Workforce Development Agency, Oregon Employment Department, and the U.S. Department of Labor to provide a better understanding of employers' familiarity with Voluntary Shared Work and Work Share programs.

Questions or concerns? Call the Survey Help Desk line at 1-855-558-6573 or send an email to support@stcsurvey.org. Survey Help Desk representatives are available Monday - Friday 10:00 a.m. - 7:00 p.m. EDT.

Start Survey

Please enter the unique PIN included in your letter:

BEGIN

PAPERWORK REDUCTION ACT INFORMATION: This information is collected according to the clearance requirements of section 3507 of the Paperwork Reduction Act of 1995. No persons are required to respond to a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. The valid OMB control number for this information collection is 1291-0005. The time required to complete this information collection is estimated to average 12 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. A response to this survey is voluntary.

OMB Control Number: 1291-0005
Expiration Date: 10/31/2018

IOWA
WORKFORCE
DEVELOPMENT

Survey of Iowa Employers on Their Awareness of the Voluntary Shared Work Program

PAPERWORK REDUCTION ACT INFORMATION: This information is collected according to the clearance requirements of section 3507 of the Paperwork Reduction Act of 1995. No persons are required to respond to a collection of information unless it displays a valid Office of Management and Budget (OMB) control number. The valid OMB control number for this information collection is 1291-0005. The time required to complete this information collection is estimated to average 2 minutes per response, including the time to review instructions, search existing data resources, gather the data needed, and complete and review the information collection. A response to this survey is voluntary.

1234567-9

SURVEY INSTRUCTIONS

Please use a black or blue pen to complete this form.

Mark ☒ to indicate your answer.

If you want to change your answer, darken the box ▩ on the wrong answer and mark your new answer.

Welcome to the Survey of Iowa Employers about the Voluntary Shared Work program. This survey is being conducted by Westat on behalf of the Iowa Workforce Development and the U.S. Department of Labor to provide a better understanding of Iowa employers' familiarity with Iowa's Voluntary Shared Work program.

1 **Have you heard of Iowa's Voluntary Shared Work program available through Iowa Workforce Development? This program is sometimes known as "shared work," "work sharing" or "short-time compensation."**

- ☐ Yes, have heard of it → Go to question 2
- ☐ No → Go to End

2 **When did you first learn about the Voluntary Shared Work program? If you can't remember exactly, your best estimate is acceptable**.

- ☐ The letter for this survey is the first I heard of it
- ☐ After September 2015 but before the letter for the survey
- ☐ Between September 2014 and September 2015
- ☐ Before September 2014

3 **How did you hear about the Voluntary Shared Work program?**

Choose all that apply

- ☐ From one or more of our employees
- ☐ From organized labor
- ☐ From another employer
- ☐ Through a trade association
- ☐ From advertisement or public service announcements
- ☐ By email from Iowa Workforce Development
- ☐ By mail from Iowa Workforce Development
- ☐ On the Iowa Workforce Development website
- ☐ From an Iowa Workforce Development business representative
- ☐ From an Iowa Workforce Development Unemployment Insurance Services staff person
- ☐ From an Iowa Workforce Development Rapid Response Team
- ☐ From the U.S. Department of Labor
- ☐ Don't remember
- ☐ Other Please specify how you heard about the program

*Please specify*_____

_____

End **Please tell us who you are**

Name of person completing the survey:

_____

Name of company:

_____

THANK YOU!

You can obtain more information about Voluntary Shared Work by visiting the Iowa Workforce Development website at www.iowaworkforce.org/vsw4

Please return your completed questionnaire with the business reply envelope provided to:

Westat
1600 Research Blvd. RW. 2634
Rockville MD, 20850

12345678-9

Survey of Iowa Employers about the Voluntary Shared Work Program

[Survey will be administered online; CATI survey will be used for follow-up]

A Federal agency may not conduct or sponsor, and a person is not required to respond to this collection of information, unless it displays a currently valid OMB control number. Your obligation to reply to this survey is voluntary. The public burden for this survey is estimated to be 12 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the necessary data, and completing and reviewing the collection of information. Send comments concerning this burden estimate or any other aspect of this collection of information to the U.S. Department of Labor, Employment and Training Administration, Room XXXX, 200 Constitution Ave., Washington, DC.

Introduction

Who is conducting the survey?

This survey is being conducted by Westat on behalf of the Iowa Workforce Development agency and the U.S. Department of Labor. The U.S. Office of Management and Budget approved this research (OMB Control No. XXX, expiration date of XXX).

What is the purpose of the survey?

The purpose of this survey is to gather information to provide a better understanding of Iowa employers' familiarity with Iowa's Voluntary Shared Work (VSW) program, their views about the program, and their experiences. The VSW program is an unemployment insurance program that provides employers and their workers with an alternative to layoffs by reducing employees' hours and partially replacing lost earnings with Unemployment Insurance. You might also know of it as "work sharing" or "short-time compensation."

Participation and privacy

Your participation in the study is important to provide an accurate estimate of how familiar Iowa employers are with the program and to reflect their views about the program. We estimate that the survey will take about 10 minutes to complete. Participation is voluntary and will not affect your firm's current or future unemployment insurance tax rate or eligibility for any public-funded program. Survey responses will be analyzed together with state unemployment insurance administrative information to get a fuller understanding of employer's experiences and perspectives. Your answers will be kept private to the extent permitted by law. You and your business will never be identified in any report based on the survey.

Who to call if you have questions about the survey

[Westat contact information here]

SECTION A—Awareness of VSW

1. Have you heard of Iowa's Voluntary Shared Work program available through Iowa Workforce Development? This program is sometimes known as "shared work," "work sharing" or "short-time compensation."

   - ○ Yes, have heard of it 1 GO TO QUESTION 2
   - ○ No .....2 GO TO EXIT

2. When did you first learn about the Voluntary Shared Work program? If you can't remember exactly, your best estimate is acceptable.

   - ○ The letter for this survey is the first I heard of it
   - ○ After September 2015 but before the letter for the survey
   - ○ Between September 2014 and September 2015
   - ○ Before September 2014

3. How did you hear about the Voluntary Shared Work program? (CHECK ALL THAT APPLY)

   - ☐ From one or more of our employees 01
   - ☐ From organized labor 02
   - ☐ From another employer 03
   - ☐ Through a trade association 04
   - ☐ From advertisement or public service announcements..... 05
   - ☐ By email from Iowa Workforce Development..... 06
   - ☐ By mail from Iowa Workforce Development..... 07
   - ☐ On the Iowa Workforce Development website..... 08
   - ☐ From an Iowa Workforce Development business representative 09
   - ☐ From an Iowa Workforce Development Unemployment Insurance Services staff person..... 10
   - ☐ From an Iowa Workforce Development Rapid Response Team..... 11
   - ☐ From the U.S. Department of Labor 12
   - ☐ Don't remember 13
   - ☐ Other..... 14
     Please specify _____

GO TO QUESTION 4

Exit for Employers not Aware of Voluntary Shared Work Program

THANK YOU FOR COMPLETING THIS SURVEY. PLEASE TELL US WHO YOU ARE:

Name of person completing the survey: _____

Name of company: _____

Voluntary Shared Work is a program in Iowa that offers employers an alternative to layoff during declines in regular business activity. Under Voluntary Share Work, work reductions are shared by reducing employees' work hours, and Unemployment Insurance partially replaces lost earnings. By avoiding layoffs, employees stay connected to their jobs and employers maintain their skilled workforce for when business improves.

You can obtain more information about Voluntary Shared Work by visiting the Iowa Workforce Development website at www.iowaworkforce.org/vsw4

PLEASE CLICK HERE TO EXIT THE SURVEY.

SECTION B—Ever Contact Iowa Workforce Development about VSW

4. Did your business ever contact Iowa Workforce Development about establishing a Voluntary Shared Work Plan in Iowa?

   - Yes..... 1 GO TO QUESTION 5
   - No ..... 2 GO TO SECTION D

5. In what year did your business first contact Iowa Workforce Development about establishing a Voluntary Shared Work Plan in Iowa?

   __ __ __ __ (YYYY)

6. Did your business submit a Voluntary Shared Work application to Iowa Workforce Development?

   - Yes.....1GO TO QUESTION 7
   - No .....2GO TO QUESTION 9

7. How important were the following reasons to your business' decision to apply to establish a Voluntary Shared Work plan? (CHECK IMPORTANCE FOR EACH STATED REASON)

Reason	**Very important**	**Somewhat important**	**Not important**
Business survival in temporary downturn			
Maintain employee morale			
Meet needs of employees			
Retain valued workers			
Retain skilled workers			
Lower UI tax burden compared to layoffs			
Other (please specify)_____ _____			

8. Was your firm's interest in Voluntary Shared Work affected by the government program that provided temporary not charging of most VSW benefits to your firm's UI tax account during the latter part of 2013 and early part of 2014?

- o Not aware of the program for the temporary not charging of benefits
- o Not available at time of our use of Voluntary Shared Work
- o Interest in VSW was not affected by not charging
- o Not charging was a factor, but not the main factor
- o Not charging was the main reason for interest

GO TO SECTION C

9. What were the reasons why your business did not apply to establish a Voluntary Shared Work plan? (CHECK ALL THAT APPLY)

- ☐ Have not had a need to reduce workforce levels 1
- ☐ Needed to reduce hours by more than 50 percent..... 2
- ☐ Paperwork requirements too burdensome 3
- ☐ Requirement to maintain employee benefits..... 4
- ☐ Potential impact on our UI tax rate 5
- ☐ Requirement to obtain employees' agreement 6
- ☐ Requirement to obtain union(s) agreement 7
- ☐ Delinquent on UI taxes..... 8
- ☐ Did not have enough employees to qualify..... 9
- ☐ Other..... 10

  Please specify _____

GO TO SECTION D

SECTION C—VSW Plan Approval

10. Has your business ever had a Voluntary Shared Work Plan approved in Iowa?

- ○ Yes..... 1 GO TO QUESTION 12
- ○ No ..... 2 GO TO QUESTION 11

11. Why was your Voluntary Shared Work Plan not approved in Iowa?

- ☐ Owed UI taxes to Iowa 1
- ☐ VSW not available for seasonal work reductions 2
- ☐ Unable to certify reduction of hours was in lieu of layoffs 3
- ☐ Could not provide estimate of number of layoffs that would occur without VSW..... 4
- ☐ Affected employees' collective bargaining representative did not provide written approval..... 5
- ☐ Other..... 6

  Please specify _____

GO TO SECTION D

12. When did your business first have a Voluntary Shared Work Plan approved?

__ __ __ __ __ __ (MMYYYY)

13. How many employees were included in your most recent Voluntary Shared Work Plan at the time when it was first approved?

__ __ , __ __ __ employees

14. Has your business used the approved Voluntary Shared Work Plan yet?

- ○ Yes..... 1 GO TO QUESTION 15
- ○ No ..... 2 GO TO QUESTION 19

15. When did your business first reduce employees' hours under your approved Voluntary Shared Work Plan?

__ __ __ __ __ __ (MMYYYY)

16. Would you say the Voluntary Shared Work program helped your business survive a business downturn?

- o Yes, very helpful 1
- o Yes, somewhat helpful 2
- o No, not at all helpful 3

17. Would you say the Voluntary Shared Work program helped your business retain skilled or valued workers?

- o Yes, very helpful 1
- o Yes, somewhat helpful 2
- o No, not at all helpful 3

18. What was the general attitude of your employees covered by your Voluntary Shared Work Plan about the program?

- o Most were positive about it 1
- o Most were indifferent 2
- o Most did not like it 3

GO TO QUESTION 20

19. What are your reasons for not yet having reduced employees' hours under your approved Voluntary Shared Work Plan? (CHECK ALL THAT APPLY)

- □ Have not had a need to reduce workforce levels 1
- □ Concern about paperwork requirements 2
- □ Concern about potential impact on our UI tax rate..... 3
- □ Reduced demand turned out to be too severe to support shared work..... 4
- □ Other..... 5
  Please specify _____

20. Would you consider applying to establish a Voluntary Shared Work Plan again?

- o Yes..... 1
- o No 2

21. Would you recommend the Voluntary Shared Work program to other employers?

- o Yes..... 1
- o No 2

22. We would like to know the cost to your business of developing the Voluntary Share Work plan. What is your estimate of the number of staff hours it took to develop your Voluntary Shared Work Plan?

__ __ Hours to develop plan

23. What is the average hourly rate of pay (with benefits) for the staff member(s) who developed the plan? If you do not know exactly, your best estimate is acceptable.

$__ __.__ __/hour

IF QUESTION 14 = NO, THEN GO TO SECTION D

24. What is your estimate of the number of hours per week required for your business to report on employees' hours to Iowa Workforce Development for the payment of Shared Work UI benefits?

__ __ Hours per week to report employees' hours

25. What is the average hourly rate of pay (including benefits) for the staff member(s) who report(s) workers' hours? If you do not know exactly, your best estimate is acceptable.

$__ __.__ __/hour

26. How many Shared Work employees voluntarily quit their jobs after the start of your firm's most recent use of the Voluntary Shared Work program? (ENTER ZERO IF NO QUITS)

____ Number of Shared Work employees who voluntarily left the company after start of VSW program

27. How many Shared Work employees were laid off after the start of your firm's most recent use of the Voluntary Shared Work program? (ENTER ZERO IF NO LAYOFFS)

____ Number of Shared Work employees laid-off after start of VSW program

GO TO SECTION D

SECTION D—Employer Background

28. Approximately how long has your business operated in the state of Iowa?

__ __ __ years

29. About how many Iowa employees were on your business's payroll as of the most recent payroll period?

- ○ Less than 5 employees
- ○ 5 to 19 employees
- ○ 20 to 49 employees
- ○ 50 to 99 employees
- ○ 100 to 299 employees
- ○ 300 to 499 employees
- ○ 500 to 999 employees
- ○ 1,000 or more employees

30. At any point during the past 24 months, did your business experience a need to reduce its workforce due to reduced demand for its products or services?

- ○ Yes ..... 1 GO TO QUESTION 32
- ○ No ..... 2 GO TO QUESTION 33

31. In the past 24 months, did your business ever lay off Iowa workers due to reduced demand for your products or services?

- ○ Yes.....1
- ○ No 2

32. In 2015, for your Iowa employees, which of these employee benefits did you offer and cover at least a part of the cost? (CHECK ALL THAT APPLY)

- ☐ Health insurance 1
- ☐ Retirement plan including 401(k), Keogh, etc. 2
- ☐ Profit sharing and/or stock options 3
- ☐ Paid holidays, vacation, and/or sick leave 4
- ☐ Tuition assistance and/or reimbursement 5
- ☐ None of the above 6

33. What percentage of eligible Iowa employees participated in the health plan/plans offered by your business in 2015?

- o Our business did not offer any health plan 1
- o None 2
- o Less than 25% 3
- o 25-49% 4
- o 50-74% 5
- o 75-100% 6

34. What percentage of eligible Iowa employees participated in the retirement plan/plans offered by your business in 2015?

- o Our business did not offer any retirement plan 1
- o None 2
- o Less than 25% 3
- o 25-49% 4
- o 50-74% 5
- o 75-100% 6

THANK YOU FOR COMPLETING THIS SURVEY. PLEASE TELL US WHO YOU ARE:

Name of person completing the survey: _____

Name of company: _____

PLEASE CLICK HERE TO EXIT THE SURVEY.

Materials for Conducting the Implementation Study

Implementation Study Instruments

UI-Work Share Staff Interview Guide: RCT Iowa and Oregon and QED Outreach Oregon[17]

INTRODUCTION: Introduce interviewers.

Your responses are private. Only those persons present and a few of the research team's staff will have access to the notes and we have signed a privacy confirming that the responses will not be disclosed with personal identifiers and that information for reports and publications will combine answers so individual identities are protected. In order to ensure the accuracy of the notes, we would like your permission to tape-record this interview. If you agree, please let us know if at any time you want us to turn off the recorder either for a portion or the remainder of the interview.

QUESTION: Please describe any changes to your role at [state agency] and with the Work Share program in the last year.

OBJECTIVES/CONCEPTS & QUESTIONS	Leadership	Management	Technical	Outreach
1. Work-share Program Background: Political and Economic Context				
1.1 Please describe any changes in the [State name] political climate toward Work Share (WS) in the last year (at various levels-legislature, agency, unions, etc.)?	✓	✓		
1.2 Please describe the economic climate in [State name] in the past year and any ways it has affected the WS program? Projections for economic climate and effects?	✓	✓		✓
1.3 Now, after more than a year after the new WS legislation, were there changes in the program that affected your administration of the program or employer participation?	✓	✓	✓	✓

[17] Oregon refers to its STC program as Work Share (WS). Iowa refers to its STC program as Voluntary Shared Work (VSW) and the Guides will be tailored accordingly at the time of the interviews. The four last columns in the table below indicate the types of state agency staff to be considered for interviews and the checkmarks indicate questions for those types of staff members.

OBJECTIVES/CONCEPTS & QUESTIONS		Leadership	Management	Technical	Outreach
2. Fidelity and Monitoring: Features and Operations— Barriers, Solutions, and Promising Practices					
2.1	Does the agency monitor employer compliance with any of the WS requirements --providing health and other job benefits, restrictions on a secondary part-time job, availability for training?	✓	✓	✓	✓
2.2	What questions and challenges have arisen about changes in the UI tax rate? To what extent has this impacted participation? Suggestions?	✓	✓	✓	✓
2.3	Overall, how did the demonstration go from your perspective? Benefits? Challenges? Best Practices? Lessons Learned?	✓	✓	✓	✓
2.4	What have been the challenges and lessons learned from the demonstration trainings for the business representatives and other staff who have direct contact with employers?		✓	✓	✓
2.5	In terms of responding to inquiries and providing assistance to employers (e.g., phone or in-person, developing a plan, entering hours of employees, submitting claims), what were the major questions asked? What key points do you convey? What barriers to usage emerge? Solutions?		✓	✓	✓
2.6	Regarding the outreach efforts for the demonstration, describe challenges and solutions to startup, ongoing implementation, and monitoring of these efforts.	✓	✓	✓	✓
2.7	How easy has it been to compile and report the participant tracking information (logs of queries, contacts, analytics on websites, events)? Does the reporting adequately capture the major activities, milestones, and responses? Do you have any suggestions to improve the reporting?		✓	✓	✓
2.8	How easy has it been to track and report the time spent on various demonstration activities and WS program? Do you have any suggestions to improve the reporting?		✓	✓	✓
2.9	How have the UI data retrieval tasks for the Study Team gone so far? Suggestions for improvement?		✓	✓	
2.10	Did the time and cost of running the demonstration present a challenge to the Agency [or your unit]?	✓	✓	✓	✓
2.11	Do you foresee a continuation of efforts along the lines of the demonstration after the end of the project (specify aspects)? Why or why not?	✓	✓	✓	✓

OBJECTIVES/CONCEPTS & QUESTIONS		Leadership	Management	Technical	Outreach
3. Reactions and Feedback from Employers and Employees					
3.1	What is the most common type of industry/firm that you have been in touch with about WS? How would you characterize the type of firm that uses WS the most?		✓	✓	✓
3.2	What if any feedback did you receive from employers regarding the specifics of the various outreach and assistance interventions of the demonstration (e.g., emails, mailers, banner, phone calls, events)?[1]		✓	✓	✓
3.3	In your efforts to assist employers after receiving intervention materials, what feedback and issues did employers most commonly bring up?		✓	✓	✓
3.4	What important factors were mentioned by employers that led them to (or not to) participate (e.g., bad economy, fear of the competition, retaining valued employees, UI tax rate, benefits)? Did these change once the employer joined the program? Any feedback or suggestions from employers on program features or operational improvements?		✓	✓	✓
3.5	Regarding the change in reimbursement policy (tailor for IA and OR), was this a major factor in employer decisions to participate for first time or repeat users of WS? What kinds of firms were most concerned or affected?	✓	✓	✓	✓
3.6	How have the unions reacted?	✓	✓		✓
3.7	When and how do employers communicate with employees about applying to the Work Share program? Do you receive any direct or indirect feedback from employees? Do you have a sense of employee reactions?		✓	✓	✓
4. Perceived Impact and Sustainability of Intervention					
4.1	What, if anything, do you think was most successful or worthwhile about the demonstration? Benefits? Disadvantages (time/costs)? Suggestions?	✓	✓	✓	✓
4.2	Regarding the Federal STC grant [State name] received, what aspects of the demonstration are most helpful in providing lessons for the grant?	✓	✓		

OBJECTIVES/CONCEPTS & QUESTIONS		Leadership	Management	Technical	Outreach
5. Recommendations for Program, Operations Promising Practices					
5.1	What, if any, improvements would you like to see to the WS program (features and operations)?	✓	✓	✓	✓
5.2	Do you have a method for calculating or keeping a record of the number of jobs saved by the program? If no, can you envision how this could be done?	✓	✓	✓	
5.3	What do you think could be done to increase employer participation?	✓	✓	✓	✓
5.4	What solutions/promising practices would you like to see to address the barriers to implementation or participation? Which would you recommend to other States?	✓	✓	✓	✓
5.5	Any other thoughts about the Demonstration or the WS program?	✓	✓	✓	✓
5.6	In addition to the staff that we are planning to see (enumerate), are there any significant state stakeholders involved in the program or demonstration that we have not identified? Should we try to see or talk with them?	✓	✓	✓	✓
Thank you! We really appreciate your time and effort.					

Work Share[18] Employer Interview Guide

OBJECTIVES/CONCEPTS & QUESTIONS		User	Non-user
INTRODUCTION: [Introduce interviewers] Your responses are private. Only those persons present and a few of the research team's staff will have access to the notes and we have signed a privacy agreement confirming that the responses will not be disclosed with personal identifiers. Information for reports and publications will combine answers so individual identities are protected. In order to ensure the accuracy of the notes, we would like your permission to tape-record this interview. If you agree, please let us know if at any time you want us to turn of the recorder either for a portion or the remainder of the interview.		✓	✓
1.	**Firm Characteristics, Economic Climate, Level of Usage, and Future Intensions for Use**		
	Name of Firm Address Respondent's Name and Title Phone Respondent's email Nature of Business Number of employees User/Not User: History of use (dates; extent of use)	✓	✓
1.1	We understand [nature of business] about your firm.[2] Please describe what [name of firm] does, your role in firm and what else you think might be helpful for us to know.	✓	✓
2.	**Experience with Demonstration and Program: Assistance, and Enrolment**		
2.1	Have you heard of the Work Share Program?		✓
2.2	[If yes} How did you hear about it (word-of-mouth, banner, brochure, letter, local events)?	✓	✓
2.3	What was your reaction to each of these contacts and materials (positive, negative, persuasive) suggestions?	✓	✓
2.4	Did you receive any assistance with the administrative process of developing and submitting a plan, submitting employee claims? Nature of assistance (in-person, email, phone)? How much time did you spend getting assistance? How helpful was this? Suggestions? [If not] Were you aware you could receive assistance?	✓	✓
2.5	Describe the process you went through to sign-up for the WS program (e. g, plan creation, approval, etc.). Barriers? Suggestions?	✓	
3.	**Usage: Decision Making Process, Burden, Costs, and Barriers**		
3.1	Please tell us about your firm's usage of shared work (dates, extent).	✓	
3.2	When deciding to participate in the WS program, what, if any alternatives did you consider? Were layoffs considered? Do know (or can you estimate) the number of jobs saved? [Method used to estimate? Any records available?]	✓	

[18] Oregon refers to its STC program as Work Share (WS) and that term will be used in this document. Iowa refers to its STC program as Voluntary Shared Work (VSW) and the Guide will be tailored accordingly at the time of the interview.

OBJECTIVES/CONCEPTS & QUESTIONS			
3.	**Usage: Decision Making Process, Burden, Costs, and Barriers (continued)**	**User**	**Non-user**
3.3	What was the main factor in your firm's decision to participate [or not] in WS? Were there other factors that affected the decision? Who was involved in the decision? Was there much consensus? What program features encouraged or discouraged your participation? Did the requirement to maintain employee benefits have any effect on your decision to participate?	✓	✓
3.4	What, if any, is the impact of the UI tax on your participation in the program? [Tailor to OR those who used when required to reimburse and IA when were reimbursed.] Was this a significant issue in your decision-making process? Please explain.	✓	✓
3.5	What are your expectations for future use of shared work (e.g. same, more, less)? Explain reasons.	✓	✓
3.6	To what extent does [state agency] monitor your firm's compliance with the WS program requirements? Reporting requirements? Effect plan or participation (e.g. restrictions on part-time jobs)?	✓	✓
4.	**Selecting Employees**		
4.1	How did you select the work unit(s) to participate in the plan? Decide which employees in the department or unit will participate? ▪ [If more than one department/plan] How do the departments differ in terms of their WS plans? ▪ How did you decide on the percentage of hours for reduction? ▪ What are the characteristics of WS employees? Skill level, years of tenure, positions.	✓	
4.2	How and when do you communicate with the employees about their participation? What is their usual reaction? What, if any, role do employee reactions play in your decision-making? ▪ What, if any, role did Unions play in your decision-making?	✓	
4.3	What kinds of advantages and disadvantages of the program have employees expressed to you? Any concern about the effect on UI or firm benefits?	✓	
4.4	What attitudes or intentions have employees expressed about future use	✓	
5. Operation of the WS Plan			
5.2	What have been your greatest challenges in implementing/operating the WS program and how did you overcome them?	✓	
5.3	Do [or could] you estimate how much time it takes for your firm to participate in WS? To develop the plan? To submit weekly claims? Is this a deterrent to your participation?	✓	
5.4	Have you [or could you] estimated the cost to your firm to participate in WS? How would you calculate the cost? How variable would these estimates be over time? ▪ Staff time to establish a WS plan; enrol employees; report weekly hours? ▪ Continuing to pay health and retirement benefits while workers at reduced hours ▪ Training WS employees ▪ Potential impact on UI tax rate ▪ Do you have existing data that would be relevant?	✓	✓
5.5	Are any of these costs [enumerate] a deterrent to using the WS program? If so, how significant?	✓	✓

OBJECTIVES/CONCEPTS & QUESTIONS		User	Non-user
6.	**Overall Assessment of the Experience, Promising Practices, Recommendations for Program and Operational Improvements**		
6.1	Overall, what is your view of the WS program? ▪ What do you like the most about the program? ▪ Anything you don't like?	✓	
6.2	Are there any features of the program that you think are particularly helpful to encourage employer and employee participation? ▪ Any discouraging features or barriers to participation? ▪ What solutions would you like to see to address the barriers?	✓	
6.3	What, if any, improvements would you like to see to WS program?	✓	
6.4	Would you recommend WS to other employers or workers?	✓	
7. Wrap Up			
7.1	Any other comments or suggestions that you have about the Work Share Program? The outreach materials or events?	✓	✓
THANK YOU FOR YOUR TIME AND ASSISTANCE!!			