RETAIN | Retaining Employment and Talent After Injury/Illness Network

Evaluation Design for the Retaining Employment and Talent after Injury/Illness Network (RETAIN) Demonstration

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Contents

Exhibits

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List of Acronyms

CA	Cooperative Agreement
CFIR	Consolidated Framework for Implementation Research
CMS	Centers for Medicare & Medicaid Services
COHE	Center for Occupational Health & Education
CPS	Current Population Survey
DEED	Department of Employment and Economic Development
DI	Disability Insurance
DOL	U.S. Department of Labor
IRS	Internal Revenue Service
ITT	Intent-to-Treat
MDI	Minimum Detectable Impacts
MEF	Master Earnings File
MIS	Management Information System
MSK	Musculoskeletal
OVR	Office of Vocational Rehabilitation
RETAIN	Retaining Employment and Talent after Injury/Illness Network
RTW	Return-to-Work
SAW	Stay-at-Work
SGA	Substantial Gainful Activity
SNAP	Supplemental Nutrition Assistance Program
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
TANF	Temporary Assistance for Needy Families
TOT	Treatment-on-the-Treated
UI	Unemployment Insurance
WD-FAB	Work-Disability Functional Assessment Battery
WDI	Workforce Development, Inc.
WC	Worker's Compensation

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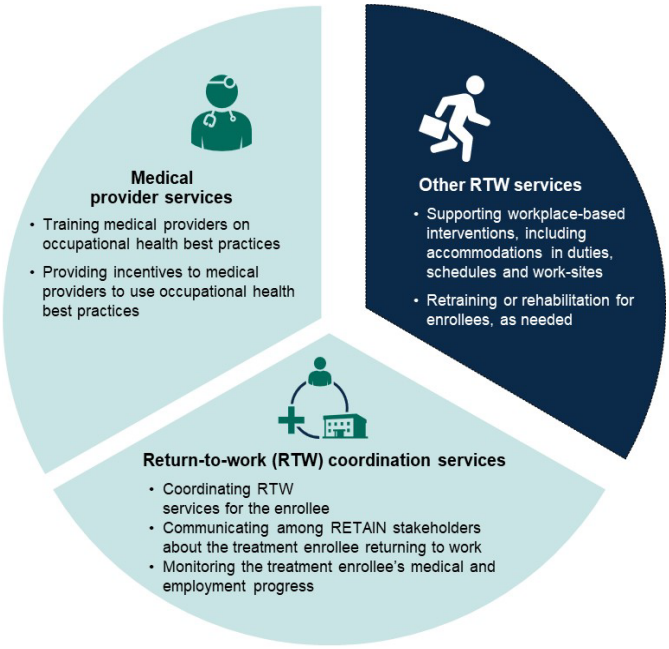
Executive Summary

The Retaining Employment and Talent after Injury/Illness Network (RETAIN) demonstration is a collaborative effort between the U.S. Department of Labor and the Social Security Administration to help workers with recently acquired injuries and illnesses remain in the labor force. The goal of RETAIN is to implement and build evidence on the effectiveness of early stay-at-work/return-to-work (SAW/RTW) strategies to help those who develop a potentially disabling condition. The RETAIN demonstration seeks to increase employment retention and labor force participation and reduce long-term work disability among project participants.

The RETAIN demonstration has two phases. In Phase 1, which started in 2018, the Department of Labor awarded nearly $19 million in grants to eight state agencies to develop and pilot projects to help those who experience a potentially disabling condition remain at or return to work. During Phase 1, the state agencies set up pilots to test recruitment, enrollment, and service delivery for a limited sample of participants who could benefit from RETAIN. In Phase 2, the Department of Labor competitively awarded $103 million in grants to five state agencies to continue and expand their RETAIN projects from May 2021 to May 2025. The five states are Kansas, Kentucky, Minnesota, Ohio, and Vermont.

This report summarizes the evaluation design for RETAIN. The primary objective of the report is to serve as a reference for government officials, project staff, service providers, and members of the general public to consult for basic information about RETAIN until reports become available later in the evaluation.

All RETAIN projects center on early coordination of health care and employment-related supports and services with the goal of helping injured or ill workers remain in the workforce. There are core service components for all RETAIN program models: medical provider services and SAW/RTW coordination services. Other SAW/RTW components of the model can vary by project or participant. These services will ideally begin within 12 weeks of work disability onset. States have the flexibility to develop models with service providers to meet the potential differing needs of the target populations in their states.



The RETAIN evaluation of each project uses an experimental study design to test hypotheses that RETAIN led to improvements in outcomes and to quantify the improvements. Four states are implementing an individual random assignment study (Kansas, Kentucky, Minnesota, and Ohio), and one state is implementing a clustered random assignment study (Vermont).

The goals of the evaluation are to document how the RETAIN projects were implemented and estimate the impacts of the projects on SAW/RTW outcomes for people at risk of exiting the labor force and becoming reliant on long-term disability programs. The evaluation will examine the extent to which the

projects achieve their intended goals. It will include a process, participation, impact, and benefit-cost analysis that answer the following questions:

1. **How are RETAIN projects designed, implemented, and operated, and what factors influenced the implementation experience?**

   Our process analysis will document the project environment surrounding service delivery; states' processes for defining, recruiting, and enrolling eligible workers; operational features and states' experiences implementing services; and lessons for future programs with similar objectives.

2. **Who enrolls in RETAIN projects? What kinds of services do they receive? What are the characteristics of medical providers delivering RETAIN services?**

   Our participation analysis will examine which eligible workers and providers enroll. It will examine the characteristics of enrollees and assess how they compare with other populations. It will also examine how treatment enrollees use services, how providers deliver services, and how services received vary with participants' characteristics.

3. **Did the RETAIN projects increase employment and earnings? Did the RETAIN projects reduce applications for Social Security Disability Insurance and Supplemental Security Income benefits? Are they more effective at achieving these outcomes for some people than others?**

   Our impact analysis will estimate the impacts of the interventions on employment, earnings, and applications for Social Security Disability Insurance and Supplemental Security Income as well as other outcomes, including service use and well-being. We will estimate short-term impacts (two months after enrollment) when RETAIN is hypothesized to have a positive effect on enrollees' service use, mental and physical health, and likelihood of staying at work or returning to work in the near future. We will also estimate impacts one year after enrollment, when RETAIN is expected to increase employment and earnings, reduce entry into Social Security Administration programs, and improve well-being.

4. **What are the benefits and costs of each RETAIN project? Are the benefits of each RETAIN project larger than its costs?**

   Our benefit-cost analysis will estimate the benefits and costs of each RETAIN project for treatment enrollees, the Disability Insurance trust fund, other federal and state government stakeholders, and the combination of all key stakeholders.

The evaluation will draw on a mix of quantitative and qualitative data sources to document how RETAIN was implemented, the experiences of RETAIN treatment enrollees, and the effectiveness of services in each state. Data sources include enrollment data, surveys of enrollees and medical providers, administrative records (such as Social Security Administration program data, state unemployment insurance wage records, and Internal Revenue Service earnings data), program data, and qualitative data. We will draw on these data to address research topics under the process, participation, impact, and benefit-cost analysis.

We will develop a series of reports that document the detailed findings of the RETAIN evaluation and succinctly summarize key findings, making sure to present findings in ways that are accessible to nontechnical audiences. We will produce four reports that will present findings from the process, participation, impact, and benefit-cost analyses. We will use special topic reports to present findings that go beyond the results of analyses presented in the primary reports to inform future SAW/RTW research and programming.

Study report	Purpose
Early assessment report	To provide formative feedback to states on recruitment, enrollment, early service provision, and adherence to the planned program model during the initial months of the intake period.
Process analysis report	To provide a summative analysis of recruitment, enrollment, service provision, and adherence to the planned program model after the states have had time to fully implement their RETAIN projects.
Short-term impacts and experiences report	To describe enrollees' short-term outcomes and assess each RETAIN project's effectiveness in changing them
Final impact report	To assess each RETAIN project's impacts on key outcomes and its benefits and costs.
Special topic reports	To develop up to five reports on special topics related to RETAIN and issues that emerge during the evaluation

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I. Introduction

Each year, more than 2 million workers in the United States leave the labor force, at least temporarily, because of a medical condition or illness (Hollenbeck 2015). Many of these workers fall through the cracks in the current support system and exit the workforce permanently. Exits from the workforce can lead to subsequent adverse effects on standard of living (Ben-Shalom and Burak 2016; Schimmel and Stapleton 2012) and well-being (Waddell and Burton 2006; Strully 2009). Without steady income from employment, these workers and their families may turn to public supports such as Social Security Disability Insurance (SSDI), Supplemental Security Income (SSI), Medicare, and Medicaid.

The Retaining Employment and Talent after Injury/Illness Network (RETAIN) demonstration is a collaborative effort between the U.S. Department of Labor (DOL) and the Social Security Administration (SSA) to help workers with recently acquired injuries and illnesses remain in the labor force. The goal of RETAIN is to implement and build evidence on the effectiveness of early stay-at-work/return-to-work (SAW/RTW) strategies to help those who develop a potentially disabling condition.

The interventions in the RETAIN demonstration seek to influence the following outcomes of workers':

- **Employment:** to increase employment retention and labor force participation of individuals who acquire or are at risk of developing disabilities that inhibit their ability to work
- **Reliance on disability programs:** to reduce long-term work disability among project participants, including the need for SSDI and SSI

The RETAIN demonstration includes two phases. In Phase 1, which started in 2018, DOL awarded nearly $19 million in grants to eight state agencies to develop and pilot projects to help those who experience a potentially disabling condition remain at or return to work. During Phase 1, the state agencies set up pilots to test recruitment, enrollment, and service delivery for a limited sample of participants who could benefit from RETAIN. In Phase 2, DOL competitively awarded $103 million in grants to five state agencies to continue and expand their RETAIN projects from May 2021 through May 2025. The five states are Kansas, Kentucky, Minnesota, Ohio, and Vermont.

SSA contracted with Mathematica to conduct an independent evaluation of the RETAIN projects. In this report, we summarize the evaluation design for RETAIN. The primary objective of the report is to serve as a reference for government officials, project staff, service providers, and members of the general public to consult for basic information about RETAIN until reports become available later in the evaluation.

A. Policy context for RETAIN

RETAIN is a joint effort between SSA and DOL to test the effectiveness of promising approaches to improving the labor force participation and retention of individuals with temporary injuries and disabilities (Office of Management and Budget 2017). The purpose of RETAIN is to address the decades-long increase in the number of individuals receiving disabled worker benefits from the SSDI program, which had risen from 2.9 million in 1980 to a peak of over 8.9 million in 2014 (SSA 2020). Although that number has fallen to 8.1 million as of May 2021, over 2 million workers have applied for disabled worker SSDI benefits each year since 2006. In 2019, approximately 680,000 individuals were awarded SSDI disabled worker benefits and over 460,000 SSI awards went to blind or disabled recipients ages 18–64, though there is some overlap between the two groups (SSA 2020).

The millions of workers who experience medical conditions that put them at risk of exiting the workforce often fall through the cracks of a **fragmented system**. For injuries and illnesses that occurred at the workplace or are work-related (also known as "on-the-job" or "occupational" injuries or illnesses), the worker is typically eligible for cash benefits and medical care through workers' compensation (WC). The level of benefits and quality of medical care provided under WC vary widely across states (Murphy et al. 2020; Rothkin 2019). Workers with other, non-work-related (or non-occupational) injuries or illnesses may be eligible for short- and long-term disability insurance benefits sponsored by their employer or state. However, most workers do not have access to such benefits, especially those employed in low-wage positions (Bureau of Labor Statistics 2020). Even for those workers who are covered by state or employer-sponsored disability insurance for their non-work-related medical conditions, access to job-retention services and supports is limited. Most often, workers are left to navigate, on their own, various uncoordinated service providers and programs that are not adequately equipped to deal with their situations or are accessed when it is too late to help (Ben-Shalom 2016). These workers experience adverse effects on their health, family finances, and quality of life, and hundreds of thousands go on to receive federal disability benefits such as SSDI and SSI.

Another challenge is the **misalignment of financial incentives** across stakeholders. There are substantial financial incentives to preventing long-term disability. The family of a median income worker that exits the labor force because of work disability at age 50 stands to lose, on average, $420,000 through retirement age. The federal government stands to lose over $290,000 per worker through retirement age, due to the cost of cash benefits (SSDI and SSI), health insurance (Medicare and Medicaid), and lost tax revenues (Ben-Shalom and Burak 2016). However, although the federal government has the second highest financial stake after workers and their families, it is not well positioned to help workers directly (Ben-Shalom et al. 2018). SSA and the Centers for Medicare & Medicaid Services (CMS) accrue most of the savings from preventing work disability but have no statutory authority to invest in preventing work disability and are not able to directly provide services to meet workers' needs before they apply for SSDI.

Instead, other stakeholders such as insurers, health care professionals, employers, and state agencies are in a better position to do so but are typically limited in the degree to which they can or want to intervene. For example, medical providers are encouraged to focus on diagnosing and treating the medical conditions of patients and have little or no incentive or training to help workers return to function and work (Jurisic et al. 2017). Similarly, employers are in the best position to facilitate workplace accommodations but may need help in understanding the financial implications for their organization and require advice and supports in implementing accommodations. Some state agencies could provide support to workers with medical conditions before they lose their jobs but have neither the mandate nor much incentive to do so.

The RETAIN demonstration aims to address the fragmented system and misalignment of incentives that make it challenging to efficiently deliver evidence-based services to workers with injuries or illnesses. It does so by providing states with funding to coordinate between various relevant stakeholders to expand access to evidence-based early intervention services.

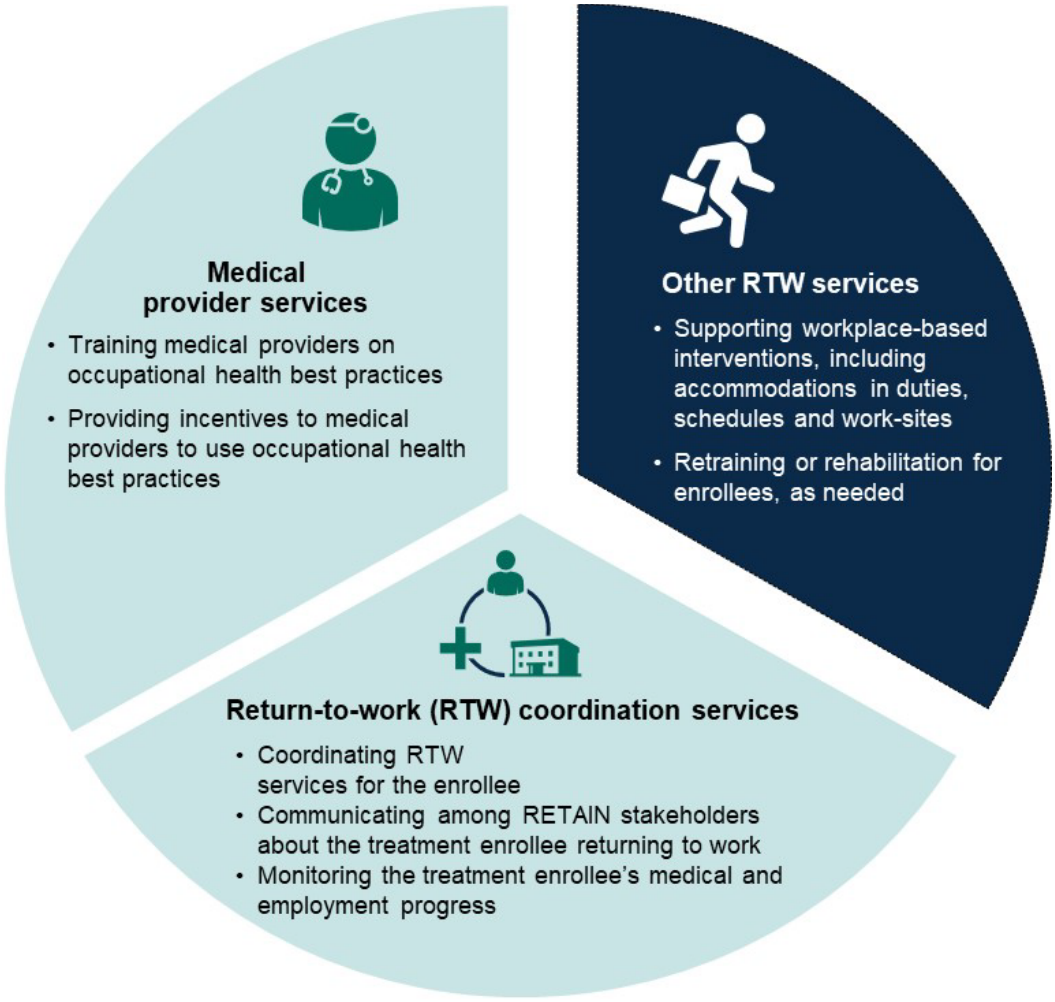
B. The RETAIN program model

All RETAIN projects are centered around *early coordination of health care and employment-related supports and services* to help injured or ill workers remain in the workforce. The RETAIN states differ in how they are implementing these strategies to account for differences in their employment, insurance, and

health care landscapes. Nonetheless, certain services and supports are central to all state RETAIN projects.

The RETAIN projects follow a core program model (Exhibit I.1). Intervention strategies central to the RETAIN program model include medical provider services and SAW/RTW coordination services. Other SAW/RTW components of the model may vary by project or participant. RETAIN's coordinated health and employment services will ideally begin within 12 weeks of work disability onset, and grantees must enroll at least 80 percent of enrollees within this timeframe.

Exhibit I.1. RETAIN program model



Note: The RETAIN project model comprises multiple components. Some are considered core components, and others may vary by project (and in some cases, by participant). The dark blue wedge represents items that may vary by project or participant.

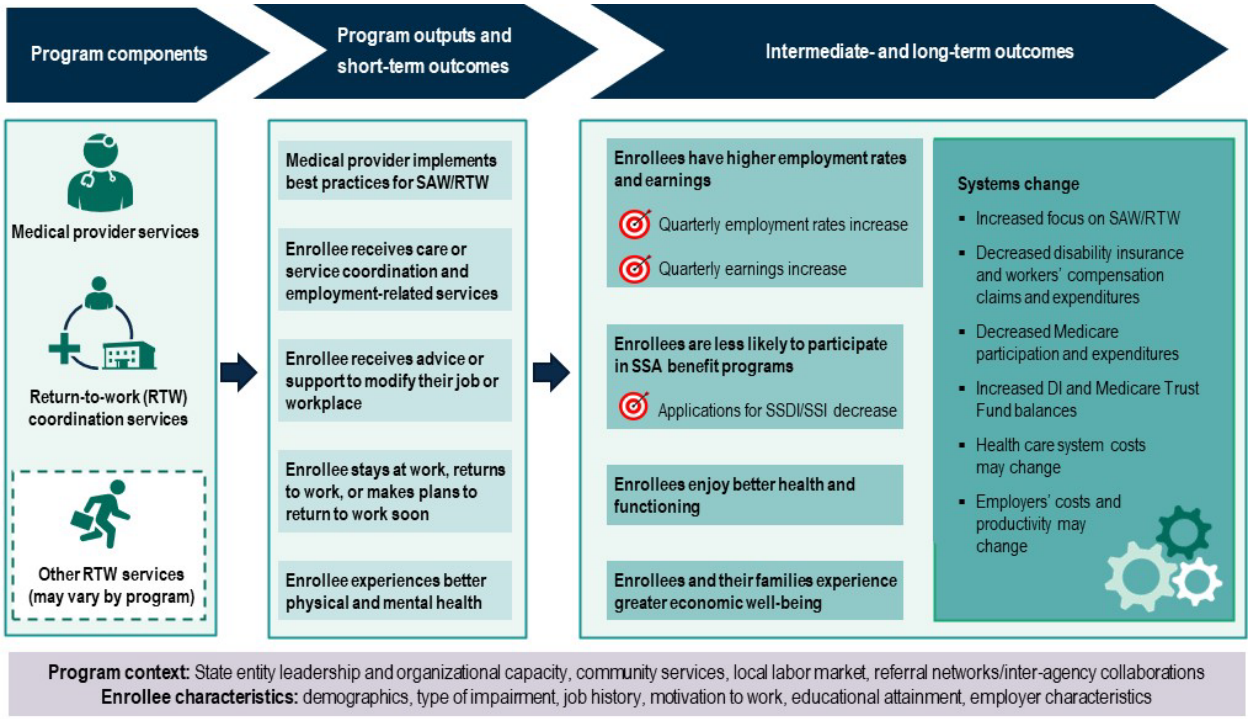
The ultimate policy goals of RETAIN are to reduce long-term disability—including the need for SSDI or SSI benefits—and to increase employment retention and earnings among individuals who experience an illness or injury.

Exhibit I.2 illustrates the RETAIN theory of change. It summarizes the program components, expected outputs and enrollee short-term outcomes, and the potential enrollee and system outcomes from successful implementation of RETAIN in the intermediate and long term. We summarize the theory as follows:

- In the **short term**, the RETAIN projects' medical provider services should increase medical providers' adherence to best practices. The projects' RTW coordination services and other RTW services should increase enrollees' use of care coordination services and employment-related services and enrollee's receipt of advice about workplace accommodations. As a result of multiple program components, RETAIN is expected to have a positive effect in the short term on enrollee's mental and physical health and the probability that the enrollee stays at work, returns to work early, or makes plans to return to work in the near future.
- In the **intermediate and long term**, the program outputs and short-term outcomes could produce sustained impacts on the economic and general well-being of enrollees. An effective RETAIN project would be expected to increase quarterly employment rates and quarterly earnings, as well as reduce applications for SSA disability benefits. In the long term, we would expect to see increased employment and earnings, lower participation in SSA programs, better health and functioning, and improved economic well-being.
- A sustained pattern of impacts on enrollee outcomes in the long term could in turn lead to **systems-level changes**. Such changes include an increased focus on RTW in systems such as health care settings; reduced expenditures for disability insurance, WC claims, and Medicare; and increased SSDI and Medicare Trust Fund balances. There may be changes in health care costs as well as employer costs and productivity, though the direction of these changes is unclear.

We expect this theory of change to broadly apply to all RETAIN interventions even though states' projects will have unique features or be implemented differently. Further, the degree to which the RETAIN interventions can influence enrollees' outcomes will depend on other outside factors. Such factors include enrollee characteristics (such as demographics, employer characteristics, and job history) and project context (such as project leadership, local labor market conditions, and similar services available in the community). We also expect variation across state RETAIN projects with respect to features such as the target population, point of recruitment, intake and screening, service approach, and state policy context. Nevertheless, this general theory of change has guided our evaluation design.

Exhibit I.2. RETAIN theory of change



DI = disability insurance; SAW/RTW = stay-at-work/return-to-work

C. Overview of the evaluation

The RETAIN evaluation will document how the RETAIN projects were implemented and estimate the impacts of the projects on SAW/RTW outcomes for individuals who are at risk of exiting the labor force and becoming reliant on long-term disability programs. We will conduct separate evaluations of each state project. The evaluation will examine the extent to which the projects achieve their intended goals and whether their benefits outweigh their costs. Specifically, it will answer the following four sets of overarching research questions:

1. How are RETAIN projects designed, implemented, and operated, and what factors influenced the implementation experience?
2. Who enrolls in RETAIN projects? What kinds of services do they receive? What are the characteristics of medical providers delivering RETAIN services?
3. Did the RETAIN projects increase employment and earnings? Did the RETAIN projects reduce applications for SSDI and SSI benefits? Are they more effective at achieving these outcomes for some individuals than others?
4. What are the benefits and costs of each RETAIN project? Are the benefits of each RETAIN project larger than its costs?

To answer these questions, we will conduct the following analyses:

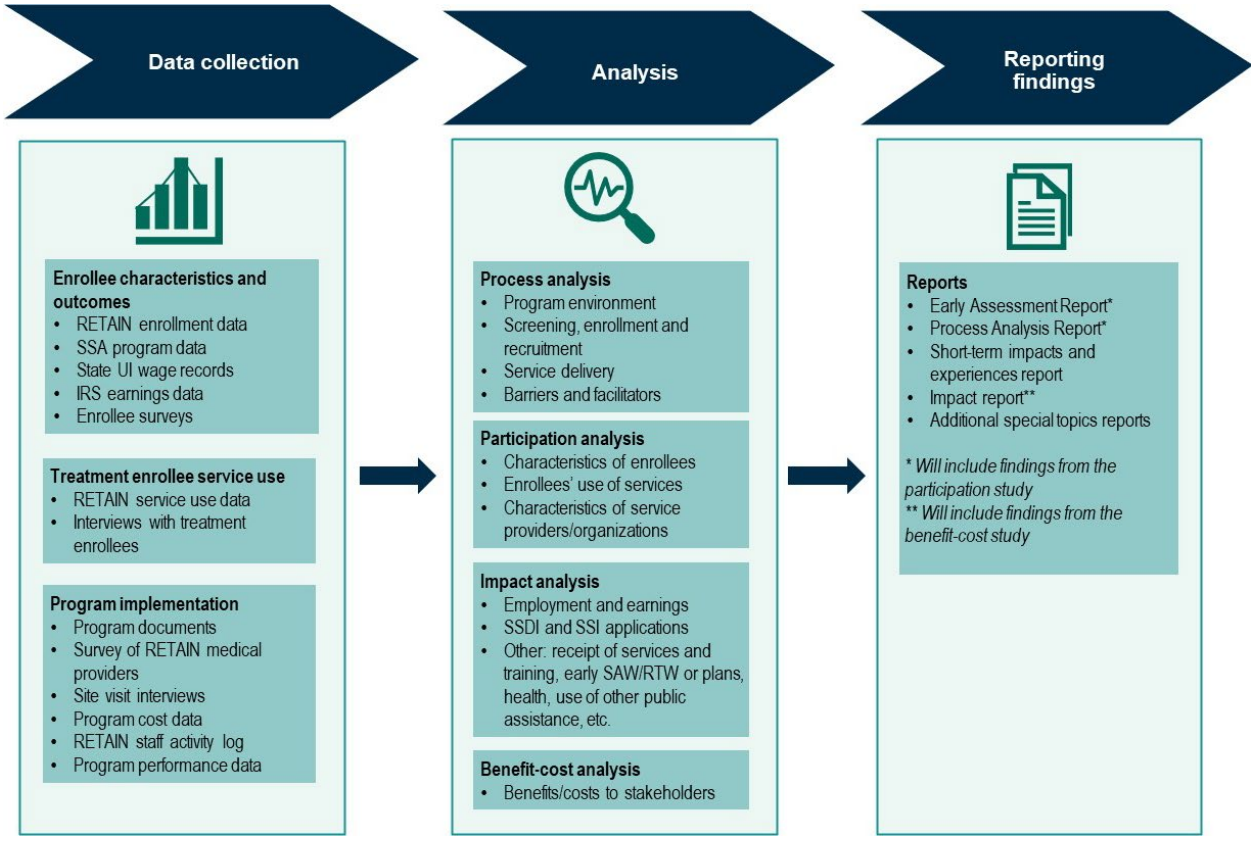
- The **process analysis** will document the project environment surrounding service delivery; states' processes for defining, recruiting, and enrolling eligible workers; operational features and states' experiences with implementing services; and lessons for future programs with similar objectives.
- The **participation analysis** will examine which eligible workers and providers enroll. It will examine the characteristics of enrollees and assess how they compare to other populations. It will also examine how treatment enrollees use services, how providers deliver services, and how services received vary with participant characteristics.
- The **impact analysis** will estimate the impacts of the interventions on employment, earnings and SSDI and SSI applications, as well as other outcomes including service use and well-being.
- The **benefit-cost analysis** will estimate the benefits and costs of each RETAIN project for treatment enrollees, the DI trust fund, other federal and state government stakeholders, and the combination of all key stakeholders.

Exhibit I.3 summarizes the evaluation framework, which we use to motivate the content and structure of this report. The framework is grounded in our understanding of prior research on work disability and effective early interventions to help workers SAW/RTW. The blue arrows across the top of the exhibit display three key elements of the evaluation: data collection, analysis, and reporting. The green boxes in the data collection column describe the types and sources of data we will draw on for the evaluation. The green boxes in the analysis column describe the information to be covered under each of our four planned analyses. Finally, the green box in the reporting column lists the planned reports that will present findings from the evaluation.

D. Organization of the report

The remainder of this report presents details on the RETAIN evaluation. In Chapter II, we provide background on the evaluation by summarizing recent related research, introducing the five RETAIN projects, and providing an overview of the evaluation design. In Chapter III, we describe a plan for collecting the quantitative and qualitative data that will be analyzed for various components of the evaluation. In Chapters IV, V, VI, and VII, we present our approach to the four major analytic components of the evaluation, respectively: a process analysis of project implementation, a participation analysis of providers and workers involved in the projects, an impact analysis of workers' outcomes, and a benefit-cost analysis. Finally, in Chapter VIII, we present the evaluation timeline, covering data collection, analysis, and reporting activities.

Exhibit I.3. RETAIN evaluation framework



IRS = Internal Revenue Service; SAW/RTW = stay-at-work/return-to-work; UI = Unemployment Insurance.

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II. Foundation of the RETAIN Evaluation

The RETAIN evaluation will generate evidence on states' ability to successfully implement early intervention strategies to improve employment outcomes for individuals who experience medical conditions that put them at risk of exiting the labor force and becoming reliant on long-term disability programs and other public supports. Successful implementation of such strategies, especially at a large scale, presents an opportunity to improve the well-being of thousands of workers each year while boosting the national economy and the fiscal stability of disability and related safety-net programs.

In this chapter, we review recent research related to SAW/RTW interventions and provide an overview of each state's RETAIN project and evaluation design. We first briefly summarize a growing body of evidence that shows that many of those who leave the workforce with health problems could have been prevented from doing so if they had received timely, well-designed services and supports. Next, we introduce and describe the five RETAIN projects participating in the evaluation. Finally, we provide an overview of the evaluation design, the details of which we provide in the chapters that follow.

A. Lessons from recent research

1. Evidence that early support results in better outcomes

Early intervention is key to preventing long-term work disability (ACOEM 2006). To reduce work loss and prevent permanent work disability, prevention services must be systematically applied soon after the onset of a health condition or worsening of a chronic condition that threatens the worker's ability to work (Waddell and Burton 2004). The 12 weeks immediately following the onset of work disability represent a window of opportunity during which simple approaches can significantly improve worker outcomes (Christian, Wickizer, and Burton 2016). Early, targeted, and quick interventions taken by stakeholders (including workers themselves) during the first few weeks after the onset of an illness or injury can influence whether the worker ultimately exits the labor force (Franklin et al. 2013; Loisel and Anema 2013; Shaw et al. 2013).

Most of the promising, evidence-based interventions were first developed and tested by private-sector employers, private disability insurers, and WC insurers (Ben-Shalom et al. 2018). WC insurers typically implement safety programs to reduce injuries and SAW/RTW programs to reduce work disability after medical conditions arise. Private disability insurers also dedicate resources to early RTW programs. When these services are designed and delivered effectively, many workers with new medical conditions can avoid prolonged work disability and job loss (Bowling 2000; Caruso 2013; Franklin et al. 2015; McLaren, Reville, and Seabury 2010; Waddell, Burton, and Aylward 2008; Wickizer et al. 2004, 2011).

Tailored support services can improve job retention, particularly for workers with musculoskeletal conditions (especially lower back pain), mental health conditions, and other chronic conditions for which adherence to treatment is critical (Anand and Ben-Shalom 2017; Stapleton et al. 2016). Successful examples include providing physicians with evidence-based guidelines for managing patients with lower back pain (Buchbinder, Jolley, and Wyatt 2001), implementing a multidisciplinary model of back pain management that includes both clinical and ergonomic approaches (Loisel et al. 1997), offering people with musculoskeletal conditions a program of education and protocol-based clinical management at their regular physician visits (Abasolo et al. 2005), and providing communication and problem-solving skills to workers with back pain and their immediate supervisors (Linton et al. 2016).

Although early interventions can take different forms and range in complexity, the most effective approaches improve coordination, communication, and services among key stakeholders—employees, employers, and health care providers—with an overriding focus on maintaining or restoring the person's functional capacity and ability to work (Smalligen and Boyens 2019). A systematic review found moderate evidence of effectiveness for interventions that included a work accommodation offer, contact between health care provider and workplace, early contact with worker by workplace, ergonomic work site visits, and interventions with a RTW coordinator (Tompa et al. 2008). There is also evidence that multi-pronged approaches that encompass at least two of three domains of health, service coordination, and work modification are most effective (Cullen et al. 2018).

2. Building on Washington's COHE model

To date, the most promising model of early RTW intervention has come from Washington State's Center for Occupational Health & Education (COHE). The state's Department of Labor and Industries created a model of occupational health care delivery and collaborative care to support RTW in the state-administered WC system (Box II.1). The key elements of the COHE model include care coordination, occupational health best practices, regular provider training and performance feedback, provider incentives, and community outreach (Wickizer et al. 2004).

Washington's COHE

The Washington State Department of Labor and Industries, which operates the state workers' compensation program, contracts with Centers for Occupational Health & Education (COHEs) in the private health care delivery system. The COHE program began as a pilot in two sites in 2002 and has expanded across the state since. Key features of the COHE model include:

- Improved care coordination provided through health services coordinators;
- Enhanced physician payment for adoption of occupational health best practices, defined by a set of quality indicators linked to specific billing codes;
- Training designed to improve providers' ability to treat common workplace injuries such as lower back pain;
- Financial support for the development of improved information systems to track patient progress;
- Support of institutional executive and medical leadership committed to the goal of reducing work disability and improving health outcomes for injured workers; and
- Support and engagement of business and labor leaders.

Two evaluations highlight the strong potential for COHE to inform early intervention approaches, such as those planned for RETAIN. First, an evaluation of a COHE model pilot found that the intervention led to reductions in disability days, labor force exits, and total WC costs over the 12-month follow-up period (Wickizer et al. 2011). COHE reduced lost workdays by 20 percent and reduced the number of WC claimants who are out of work and receiving cash benefits by 21 percent. In addition, the total cost per claim (medical and disability costs combined) for patients treated through the COHE was $510 less than the cost for non-COHE patients. These savings were even greater for patients with back injuries.

A second, larger study found that the positive impacts of COHE persisted in the long term. This study of approximately 40,000 injured workers with musculoskeletal injuries found that, over an 8-year follow-up period, workers treated through COHE experienced 231,500 fewer disability days per 10,000 workers, compared with the workers treated by non-COHE providers (Wickizer et al. 2018). Further, COHE reduced SSDI entry among participants by 26 percent in the 8 years after they filed their WC claims (Franklin et al. 2015). Taken together, the

findings suggest that well-designed health care delivery innovations that provide effective services to injured workers early in the treatment cycle can alter their long-term trajectory of disability and employment.

RETAIN builds on key features of COHE, while broadening the target population and adding emphasis on access to employment-related services and supports. While COHE operates within the state's WC system and is available only to people experiencing work-related injuries or illnesses, RETAIN expands this target population to also include non-work-related injuries, as long as individuals are employed or in the labor force when the injury or illness occurs. Further, RETAIN includes intervention strategies that COHE did not emphasize. For example, RETAIN projects are required to provide support for workplace-based interventions (such as accommodations, if necessary) and assistance with retraining and rehabilitation for workers who can no longer perform their prior job or other available, suitable alternate work. Such services expand on the cross-institutional collaboration that was modeled in COHE. Therefore, the RETAIN evaluation will add to the evidence base by testing a program model that expands upon COHE and applies it to a broader population of workers.

B. Participating RETAIN projects

In April 2021, DOL announced the award of approximately $103 million to five state agencies to continue and expand their RETAIN projects.[1] The awards are in the form of cooperative agreements that entail an ongoing working relationship between DOL and the individual state agencies to achieve the objectives of RETAIN. DOL awarded the grants through a competitive process that included publication of a funding opportunity announcement on October 15, 2020; preparation and submission of applications by state agencies; and review of the applications by a panel convened by DOL. Exhibit II.1 lists the participating states, lead agencies, RETAIN project names, and award amounts. Each state agency works with a consortium of partners, such as state and/or local workforce development entities, health care systems, and/or health care provider networks to implement RETAIN.

Exhibit II.1. RETAIN awardees

Participating state	Lead agency	RETAIN project name	Award amount
Kansas	Kansas Department of Commerce	RETAINWOR*KS*	$21,600,000
Kentucky	Kentucky Department of Workforce Investment	RETAIN Kentucky	$21,600,000
Minnesota	Minnesota Department of Employment and Economic Development	Minnesota RETAIN	$19,518,509
Ohio	Ohio Department of Job and Family Services	Ohio RETAIN	$18,800,000
Vermont	Vermont Department of Labor	Vermont RETAIN	$21,600,000

Each of the RETAIN projects includes the core components of the RETAIN program model described in Chapter I. However, the federal sponsors of the RETAIN demonstration did not prescribe details of how the components must be implemented; rather, each awardee proposed its own approach to each component and developed its own project logic model. Each awardee was also free to specify the service

[1] DOL awarded the Phase 2 RETAIN grants to the Kansas Department of Commerce, the Kentucky Office of Employment and Training, the Minnesota Department of Employment and Economic Development, the Ohio Department of Job and Family Services, and the Vermont Department of Labor.

delivery area, target population, organizational structure, and experimental study design for its proposed project. Below, we provide a brief overview of each project. For each project, we outline the lead entity, service area, target population, recruitment approach, and key project components. Appendices A–E provide more details on the implementation and evaluation of RETAIN in each state.

1. Kansas

The Kansas Department of Commerce (hereafter referred to as Kansas) has partnered with a consortium of medical and business partners, including Ascension via Christi, to implement "RETAINWOR*KS*" statewide. The project serves adults under the age of 65 who live or work in Kansas; are currently employed or seeking employment; and have work-related or non-work-related musculoskeletal injuries, mental health conditions, chronic diseases, or newly diagnosed illnesses or injuries that affect the ability to attend work, perform work duties, or affect work productivity. Kansas recruits workers through referrals from medical providers. Participants receive intensive case management and care coordination by health and employment services RTW navigators. Financial incentives are offered to participants and medical providers for milestone attainment and training achievement.

2. Kentucky

The Kentucky Education and Workforce Development Cabinet (hereafter referred to as Kentucky) implements "RETAIN KY" statewide. The project serves individuals who have an injury or illness that is not work related, are employed or have been employed within the last 12 months and made at least $1,000 in one of those months, and reside or work in the state. Kentucky uses a multi-method approach toward recruitment that includes referrals from medical providers, employers, Office of Vocational Rehabilitation, workforce and disability management organizations, community partners, and word of mouth. Services offered by the project include individualized intensive vocational services from RETAIN RTW Coordinators, with an emphasis on assistive technology, universal design, and peer support. The project, in close coordination with its higher education partners, provides training on SAW/RTW best practices and RETAIN, as well as financial incentives to health care professionals.

3. Minnesota

The Minnesota Department of Employment and Economic Development (hereafter referred to as Minnesota) works with state and local partners, including the Mayo Clinic, to implement "MN RETAIN" statewide. The project serves adults who live and work in Minnesota that are in the labor force and have work- or non-work-related injuries or illnesses that acutely affect employment, including exacerbation of pre-existing conditions. Minnesota uses a multi-method approach toward recruitment that includes referrals from health care providers, screening of Family and Medical Leave Act forms filed by injured or ill workers, screening daily emergency department visit logs, reviewing provider clinical calendars to identify workers with injuries or illness affecting employability, outreach to employers, marketing to the general public within the state via social media campaigns, and self-referrals. RTW case managers guide workers toward appropriate medical care and work restrictions based on functional ability and the specific job role by developing work plans, and the project offers just-in-time education for medical providers regarding evidence-based work restrictions using online training modules available on demand.

4. Ohio

The Ohio Department of Job and Family Services (hereafter referred to as Ohio) has partnered with Mercy Health to implement "Ohio RETAIN." The project serves adults under the age of 65 with non-work-related musculoskeletal conditions or cardiovascular diagnoses that affect employment who live in Youngstown (Mahoning, Columbiana, and Trumbull Counties), Toledo (Lucas County), and Cincinnati (Butler, Clermont, Hamilton, and Warren Counties). Ohio recruits potentially eligible workers as they receive care from medical providers after reviewing physician notes and medical charts. RTW coordinators provide health care coordination and psychosocial support, establish RTW plans, and refer treatment enrollees to workforce services and other community partners (such as housing or transportation resources).

5. Vermont

The Vermont Department of Labor (hereafter referred to as Vermont) is partnering with health care, employment, and other entities to implement "Vermont RETAIN" statewide. The project serves adults under age 65 with all types of injuries and illnesses, including mental health and substance use disorders, that could affect their ability to work full time or to full capacity. Vermont recruits potentially eligible workers as they receive care from medical providers. Vermont plans to work with 68 primary care practices across the state. Providers at participating practices are trained in the Vermont Best Practice Resources and Training, which explains how to identify early and then manage the risk of work disability to help prevent long-term unemployment. Participants undergo a systematic assessment of barriers to work, work goals, and function in order to create a personalized RTW plan; RTW coordinators use a strength-based coaching model and provide care coordination through a customized mobile health app.

C. Evaluation design

The goal of the RETAIN evaluation is to build evidence on early intervention strategies to improve employment outcomes for individuals who experience injuries or illnesses that put them at risk of exiting the labor force and relying on disability programs and other public supports in the long term. To do so, the evaluation will document how each project is implemented, describe enrollees, estimate each project's impacts on enrollees' outcomes, and assess whether the benefits outweigh the costs. The evaluation team will conduct process, participation, impact, and benefit-cost analyses for each project. Exhibit II.2 lists the research questions that we will address with each analysis.

The evaluation approach is grounded in our understanding of prior research on work disability and effective early interventions to help workers SAW/RTW. We hypothesize that RETAIN will lead to improvements in the short-, intermediate-, and long-term outcomes shown in Exhibit I.2. These outcomes encompass both service-delivery outcomes (for example, increased coordination and use of services) and enrollee outcomes (for example, employment, earnings, SSDI applications, income, and mental health). The RETAIN evaluation is based on a rigorous design to test these hypotheses to assess whether RETAIN led to improvements in outcomes and quantify the improvements.

The evaluation of each project uses an experimental study design. Four states are implementing an individual random assignment study (Kansas, Kentucky, Minnesota, and Ohio), and one state is implementing a clustered random assignment study (Vermont). We describe these two types of experimental study designs below:

- **Individual random assignment:** Projects recruit and enroll eligible individuals in the study. The evaluation team randomly assigns each enrollee to either a treatment group that is eligible to receive the full set of RETAIN intervention activities or a control group that is not. Enrollment and random assignment are conducted using Mathematica's Confirmit software, which provides real-time random assignment results.
- **Clustered random assignment:** Vermont enrolls clusters of medical practices to participate in the study. The evaluation team randomly assigns each cluster to either a treatment or control group. Mathematica conducts random assignment of clusters on a rolling basis as Vermont enrolls clusters. Vermont invites eligible individuals who see a medical provider in either the treatment or control group to enroll in the study. Individuals who see a provider that has been randomly assigned to the treatment group and who enroll in the study are considered "treatment group enrollees" and are eligible for RETAIN services. Individuals who see a provider in the control group and enroll in the study are considered "control group enrollees" and are not eligible for RETAIN services.

Exhibit II.2. RETAIN evaluation research questions

Analysis	Research questions
Process	• What were the characteristics of the environment surrounding RETAIN implementation that could influence RETAIN's service delivery and impact on outcomes? • How did states define, recruit, and enroll eligible workers? • How did states implement the RETAIN program components? How did states recruit service providers? To what extent did service providers adopt, or deviate from implementing, the RETAIN program components as planned at the start of Phase 2? • What factors (facilitators and barriers) enhanced or hindered RETAIN implementation?
Participation	• What are the characteristics of RETAIN enrollees? • To what extent do treatment enrollees use RETAIN services? • What are the characteristics of providers delivering RETAIN services?
Impact	• What are the impacts of RETAIN on short-term outcomes such as enrollees' use of services and early return to work? • What are the impacts of RETAIN on enrollees' employment, earnings, and SSDI/SSI program entry? • What are the impacts of RETAIN on enrollee well-being? • Do the impacts vary according to individual characteristics, such as age, sex, and type of injury or illness?
Benefit-cost	• What are the benefits and costs of each RETAIN project? • Are the benefits of each RETAIN project larger than its costs?

A major strength of both designs is the use of random assignment, which make them the gold standard of evaluation designs (Hariton and Locascio 2018). If implemented properly, both designs balance observed and unobserved characteristics of treatment and control groups. Thus, the evaluation team can compare the outcomes of the two groups and attribute any observed differences to the RETAIN project.

The RETAIN evaluation will provide evidence on how each RETAIN project shaped the outcomes of enrollees who were eligible for its services, regardless of whether they participated in those services. Such estimates are widely used in part because the estimates address a policy-relevant research question: What is the effect of offering a program in the real world, where some individuals will not participate or will not receive the full dose of program services offered to them?

The five state projects vary in the details of their evaluation designs (Exhibit II.3). In addition to the type of experimental study design implemented, the projects differ in their planned sources and process for identifying and recruiting eligible workers, sample sizes of enrollees, target populations, and the services offered to the control and treatment groups. As discussed in Chapter III, we have similar data available for each state.

Due to the variation in each states' project and evaluation design, we will take a state-specific approach to the analysis. Therefore, the planned process, participation, impact, and benefit-cost analyses will examine each of the five projects separately. Because these analyses will not happen simultaneously, our approach to reporting and interpreting findings will be cumulative—that is, for each analysis, we will integrate findings from prior analyses of the project when we interpret and discuss the findings.

Exhibit II.3. State-specific evaluation designs

State	Recruitment source/ point of identification	Random assignment unit	Proposed sample size	Target population	Services offered to control group
Kansas	Referrals from medical providers	Individuals	4,000	• Work-related and non-work-related conditions	• Information and referral to partner services
Kentucky	Multiple	Individuals	3,200	• Only non-work-related conditions	• Work and risk assessment • Return-to-work plan development • Referral to resources
Minnesota	Multiple	Individuals	3,200	• Work-related and non-work-related conditions	• None
Ohio	Screening of medical records	Individuals	3,500	• Only non-work-related conditions	• Medical providers who treat both treatment and control group enrollees receive training on stay-at-work/return-to-work best practices
Vermont	Self-screening at participating health care practices	Health care practices	2,040	• Work-related and non-work-related conditions	• Information about American Job Center services and assistance with opening a JobLink account if an individual doesn't have one • Medical providers at all practices will receive training on how to identify early and then manage the risk of work disability to help prevent long-term unemployment

Source: States' Phase 2 applications.

Note: Appendices A–E provide more detail on each state's evaluation design, target population, and services.

III. Evaluation Data Collection

The RETAIN evaluation will draw on a mix of quantitative and qualitative data sources to document how RETAIN was implemented, the experiences of RETAIN treatment enrollees, and the effectiveness of services in each state. Data sources include enrollment data, surveys, administrative records, program data, and qualitative data. Mathematica prepared and submitted to SSA two technical reports that present detailed plans for data collection and sampling. We do not repeat that information in full detail here, but instead describe the data sources based on the planned application of the data—understanding RETAIN enrollee characteristics and outcomes, experiences of RETAIN enrollees, and project implementation. In Exhibit III.1, we present each data source described and the evaluation analyses in which the data will be used.

Exhibit III.1. Data sources and their use in the evaluation

Data source	Process study	Participation study	Impact study	Benefit-cost study
Enrollee characteristics and outcomes data				
RETAIN enrollment data	X	X	X	X
SSA program data			X	X
State UI wage records			X	X
IRS earnings data			X	X
Enrollee surveys		X	X	X
Treatment enrollee service use data				
RETAIN service use data	X	X		X
Interviews with treatment enrollees	X	X		
Program implementation data				
Program documents	X			
RETAIN medical provider survey	X	X		X
Site visits	X	X		X
Staff activity log	X			X
Program performance data	X			X

IRS = Internal Revenue Service; UI = Unemployment Insurance.

A. Enrollee characteristics and outcomes data

To assess the effectiveness of the RETAIN demonstration, we must measure whether the demonstration reached individuals at risk of exiting the labor force, ideally within 12 weeks of work disability onset, and the employment and disability outcomes of enrollees. We will collect data on enrollees' characteristics and outcomes from five sources: RETAIN enrollment data, SSA program data, states' Unemployment Insurance (UI) wage records, Internal Revenue Service (IRS) earnings data, and two rounds of surveys with enrollees.

1. RETAIN enrollment data

DOL requires RETAIN projects to collect specific information about the characteristics of individuals when they enroll in the evaluation. Each state collects this information using a Participant Enrollment Information Form, developed by DOL (hereafter referred to as the RETAIN enrollment form) prior to random assignment. The enrollment data will contain baseline information about demographic characteristics, qualifying injury or illness, recent employment, and past SSDI benefit receipt. These data also will contain personal identifiers, which will permit us to link these records to other administrative data sources and facilitate follow-up surveys.

All states will provide the same enrollment data within the same timeframe; however, the process for submitting those data will differ depending on the state's evaluation design. The four states using individual random assignment will submit their data through Mathematica's Confirmit system as part of the random assignment process. Vermont, which has a clustered random assignment design, will submit enrollment data in monthly batches.

RETAIN enrollment data

- Personal identifiers
- Contact information
- Demographic characteristics (age, sex, race/ethnicity, and preferred language)
- Injury/illness characteristics (date of onset, ICD-10 code, whether work-related, whether new or worsening of an existing condition, part of a workers' compensation claim, result of an accident or injury)
- Socioeconomic characteristics (education, prior income, income sources)
- Employment characteristics (employment status, work hours, job tenure, time since last worked, industry of pre-injury/illness employer, occupation in pre-injury/illness job)
- Other characteristics (veteran status, health status, health insurance coverage, history of SSDI and SSI)

Timing: At enrollment

2. SSA program data

SSA maintains several program files that it regularly updates to monitor eligibility for and administer SSDI and SSI payments. These files include detailed information about applications to the programs as well as beneficiaries' demographic, impairment, and program characteristics. We plan to use these data in the impact analyses as a source of both baseline information (such as whether a RETAIN enrollee received SSA disability benefits in the past for a prior injury or illness) and outcome information (such as whether they apply for SSI or SSDI in the year following enrollment). These data will provide key information for the evaluation to assess whether and to what extent RETAIN programs succeed in reducing applications for SSI/DI.

Social Security Administration (SSA) program data

- Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI) applications
- SSDI and SSI awards
- SSDI and SSI benefit amounts
- Enrollee characteristics (for enrollees who have ever applied for SSA program benefits)

Timing: Monthly

SSA program files include monthly reports on eligibility and benefits paid in a year. As in previous evaluations, SSA staff will obtain program information from several internal administrative systems that

we will develop into analytic files for the analysis. We will obtain application, award, and benefit data from those files periodically throughout the demonstration.

3. State UI wage records

Unemployment insurance wage records

- Employed (any earnings in a quarter)
- Quarterly earnings

Timing: Quarterly

We will obtain data on enrollees' employment and earnings outcomes from state UI agencies' wage records. These data are available on a quarterly basis. States will submit individual-level wage records for six quarters surrounding enrollment in the study, including the quarter prior to enrollment, the quarter of enrollment, and four post-enrollment quarters. These data will provide key information for the evaluation whether and to what extent RETAIN programs succeed in increasing enrollees' employment and earnings.

We will use the UI data in the impact analyses as a source for baseline information about earnings before enrolling in RETAIN and for information about earnings outcomes after enrollment. We will construct a measure that reflects earnings in the quarter prior to enrollment. This baseline measure will serve as a proxy for enrollees' employment quality pre-injury and can be used to create subgroups to compare the impacts of RETAIN on high-earning and low-earning workers who experience injury or illness. We will construct outcome measures that reflect any earnings, and the amount of earnings, recorded in state UI wage records in the quarters following enrollment to estimate the trajectory of RETAIN employment impacts over time.

Although information on employment and earnings are available from other data sources, such as IRS earnings data and enrollee surveys, the state UI wage records have key advantages. Unlike the IRS earnings data that are annual in nature, the quarterly UI records enable us to construct more granular measures of employment and earnings. The UI wage records are also more readily available, usually with a two-quarter lag. Compared with self-reports of earnings on enrollee surveys, state UI wage records are likely to provide more accurate measures of total covered earnings, including overtime and bonus pay, because employers usually have systems in place that link these reports directly to their existing payroll systems.[2] UI records are not subject to respondent recall bias, which becomes a greater threat the further in the past the information being queried represents.

4. Internal Revenue Service (IRS) earnings data

Internal Revenue Service earnings data

- Earnings in the calendar year prior to enrollment
- Earnings in the calendar year after enrollment

Timing: Annual

SSA's Master Earnings File (MEF) will be the source of data on annual earnings in Social Security-covered employment, as compiled from IRS records. These data will represent all earnings reported to the IRS for all RETAIN enrollees. We will use these data to construct several measures of employment outcomes, such as whether the worker reported any earnings to the IRS in the

[2] State UI wage records do not cover the employment of self-employed persons, most independent contractors, military personnel, federal government workers, railroad employees, some part-time employees of nonprofit institutions, employees of religious orders, and some students employed by their schools. Therefore, state UI wage records do not capture some types of employment that can be captured via survey self-reports.

calendar year after enrollment and the amount of their earnings over that period. SSA staff will conduct the analyses of the MEF data based on specifications provided by Mathematica.

The IRS data have two important limitations. First, they measure income for the full calendar year. This limits the ability to construct standard observation periods for enrollees who enter RETAIN at different times as well as their usefulness for assessing short-term impacts (reflecting periods shorter than a calendar year). A second limitation of the IRS data is that, because of time lags in their completeness and availability, we will lack data for the calendar year following random assignment for those who enroll in RETAIN in 2024 (the final year during which enrollment will occur). For example, workers' earnings in 2025 would be reported in July 2026 (99 percent update) at the earliest. Therefore, we will not be able to access MEF data on the calendar year following random assignment for individuals who enrolled in 2024 in time for the impact study.[3]

5. Enrollee surveys

We will conduct two surveys of RETAIN enrollees to capture information that is not available from other data sources. Enrollee survey topics include employment and earnings, economic well-being, training and services, and health and functioning (Exhibit III.2). We will conduct the first survey 2 months after enrollment and the second survey 12 months after enrollment. The 2-month survey will begin in January 2022 and end in July 2024. The 12-month survey will begin in December 2022 and end in June 2025.

Both surveys will have a similar structure and content designed to provide key outcome data for the impact and benefit-cost analyses. To minimize burden on survey respondents and because the outcomes are more relevant later after enrollment, we only include the economic well-being questions in the second round of the survey. Although we will collect information on employment and earnings from UI wage records and SSA administrative files, the surveys will collect more detailed information about enrollees' current employment—including weekly hours worked, employer benefits, employer accommodations, and occasional work activities or side jobs. For respondents not currently working, the survey will ask about reasons for not working, job search, and RTW expectations.

Exhibit III.2. Enrollee survey topics

Topic
Employment and earnings
Illness or injury that limits work
Employment status and duration of employment with main employer
Wage, hours, and benefits
Employer accommodations
Reasons for medical leave
Reasons for not working now
Job search
Return-to-work expectations
Participation in the gig economy

[3] We expect that 2024 enrollees will be a small share of all enrollees because enrollment will occur only during the first three months of 2024.

Topic
Economic well-being*
Receipt of SNAP
Receipt of SSI/SSDI
Receipt of unemployment compensation
Receipt of workers' compensation and disability insurance
Receipt of retirement income
Total household earnings
Other sources of income (including TANF, child support or alimony, investment income, or money from others)
Training and services
Use of employment services
Participation in training
Use of RTW coordinator and satisfaction with services
Health and functioning
Physical and mental health status
Health insurance
Work limitations and pain
Prescribed opioid pain relievers
General information
Marital status

* Economic well-being questions are not included in the first round of the enrollee survey.

RTW = return-to-work; SNAP = Supplemental Nutrition Assistance Program; TANF = Temporary Assistance for Needy Families.

We will attempt to survey all RETAIN enrollees in each survey round. Respondents will have the option to complete the survey in the mode that they prefer—by web, paper, or over the telephone with a professional interviewer. We will offer enrollees an incentive of $30 for each round of the survey, with $5 pre-paid to encourage survey completion and the remaining $25 paid after completing the survey.

B. Treatment enrollee service use data

RETAIN's theory of change posits that early coordination of health care and employment-related supports and services will help injured or ill workers remain in the workforce. We will use RETAIN service use data, collected by the RETAIN projects, to document treatment enrollees' interactions with RTW coordinators and use of other services. To complement the service use data collected by the RETAIN projects, we will conduct interviews with a group of treatment enrollees to understand their experiences with the project's services.

1. RETAIN service use data

Each RETAIN project will track the provision of services to treatment enrollees. The projects will document contacts between the RTW coordinator and the treatment enrollee, health care provider, and employer. These data will also document the provision of technical assistance, referrals to key services such as career supports, and outcomes such as whether the treatment enrollee has returned to work (Exhibit III.3). The projects will submit these data quarterly to Mathematica. We will use the data for the

process and participation analyses to understand the frequency with which treatment enrollees engage in RETAIN services and assess the project's fidelity to the program model.

Exhibit III.3. Topics addressed by the RETAIN service use data

Domain/topic
RTW coordinator services
RTW communication with enrollee, employer, health care provider, and workforce professionals
Establishment of a RTW plan
Discussion of RTW plan with health care provider, employer, or other parties
Functional capacity evaluation
Follow-up communication after RTW
Employer and health care provider engagement
Perceived level of employer engagement (from perspective of RTW coordinator)
Perceived level of health care provider engagement (from perspective of RTW coordinator)
Workplace accommodations
Technical assistance to identify or implement workplace accommodations
Type of workplace accommodation
Program services and referrals
Job search services
Training services
Third-party case management services
On-site job analysis
Ergonomic assessment
Transitional work opportunity
Other employment service
Referral to employment-related supports
Referral to services beyond RETAIN after six months

RTW = return to work.

2. Interviews with treatment enrollees (service users and non-users)

We will conduct 30-minute telephone interviews with 15 treatment enrollees in each state approximately one year after enrollment begins. We will use RETAIN service use data to purposefully select treatment enrollees with different levels of service use including (1) enrollees who did not use any RETAIN services after enrollment, (2) enrollees who used only RTW coordination services, and (3) enrollees who used RTW coordination services and other RTW services. We will ensure that the selected sample includes a variety of medical conditions and some representation of women and racial and ethnic minorities.

The aim of these interviews is to understand treatment enrollees' experiences with RETAIN services. The interviews will gather information about enrollees' motivations for participating in RETAIN, perceptions of services received through RETAIN, and their goals and attitudes about staying at work or returning to work (Exhibit III.4). For enrollees that did not receive post-enrollment services, we will ask about the reasons for not using RETAIN services. We will use the information collected during these interviews for

the process and participation analyses to assess enrollees' engagement in and satisfaction with the RETAIN services. The data may also help us identify which aspects of RETAIN services may be associated with service use outcomes. We will provide interviewees with a $30 gift card in appreciation of their time and participation.

Exhibit III.4. Topics covered during interviews with treatment enrollees

Interview topic
Motivation for participating in RETAIN
Employment goals
Attitude toward staying at work or returning to work
Services received from the RTW coordinator
Services received from the medical provider
Non-RETAIN services received
Interest and perceived ability to return to work
Reasons for not using additional RETAIN services

RTW = return to work.

C. Program implementation data

Documenting each state's approach to implementing their project is a central component of the evaluation. Although each state's RETAIN project is centered around core service components, the states differ in how they are implementing these strategies to account for differences in their employment, insurance, and health care landscapes. To capture this variation, we will collect data on RETAIN projects through several methods and at multiple points in time. Data collection approaches include a RETAIN medical provider survey, site visits and staff interviews, and staff activity logs. Exhibit III.5 describes the timeline for collecting these primary data.

Exhibit III.5. Summary of sources of data on program implementation

Data source	Dates of collection
Program documents	Throughout the demonstration
RETAIN medical provider survey	15 months after enrollment begins
Site visits and interviews with RETAIN administrators and program staff	Round 1: 4–6 months after enrollment begins Round 2: 18 months after enrollment begins
RETAIN staff activity log	15–17 months after enrollment begins
Program performance data	Throughout the demonstration

1. Program documents

Administrative documents provide a good source of information on the design of the awardees' projects and the contexts in which the projects are being implemented. We will review the information in the documents listed below to describe in detail each project environment, the different components and activities that make up the project, and implementation progress.

Awardee Phase 2 applications. We will review awardee applications for information on program inputs, program components and counterfactual services, implementation strategies, and factors that influence implementation (including lessons learned from Phase 1). Program inputs include the geographic region and environment surrounding program implementation; program partners; resources to implement the program, including staff; and the target population. Implementation strategies are activities, such as continuous quality improvement processes, intended to support implementation.

Published state materials. We will gather and review information on the environment surrounding RETAIN service delivery, including local employment service providers, economic conditions, and other state support programs.

We will develop a document review protocol to guide a systematic review of information from the applications, cooperative agreements, and state materials. Exhibit III.6 shows the types of information we will review. As a part of this review, we will develop a graphical representation of how each state recruits, screens, and enrolls workers and delivers RETAIN services. We will use the findings of the document review to tailor RETAIN administrator and program staff interview guides.

Exhibit III.6. Topics to be included in document review

Program inputs
Awardee organization
Award amount
Award timeframe
Program environment
Program partners and role
Leadership structure
Key staff (funded under the program)
Target populations
Geographic area
Program components
Identifying eligible workers
Recruiting and enrolling eligible workers
Training medical providers
Incentivizing medical providers
Coordinating return-to-work services
Communicating among RETAIN stakeholders
Monitoring treatment enrollee progress
Implementing workplace accommodations
Retraining or rehabilitating
Counterfactual services
Program context
Factors that influence implementation
Continuous quality improvement processes
Project champions
Phase 1 lessons learned

2. RETAIN medical provider survey

We will administer a survey to RETAIN medical providers to collect information on provider awareness of participation in the demonstration, engagement in RETAIN training, and approach to delivering services (Exhibit III.7). We will administer the survey 15 months after enrollment begins. Providers will have the option to participate by web, paper, or over the telephone, and in English or with a Spanish translation. The survey will have a 14-week field period and feature a total incentive of $50.

Exhibit III.7. Topics covered in the RETAIN medical provider survey

Domain/topic
Provision of health care services
Primary role
Years in practice
Percentage of patients using workers' compensation benefits
Use of return-to-work best practices
Experience working with a service coordinator
Barriers to providing optimal patient care
Provider experience in RETAIN
Awareness of practice participation in RETAIN
Share of patients enrolled in RETAIN
Burden of RETAIN administrative requirements
Receipt of formal training for RETAIN
RETAIN training topics
Satisfaction with training and impact on interactions with all patients
Barriers to RETAIN success
Factors discouraging practice participation
Recommendation for RETAIN adoption by other providers

We will survey up to 100 medical providers per state. The respondent universe is all RETAIN medical providers in each state. In states implementing an individual random assignment design, this will include all medical providers who serve an individual assigned to the treatment group. In the state with a clustered random assignment design, this will include all medical providers assigned to the treatment group. If a state enrolls more than 100 medical providers, we will draw a sample of providers that is roughly representative of all providers enrolled in that state. Potential strata include geographic region, practice size, and provider type or specialty.

3. Site visits and interviews with RETAIN administrators and program staff

We will conduct two, multiple-day site visits to each state to interview RETAIN administrators and program staff about their experiences implementing the projects and their recruitment and enrollment processes (Exhibit III.8). We will conduct the first round of site visits four months after states began enrollment. The goals of the first site visit are to (1) document the entities that are partnering to support the implementation and delivery of RETAIN services, (2) describe recruitment and enrollment processes and deviations from the planned processes, (3) describe how the RETAIN program components are being operationalized, and (4) identify factors that hindered and facilitated service delivery. The second round

of site visits will occur approximately 18 months after states began enrollment; at that time, we expect service delivery to be relatively stable. The goals of the second site visit are to (1) describe changes made to the topics covered in the first site visit, (2) assess fidelity to the program model, (3) describe plans for sustaining the program model, (4) collect information about program costs, and (5) describe counterfactual services. We will visit the same providers during both site visits to help us understand the changes made to their projects as implementation progressed.

Exhibit III.8. Topics covered during site visit interviews

Domain/topic	First site visit	Second site visit
Background		
Respondent's role in the organization and tenure in position	X	
Respondent's role in RETAIN	X	
Organization's role in RETAIN	X	
Other staff in organization involved in RETAIN (number and roles)	X	
RETAIN's fit with organizational structure	X	
Organizational partnerships		
Roles of partner organizations in RETAIN	X	
Organization and management structure of RETAIN	X	X
Nature of communication and collaboration among organizations involved in RETAIN	X	X
Gaps or weaknesses in program partnerships	X	X
Strengths or facilitators of program partnerships	X	X
Recruitment and enrollment activities		
Strategies used to identify workers who are eligible for RETAIN	X	X
Strategies used to recruit and enroll RETAIN subjects into the demonstration	X	X
Challenges to recruiting and enrolling participants into the demonstration	X	X
Facilitators of recruiting and enrolling participants into the demonstration	X	X
Progress toward recruitment and enrollment goals	X	X
Reasons why eligible workers choose not to participate in RETAIN	X	X
Fidelity to recruitment and enrollment activities		
Adaptations to recruitment and enrollment activities and reasons for adaptations	X	
Program operations and service delivery		
Training medical providers on occupational health best practices	X	X
Providing incentives to medical providers for using occupational health best practices	X	X
Coordinating return-to-work services for treatment enrollees	X	X
Communicating among RETAIN stakeholders about treatment enrollees return to work	X	X
Monitoring treatment enrollees medical and employment progress	X	X
Retraining or rehabilitating treatment enrollees	X	X
Changes made to program operations and service delivery during RETAIN	X	
Barriers and facilitators to program implementation		
Challenges to operationalizing program components	X	X
Facilitators of operationalizing program components	X	X

Domain/topic	First site visit	Second site visit
Role of and need for technical assistance		
Training received	X	X
Gaps in training	X	X
Strengths of training	X	X
Receptivity and responsiveness to technical assistance	X	X
Fidelity to program model		
Adaptations to program operations and services delivery		X
Data collection procedures		
Functions and utility of the CA's MIS, and data entry processes	X	
Service delivery sustainment after demonstration		
Plans for sustaining service delivery		X
Anticipated challenges for sustaining service delivery		X
Counterfactual service environment		
Services similar to RETAIN available to workers who are eligible for RETAIN	X	X
Similarities and differences to RETAIN program services	X	X
Program costs		
Project budget and funding		X
Additional revenue sources for RETAIN aside from CA funds		X
Financial reporting processes		X
Participant payment or incentives		X
Staff and volunteer time dedicated to RETAIN		X
Overhead and capital costs allocated to RETAIN		X
Subcontract or vendor payments		X

CA = cooperative agreement; MIS = management information system.

During both visits, we will conduct interviews with RETAIN administrators, project staff paid directly by RETAIN (such as intake and RTW coordinators), and staff from partnering entities who can provide insights on implementation experiences. We will also conduct state-specific interviews with the programmatic technical assistance providers. We will conduct the interviews one-on-one or in small groups of two to three staff per session. We will schedule the interviews for up to 60 minutes each.

We will take several steps to ensure consistent, high-quality data collection across site visits. Before conducting the site visits, we will provide training to all site visitors. At a minimum, this training will cover the following topics:

- Process analysis study design and the role of site visits in data collection and addressing the research questions
- The components of the RETAIN program model
- The interview guides
- Best practices and pitfalls of interviewing

In addition to the training before site visits, each site visitor will conduct one line-by-line review of another site visitor's transcript. The purpose of reviewing a single transcript for each site visitor is to

provide individual site visitors with concrete examples of how they could improve their interviews and reinforce strengths.

During the second round of site visits, we will collect data on RETAIN program costs through a cost-focused interview. During the cost-focused site visit interview, the site visitor will describe the types of cost data required for the evaluation and the time period for which the data are needed (either a calendar year or a fiscal year), and request that the project director confer with accounting staff to gather the data and report it to us using a standardized form (Exhibit III.9). These forms will capture labor costs, other direct costs, indirect costs, and the implicit costs of donated labor and materials—by program component and partner organization. The project director and accounting staff will complete the forms following the site visit and return them to the site visitor. The site visitor will conduct follow-up telephone and email discussions with the project director and accounting staff as necessary to ensure their understanding of our cost data needs and to obtain answers to our outstanding cost-related questions.

Exhibit III.9. Template for collecting data on program costs

For the period from _____ to _____, please provide estimates of:

1. Total costs incurred by your program: $_____

2. Breakdown of the above total costs by:

- a. Personnel or labor costs
  - i. Wages: $_____
  - ii. Fringe benefits: $_____
- b. Direct costs of providing services to participants
  - i. Incentive payments (number of participants x incentive per participant): $_____
  - ii. Payments on behalf of participants receiving services (e.g., contractor payments): $_____
- c. Indirect costs (e.g., administrative costs and overhead costs): $_____

3. Economic costs that do not appear in the budget:

- a. Volunteer hours: _____ per _____
- b. Value of donated goods: $_____
- c. Leveraged resources: $_____

4. Staff activity logs

We will use staff activity logs to collect information about the time staff spend in different activities, which will help us understand program implementation and how RETAIN labor costs are allocated across different program components. The logs will capture staff time spent in activities that are core to the RETAIN program, including recruitment and enrollment, case management, RTW services, care coordination, and communication with and training for health care providers and employers. The logs will also capture staff time spent administering the project (evaluation, training, and other management), traveling, on leave, and doing other project activities outside the above activities. We will use these data, along with information about the costs of specific service components, to estimate the costs of delivering RETAIN services and inform the benefit-cost analysis.

We will send the staff activity logs to project staff via email. We will collect staff activity logs from both administrative and direct service staff for two one-week periods prior to the second site visit—when we

expect projects to be operating in a steady state (that is, neither starting up nor winding down).[4] Two periods are necessary to provide a representative sample of staff's time use and to account for potential seasonal differences in project activities.

5. Program performance data

We will use the program performance data that DOL requires states to submit each quarter to document the implementation of RETAIN program components. The performance data includes a quarterly narrative progress report where states document their major activities and accomplishments for the current quarter period and their plans for the next reporting quarter. We will review the reports for information on the progress awardees are making on implementing program components, as well as challenges encountered during implementation and deviations from proposed activities. The program performance data also includes individual-level records on treatment enrollees and providers. We described the enrollee data above as RETAIN service use data (Exhibit III.3). DOL also requires states to submit provider-level data that includes provider type, provider specialty, the date the provider completed the first training, and the date the provider completed all training.

[4] We expect to ask approximately 13 staff from each project to complete the logs, depending on the number of staff and the different staff categories involved in delivering services.

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IV. Process Analysis

A strong process analysis will be critical to understanding the successes and challenges of implementing the RETAIN projects, interpreting project impacts, and building knowledge on how policymakers and program sponsors could replicate and scale RETAIN services. The RETAIN program model includes a set of components that research suggests are the foundation for effective early intervention services for individuals at risk of developing disabilities that inhibit their ability to work. Each of the five states selected to continue and expand their RETAIN project in Phase 2 of the demonstration has taken the RETAIN program model and developed its own approach to implementing the components. The process analysis will document each states' approach to implementing the components and assess how and how well the components were implemented and any deviations from the planned approach.

In Exhibit IV.1, we list the RETAIN program components as described in DOL's RETAIN Funding Opportunity Announcement. As key inputs to RETAIN, they will guide the process analysis. The RETAIN program model comprises multiple components, some of which are essential for achieving intended program outcomes, which we refer to as core components. We have organized the core components into "medical provider" and "return-to-work coordination" services categories. These components support the key services for all RETAIN treatment enrollees. Other components are more peripheral to the program model, which we refer to as "other return-to-work services," and might not be needed by each enrollee. For example, not all enrollees will need retraining or rehabilitation services.

Exhibit IV.1. RETAIN program components

Service category	Program component	Definition
Medical provider services		
	Training medical providers	Training delivered to medical providers that covers occupational health best practices and alternatives to opioids for pain management.
	Incentivizing medical providers	Providing incentives to medical providers for using occupational health best practices and alternatives to opioids for pain management.
Return-to-work coordination services		
	Coordinating return-to-work services	Coordinating the delivery of medical and employment services, including the development and implementation of a return-to-work plan. Coordination of return-to-work services is usually led by a return-to-work coordinator.
	Communicating among RETAIN stakeholders	Communicating among all RETAIN stakeholders about the treatment enrollee returning to work. This communication should occur early on in the delivery of RETAIN services to support the treatment enrollee in returning to work as soon as possible.
	Monitoring treatment enrollee progress	Tracking and monitoring the treatment enrollee's medical and employment progress.

Service category	Program component	Definition
Other return-to-work services		
	Supporting workplace-based interventions	Accommodating the treatment enrollee's return to work. This might include modifying their duties and adjusting their schedule, tasks, and physical worksite.
	Retraining or rehabilitating enrollees	Retraining or rehabilitating the treatment enrollee when they can no longer perform their prior job or suitable alternate work.

Source: The Department of Labor's RETAIN Funding Opportunity Announcement.

In this chapter, we describe our plan for the process analysis. In the sections that follow, we identify the research questions and the data sources we will use to address them, outline our plans for data analysis, and present a structure for reporting the findings.

A. Research questions and data sources

We will address four overarching research questions and related, more refined research questions, using multiple sources of data described in Chapter III. To comprehensively document how RETAIN was implemented, the process analysis will involve analyzing data collected from a range of RETAIN stakeholders—including state administrators, project staff, medical providers, and treatment enrollees—using both interviews and surveys. Below, we describe the data sources we will use to address each research question.

1. What were the characteristics of the environment surrounding RETAIN implementation that could influence RETAIN's service delivery and impact on outcomes?

To help understand the environment surrounding each state's RETAIN project, we will use project documents, site visit interviews, and published economic and service indicators (such as the unemployment rate and employment rate among people with disabilities) to describe the environment surrounding the RETAIN project and other services available to the control group and workers who were not enrolled in RETAIN (Exhibit IV.2). As a starting point, we will review each state's project documents, including their Phase 2 application and published state materials to summarize information on economic conditions and the policy environment, employment service providers, and other services that provide support to workers at risk of leaving the labor force because of an illness or injury. During the site visit interviews with administrators, we will discuss the other services that are similar to RETAIN that might affect RETAIN service delivery and the eventual outcomes of enrollees. During these interviews, we will discuss the difference between the services RETAIN provides to enrollees and the services enrollees would have if not enrolled, or the services available to the control group. In light of the global COVID-19 pandemic and its potential impact on the workforce, we will describe how the states delivering RETAIN services may have differentially experienced the pandemic. Collectively, these findings will provide important context on factors that could influence eventual RETAIN outcomes.

In the second round of data collection, we will document updates to the environment surrounding RETAIN projects. We will focus on factors that substantively changed from the first round of interviews.

Exhibit IV.2. Research questions and data sources for describing the environment surround RETAIN implementation

Research question	Data source		
	Project documents	Site visit interviews	Published economic and service indicators
What economic conditions, employment environment, and other state-specific characteristics might have influenced RETAIN's service delivery and impact on outcomes?	X	X	X
How were RETAIN services distinct from services available to the control group?	X	X	
What was state's experience with the COVID-19 pandemic? How did the COVID-19 pandemic influence RETAIN's service delivery and impact on outcomes?	X	X	X

2. How did states define, recruit, and enroll eligible workers?

Assessing how states define, recruit, and enroll eligible workers is critical to ensuring the RETAIN projects are reaching the target populations and effectively enrolling workers who will benefit from the intervention. Information about the target populations will also help us interpret the impact findings. We will use the project documents and site visit interviews to address research questions about worker eligibility for RETAIN services and recruitment and enrollment processes (Exhibit IV.3). The project documents will provide us with an understanding of these processes that we will verify during site visits. We will use the second round of data collection, including the project documents and site visit interviews, to assess how states changed these processes during the demonstration. We will also use RETAIN enrollment data to document the number of enrollees and patterns in enrollment across time. In addition, we will conduct interviews with treatment enrollees, both service users and non-users, to summarize their experiences with recruitment and enrollment and their motivations or apprehensions for enrolling and engaging in RETAIN services.

Exhibit IV.3. Research questions and data sources for describing RETAIN target populations and recruitment and enrollment processes

Research question	Data source			
	RETAIN enrollment data	Project documents	Site visit interviews	Interviews with treatment enrollees
What populations of workers did states target for recruitment into the project and what was the rationale for the target population? How and why did this change during the project?		X	X	
How were states screening workers to target for recruitment into the project and what was the rationale for the screening criteria? How and why did this change during the project?		X	X	

Research question	Data source			
	RETAIN enrollment data	Project documents	Site visit interviews	Interviews with treatment enrollees
How were states recruiting eligible workers into the project? How and why did this change during the project?		X	X	
How many workers enrolled in RETAIN? How did enrollment change during the project?	X			
Which recruitment and enrollment strategies were more or less effective and why?			X	
What motivated treatment enrollees to enroll in RETAIN? What other factors influenced the enrollment rate?			X	X
How was informed consent collected in each state and was it collected consistently and accurately across participants?			X	
What challenges did states face collecting enrollment data?	X		X	

3. How did states implement the RETAIN program components? To what extent did service providers adopt, or deviate from implementing, the RETAIN program components as planned at the start of Phase 2?

We will use the project documents, site visit interviews, RETAIN medical provider survey, and program performance data to describe each state's approach to implementing RETAIN and the extent to which service providers adopted or deviated from implementing the RETAIN program components as planned at the start of Phase 2 (Exhibit IV.4). We will use the project documents and site visit interviews to describe how states and service providers implemented RETAIN, including training medical providers, incentivizing medical providers, coordinating RTW services, communicating among RETAIN stakeholders, and monitoring treatment enrollee progress. We will use the program performance data to examine the extent to which service providers adopted RETAIN program components as planned and assess patterns of service delivery. We will use results of the RETAIN medical provider survey to examine where medical providers adopted or deviated from delivering RETAIN services.

Deviations from states' planned approaches for implementing RETAIN could happen for positive reasons, such as correcting a weakness through the use of continuous quality improvement, or for negative reasons, such as inadequate staff training. Thus, a careful assessment of deviations from the planned program components will be an important piece of the process analysis to understand if program components were implemented as intended and if not, in what ways did they deviate and for what reasons. Findings to the second and third research questions will provide SSA and DOL with a check on the recruitment and implementation processes to identify areas requiring corrective actions and will inform our interpretations of RETAIN's impacts on outcomes.

Exhibit IV.4. Research questions and data sources for describing the extent to which service providers are implementing the RETAIN program components as planned

Research question	Data source			
	Program documents	Site visit interviews	Program performance data	RETAIN medical provider survey
What service providers did the workforce agency leading each state's RETAIN program partner with to implement and deliver RETAIN services?	X	X		
How did states implement medical provider services?	X	X		
To what extent did states deviate from implementing medical provider services as planned?			X	X
How did states implement return-to-work coordination services?	X	X		
To what extent did states adopt return-to-work coordination services as planned?			X	
How did states implement other return-to-work services? How did this change over time?	X	X		

4. What factors (facilitators and barriers) enhanced or hindered RETAIN implementation?

Describing the implementation experiences of stakeholders involved in delivering RETAIN services is important for identifying factors that contributed to or inhibited implementation of RETAIN. We will use site visit interviews, treatment enrollee interviews, and the RETAIN medical provider survey to understand stakeholders' experiences with putting RETAIN into operation and assess factors that influenced implementation (Exhibit IV.5). During the first round of site visits, we will assess how states scaled their program models, including establishing partnerships and hiring staff, to meet their expanded enrollment targets in Phase 2. We will assess initial service delivery and factors that enhanced or hindered initial service delivery. We will use the second round of site visits to assess changes during the demonstration and factors that influenced service delivery during full implementation of the program—when we expect service delivery to be relatively stable. We will also assess states' and providers' plans for sustaining RETAIN services.

We will use the results of the RETAIN medical provider survey to complement findings from staff interviews about states' experiences with implementing RETAIN and the interviews with treatment enrollees' about their experiences with RETAIN services. The medical provider survey results can corroborate, or refute, implementation facilitators and barriers that we identify via the interviews by quantitatively showing the barriers medical providers experienced in the delivery of RETAIN services.

Exhibit IV.5. Research questions and data sources for describing states' experiences with implementing the RETAIN programs and treatment enrollees' experiences with RETAIN services

Research question	Data source		
	Site visit interviews	Interviews with treatment enrollees	RETAIN medical provider survey
What factors hindered RETAIN service delivery? How did states and service providers overcome these challenges?	X		X
What factors enhanced RETAIN service delivery?	X		X
What are states' plans for sustaining RETAIN services after the project?	X		
How did the employment environment influence enrollees' experiences with RETAIN services? How did the COVID-19 pandemic influence enrollees' experiences with RETAIN services?	X	X	
To what extent did enrollees experience delays in their receipt of requested services?		X	

B. Analytic approach

We will take a structured approach to collecting and analyzing data across RETAIN states. We will use the theory of change for the RETAIN evaluation as a starting point for documenting findings related to the implementation of individual program components (see Exhibit I.2). Within this approach, we will document each state's target populations and RETAIN implementation. In addition, we will generate findings specific to individual program components to identify areas requiring corrective actions that can be made to RETAIN projects to improve implementation and program effectiveness.

We will use an implementation framework to guide qualitative data collection and analysis about states' experiences implementing the RETAIN program components. We will analyze quantitative program performance data and RETAIN medical provider survey data to assess the extent to which states implemented the RETAIN projects as planned. In the next chapter, we discuss how we will analyze quantitative RETAIN service use data to assess the intensity of enrollees' service use. We will integrate our qualitative and quantitative results from these analyses to support triangulation and corroboration on factors that may have contributed to or inhibited each state's implementation of its RETAIN project.

1. Using an implementation framework to organize and synthesize qualitative data collection findings

We will use the Consolidated Framework for Implementation Research (CFIR) to guide our findings about factors that influenced RETAIN implementation. CFIR is a conceptual framework developed to guide systematic assessment of implementation to identify factors that may influence intervention implementation and effectiveness (Damschroder et al. 2009). CFIR contains 39 constructs that reflect the evidence base of factors most likely to influence intervention implementation. The 39 constructs are organized into five domains that reflect different levels of the settings in which implementation occurs. In Exhibit IV.6, we present the CFIR domains and example constructs of implementation experience.

Exhibit IV.6. CFIR domains and example constructs of implementation experience

Domain	Example constructs
1. Characteristics of the program component	Perception of the intervention's design quality.
	Perception of the complexity of implementing the intervention, including duration, scope, and disruptiveness.
2. Characteristics of the service provider organization	Perception of staff resources available for providing services.
	Relative priority of the program compared to other organizational goals.
3. Characteristics of the region served by the state's cooperative agreement	County or state policies.
	Perception of resources available in the community to support workers.
	The degree to which the grantee/service provider is connected to other (external) organizations.
4. Characteristics of individuals involved in implementation	Individual's attitudes toward and value placed on the intervention as well as familiarity with facts, truths, and principles related to the intervention.
5. Strategies to support implementation	Technical assistance providers affiliated with an external entity who facilitates implementation decisions.
	Individual(s) from within the organization who have been formally appointed with responsibility for implementing an intervention.
6. Characteristics of enrollees	Needs and resources.
	Attitudes toward and understanding of the program.

CFIR = Consolidated Framework for Implementation Research.

We adapted CFIR in that we promoted one of the existing 39 constructs, patient needs and resources, into a separate sixth domain: characteristics of enrollees. We promoted this construct in recognition of service users' involvement in RETAIN service delivery being an important factor in implementation. Based on our experience with using CFIR in the Promoting Opportunity Demonstration's process analysis, separating service user needs and resources into a separate domain will help us to generate a more comprehensive understanding of RETAIN implementation.

In Exhibit IV.7, we provide an overview of our approach to qualitative data collection and analysis. During the site visits, we will tailor our interview questions to each respondent's role in RETAIN. We will ask respondents open-ended questions about their experiences implementing each program component, and we will probe on barriers and facilitators to implementation.

To generate formative feedback about each state's experiences early on in Phase 2, we will develop site visit summaries for each state after the first round of site visits. We will use the program components, as defined in Exhibit IV.1, as the structure for a standard site visit summary template. To address the research questions about identifying eligible workers and recruiting and enrolling them into the project, we will also include recruitment and enrollment as project activities in our definition of the RETAIN program components. In the site visit summaries, we will describe the initial implementation of individual program components, as discussed by interview respondents. We will submit the summaries within two weeks of each visit.

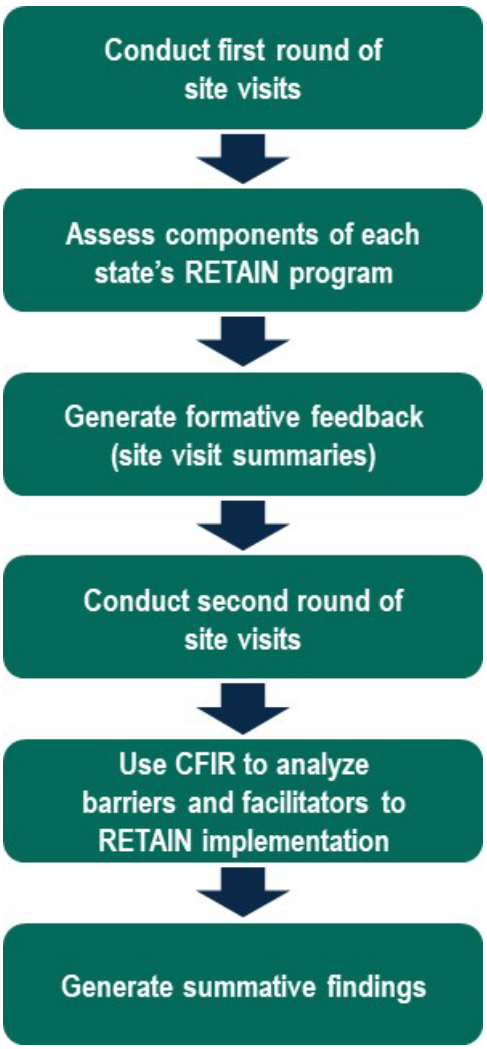
To generate summative findings about factors that influenced the implementation of the RETAIN projects in each state, we will use the program components (including the identifying eligible workers and recruiting and enrolling eligible workers) and CFIR to systematically analyze interview transcripts after the second round of site visits and guide interpretation of barriers and facilitators to implementing each

component of the RETAIN program. Coding the individual program components will enable us to assess each distinct program component when different types of respondents may have different levels of involvement and different perspectives.

All data collected during the second round of site visits will be coded using NVivo 12. During initial coding to organize data for analysis, we will adapt the CFIR codes to fit the context of RETAIN implementation and remove any CFIR codes that are not reflected in transcripts. The CFIR codes will be different from the component codes in that they are theoretical and will require the coder to interpret the data and apply the CFIR code that reflects the barrier or facilitator being described.

To ensure the coders are judicious in applying the fewest codes possible when interpreting the meaning of each data segment, we will use the codebook to guide coders through three decisions for each data segment.[5,6] First, the coder will decide which program component is being discussed and assign the appropriate component code. Second, the coder will identify which one of the six CFIR domains is reflected in the principal implementation theme in the data (for example, a characteristic of the program component versus a characteristic of the service provider organization). Third, the coder will determine which CFIR code within the identified domain is reflected in the data segment and assign the appropriate code.

Exhibit IV.7. Overview of approach to qualitative data collection and analysis



In the initial stages of coding, a team of coders will review interview transcripts and code data together. During this process, the team will refine code definitions, develop coding rules, and resolve disagreements to achieve consistency in their application of the codes to the data. After achieving consistency in applying codes to the data, we will divide the remaining transcripts among the team. After each member codes five different transcripts, the team will code the same sixth transcript independently and meet to discuss and resolve coding discrepancies to ensure ongoing reliability in coding. We will use NVivo to code and organize the data for analysis.

After coding the data, we will summarize coded data segments in matrices for a case study (a case being a state) analysis of patterns of barriers and facilitators relating to each RETAIN program component. The analytic matrices will facilitate simultaneous assessment of a large volume of data so we can make comparisons of administrators' and staffs' experiences and identify similarities and differences in RETAIN implementation for each combination of program component and CFIR code. This highly structured analysis process will ensure that all team members will follow the same steps and use the same

[5] A data segment contains an interview question and response.
[6] Mathematica will include the codebook as an appendix in the Process Report.

research questions and definitions to guide their judgement when interpreting the data and identifying salient themes.

2. Integrating quantitative data

Quantitative data on the implementation of RETAIN program components will supplement the qualitative data from the site visits and round out the understanding of each state's implementation. To facilitate data analysis, we will create variables for relevant research questions and data elements. For example, we will analyze the RETAIN medical provider survey results to assess medical providers' participation in training related to RETAIN and medical providers' interactions with the RTW coordinator. We will analyze the program performance data to assess RTW coordinators' communication with treatment enrollees' employers and support with implementing workplace accommodations for enrollees. We will present descriptive statistics on the adoption of these actions intended to support RETAIN program components. The analysis of enrollee service use in the participation analysis will complement this assessment of the extent to which services were delivered as planned.

During analysis, combining quantitative and qualitative data could be especially important for connecting findings from the process, participation, and impact analyses. The qualitative assessment of factors that emerged within each state to inhibit or contribute to RETAIN implementation and the quantitative assessment of service providers' adoption of RETAIN program components could inform the interpretation of RETAIN's eventual outcomes. If treatment enrollee employment rates are lower than expected, we will have comprehensive information about implementation to inform our interpretation of the findings.

C. Reporting findings

We will present the findings from the process study in two deliverables: the Early Assessment Report and the Process Analysis Report. The Early Assessment Report will include descriptions of each state's start-up activities and initial RETAIN implementation and provide formative feedback about recruitment and implementation processes to identify areas requiring corrective action. The Process Analysis Report will provide summative analysis of implementation after the states have had time to fully implement their RETAIN project. In both reports, we will have separate chapters for each RETAIN state. These reports will also include the participation analysis described in Chapter V.

The quality of the process analysis hinges on our ability to collect information on a broad range of topics from multiple qualitative and quantitative sources and synthesize it within a framework that addresses the research questions. We will describe processes using tabulations of quantitative data about the extent to which providers adopted RETAIN program components and delivered services as intended. We will support those findings with evidence of barriers and facilitators generated from our analysis of qualitative data, guided by CFIR. We will use section headings, tables, and other graphics to support our narrative and message key findings.

1. What were the characteristics of the environment surrounding RETAIN implementation that could influence RETAIN's service delivery and impact on outcomes?

In Exhibit IV.8, we illustrate our approach for summarizing the information on economic conditions, the policy environment, and the potential impact of the COVID-19 pandemic in each RETAIN state. We will augment the quantitative information summarized in Exhibit IV.8 with a summary of qualitative information obtained during site visit interviews about how other services available may have affected

RETAIN service delivery and influenced RETAIN's impact on outcomes. We will describe the services that are generally available to workers whose employment is disrupted due to an illness or injury in each state, as well as the economic conditions and disability policies that might affect their return to work. We will also document services provided to the control group enrollees. Taken together, we will report on characteristics of the environment surrounding RETAIN implementation that may contribute to or inhibit the detection of impacts outside the control of the project.

Exhibit IV.8. RETAIN program environment in [state]

Indicator	[State]
Economic conditions	
Quarterly unemployment rate (Q, Year)	
Employment rate among people with disabilities (Year)	
Median earnings for people with a disability as a percentage of those without a disability (Year)	
Percentage of working-age population applying for SSDI in (Year)	
Percentage of working-age population receiving SSDI in (Year)	
Percentage of working-age population applying for SSDI due to MSK condition (Year)	
Industrial mix (Year)	
Construction	
Manufacturing	
Policy environment	
Workers' compensation total benefits paid per $100 of covered wages (Year)	
Mandatory temporary disability insurance (Y/N)	
State-administered workers' compensation program (Y/N)	
Right to Work Law (Y/N)	
Percentage of employed workers represented by unions (Year)	
Prevalence of COVID-19	
Quarterly COVID-19 cases (Q, Year)	

MSK = musculoskeletal.

2. How did states define, recruit, and enroll eligible workers?

In Exhibit IV.9, we present our approach for summarizing information about target populations and the recruitment and enrollment processes in each state. We plan to analyze the recruitment and enrollment at two points in time. In June 2022, we will analyze the recruitment and enrollment processes after the first round of site visits. At that time, we will also analyze enrollment indicators from November 2021 (the start of enrollment) through April 2022. In July 2023, we will analyze recruitment and enrollment indicators through April 2023. We will describe changes to the definition of the target population and recruitment and enrollment processes between the first and second site visits.

We will also compare the characteristics of enrollees (see Exhibit V.4. in Chapter V) to each states' definition of the target population and eligibility criteria to assess deviations from states' and services providers' use of the eligibility criteria during enrollment. These findings will inform the interpretation of impacts on outcomes, particularly if states are serving enrollees who do not meet the target criteria and therefore may not benefit from RETAIN services as expected.

Exhibit IV.9. RETAIN recruitment and enrollment in [state]

Element of recruitment and enrollment	[State]
Recruitment and enrollment process	
Definition of target population	
Eligibility criteria	
Outreach strategy	
Referral source	
Recruitment and enrollment indicator	
Number of prospective enrollees	
Enrollment target	
Percent of enrollment target enrolled	

3. How did states implement the RETAIN program components? To what extent did service providers adopt, or deviate from implementing, the RETAIN program components as planned at the start of Phase 2?

In Exhibit IV.10, we illustrate how we will summarize our assessment of the extent to which service providers adopted or deviated from implementing the RETAIN program components as planned at the start of Phase 2. This summary will include information about the expected adoption of key service elements when relevant for understanding services delivered to enrollees. For example, we will include the intended frequency of communication between an RTW coordinator and an enrollee and the expected number of days between their enrollment and the development of an RTW plan.

Exhibit IV.10. Description of RETAIN program components in [state]

RETAIN program component	[State]
Recruitment and enrollment	
Training medical providers	
Incentivizing medical providers	
Coordinating return-to-work services	
Communicating among RETAIN stakeholders	
Monitoring treatment enrollee progress	
Supporting workplace-based interventions	
Retraining or rehabilitating	

In Exhibit IV.11, we show the type of information obtained from the RETAIN medical provider survey and program performance data elements organized by RETAIN program component. We will describe the extent to which service providers adopted, or deviated from implementing, RETAIN program components and assess patterns of adoption. Following the theory of change for the RETAIN evaluation, described in Chapter I (Exhibit I.1), we will organize results around each RETAIN program component. We will corroborate findings about adoption of the RETAIN program components with qualitative findings from the analysis of states' experiences with implementing the RETAIN projects. This will enable us to draw conclusions about barriers and facilitators that may have influenced the extent to which service providers adopted the RETAIN program components as planned.

Taken together, findings about barriers and facilitators to implementation and service providers' adoption of RETAIN program components will inform the interpretation of RETAIN's impacts on outcomes. In addition, if these findings indicate that program component was not implemented as planned and the evaluation team does not assess this to influence outcomes, we may be able to draw conclusions about the extent to which a specific program component is or is not necessary to achieve intended outcomes.

Exhibit IV.11. Service provider adoption of RETAIN program components in [state]

RETAIN program component	[State]
Training medical providers	
Provider attended formal training for RETAIN (percent)	
Provider attended formal training that covered occupational health best practices (percent)	
Provider attended formal training that covered assessing barriers for returning to work (percent)	
Provider attended formal training that covered other training topics (percent)	
Provider found training related to RETAIN helpful (percent)	
Provider changed interactions with patients after attending training (percent)	
Coordinating return-to-work services	
Provider works with a return-to-work-coordinator (percent)	
Working with a return-to-work coordinator makes provider's overall job easier (percent)	
Provider faced challenges working with a return-to-work coordinator (percent)	
Communicating among RETAIN stakeholders	
Treatment enrollee's return-to-work coordinator communicated with employer (percent)	
Treatment enrollee's return-to-work coordinator communicated with health care provider (percent)	
Treatment enrollee's return-to-work coordinator communicated with workforce professional (percent)	
Supporting workplace-based interventions	
Provider shares information with employers about injured workers, when appropriate (percent)	
Provider discusses possible work accommodations for injured workers with employers, when appropriate (percent)	
Service user's return-to-work coordinator provided technical assistance to implement workplace accommodation (percent)	
Retraining or rehabilitating	
Medical provider refers patients to outside public or private programs (percent)	

Source: RETAIN Medical Provider Survey, Program Performance Data.

4. What factors (facilitators and barriers) enhanced or hindered RETAIN implementation?

Describing the implementation experience of administrators and program staff involved in delivering RETAIN services is central to understanding how the RETAIN project was implemented and building knowledge on how to replicate and scale RETAIN services. In Exhibit IV.12, we illustrate how we will present our summative assessment of factors that contributed to or inhibited the delivery of RETAIN services. In addition to summarizing perceptions in text before the table, we will indicate in the table which CFIR constructs emerged as factors that contributed to RETAIN implementation (facilitators) and factors that inhibited RETAIN implementation (barriers). Presenting the patterns of facilitators and barriers across the CFIR domains will support the identification of key factors that influenced RETAIN implementation. Identifying those key factors will contribute to understanding how to support successful replication and scaling of RETAIN services in other settings.

Exhibit IV.12. Factors that enhanced or hindered the implementation of RETAIN program components in [state]

CFIR domain	RETAIN program component						
	Medical provider services		Return-to-work coordination services			Other return-to-work services	
	Training medical providers	Incentivizing medical providers	Coordinating return-to-work services	Communicating among RETAIN stakeholders	Monitoring treatment programs	Implementing workplace accommodations	Retraining or rehabilitating
Characteristics of the program component							
Perception of the quality of RETAIN services							
Perception of the benefits of RETAIN services							
Characteristics of the service provider organization							
Perception of RETAIN's fit with existing workflows							
Perception of staff resources to support RETAIN services							
Characteristics of the state							
Extent to which stakeholder organizations are networked							
Characteristics of individuals involved in program implementation							
Familiarity with RETAIN							
Strategies to support program implementation							
Dedicated RETAIN meetings							
Improvement processes							
Characteristics of workers served by the program							
Workers' needs and resources							
Workers' understanding of RETAIN services							

Note: For each RETAIN component, we will use F to indicate facilitator and B to indicate barrier, where applicable.

CFIR = Consolidated Framework for Implementation Research.

V. Participation Analysis

The participation analysis is critical for understanding who enrolls in each RETAIN project, the extent to which treatment enrollees engage with project services, and the characteristics of the providers delivering project services. We will use information from the participation analysis to (1) understand the extent to which RETAIN projects are reaching the target population, (2) understand the characteristics of providers delivering RETAIN services, (3) document whether treatment enrollees receive key program components, (4) inform the interpretation of impact and benefit-cost estimates, and (5) assess whether the findings from the RETAIN demonstration generalize to a broader population.

In this chapter, we describe the plan for the participation analysis. Specifically, we describe the research questions and the data sources we will use to address them, discuss the analytic approach, and present a structure for reporting the findings.

A. Research questions and data sources

The participation analysis will address three overarching research questions:

1. What are the characteristics of RETAIN enrollees, and how do enrollees compare to reference populations?
2. To what extent do treatment enrollees use RETAIN services?
3. What are the characteristics of providers delivering RETAIN services?

The analysis will rely on data from multiple sources to address these questions: RETAIN enrollment data, RETAIN service use data, interviews with treatment enrollees, RETAIN medical provider survey, site visit interviews, and program performance data. In the sections that follow, we describe how we will use these data to address each research question.

1. What are the characteristics of RETAIN enrollees?

Enrollee characteristics are a factor in the RETAIN theory of change (Exhibit I.2) because they can influence a project's implementation and effectiveness. For each RETAIN project, we will examine enrollee characteristics to investigate whether the project recruited the types of individuals it aimed to serve within the timeframe recommended for early interventions, and whether the enrollees are representative of the broader population of people at risk of long-term disability.

We will assess enrollee characteristics using RETAIN enrollment data (Exhibit V.1). We will describe enrollees in terms of their characteristics at the time of study enrollment, focusing on their demographics, work history, and nature of their injury or illness. The findings will help us to understand whether a project targeted or excluded individuals with certain characteristics (whether or not it explicitly planned for this); the extent to which it was successful at enrolling certain subsets of eligible people; whether projects are truly intervening early, as the RETAIN program model intends; and the extent to which the findings from the RETAIN evaluation are generalizable to other populations.

To provide context for enrollee characteristics, we would ideally like to compare the RETAIN enrollees to the overall population of individuals at-risk for SSDI program entry. Because this population of individuals at-risk for SSDI entry cannot be identified, we will benchmark the characteristics of the RETAIN enrollees against two reference populations: individuals in the Current Population Survey who

report a work-limiting disability and recent SSDI awardees. These comparisons will help SSA understand the ways in which RETAIN enrollees differ from other populations of workers at risk of long-term disability and therefore how lessons from the RETAIN demonstration may or may not apply to other populations. We will compare each state's enrollees to both state-specific and national samples of these reference populations; the former will provide a localized benchmark while the latter will help us understand how representative each project's enrollees are of the broader at-risk population nationwide.

Exhibit V.1. Research topics and data sources to describe the characteristics of RETAIN enrollees

Research question	RETAIN enrollment data	Secondary data
What are the demographic characteristics of RETAIN enrollees?	X	
What were the labor market experiences (employment status, time since last worked, earnings, job tenure, industry, and occupation) of RETAIN enrollees prior to enrollment?	X	
What is the nature (type and timing) of enrollees' injuries or illnesses?	X	
How do enrollees compare to each state's target population?	X	
How do the characteristics of participants compare to the characteristics of reference populations of individuals with work-limiting disability and recent SSDI awardees?	X	X

Note: Secondary data sources include the Current Population Survey and SSA program data on SSDI applicants.

2. To what extent did treatment enrollees use RETAIN services?

The impacts of an intervention can depend crucially on the extent to which treatment enrollees use the intervention services. Therefore, it is important to understand the incidence and frequency of treatment enrollees' use of RETAIN services and the reasons behind them. Similarly, it is important to understand whether some types of enrollees were more likely to use services. These findings can inform the interpretations of RETAIN's impacts.

We will investigate treatment enrollees' use of RETAIN services by analyzing the RETAIN enrollment and service use data, and conducting interviews with treatment enrollees about their service use experiences (Exhibit V.2). We will use the RETAIN service use data to assess the incidence and frequency with which treatment enrollees engage in RETAIN services and the duration of their service use. We will use the interviews with treatment enrollees to understand their perspectives on RETAIN services and reasons for using or not using RETAIN services. We will use RETAIN enrollment data and service use data to compare the characteristics of enrollees who do and do not use services.

Exhibit V.2. Research questions and data sources to describe treatment enrollees' use of RETAIN services

Research questions	RETAIN enrollment data	RETAIN service use data	Interviews with treatment enrollees
How many treatment enrollees use RETAIN services?		X	
How does treatment enrollees' use of RETAIN services change over time?		X	
What is the average time between enrollment and a treatment enrollees' first use of RETAIN services?		X	
What is the average duration of treatment enrollees' use of RETAIN services?		X	
To what extent do treatment enrollees experience delays in the receipt of RETAIN services?		X	
What do treatment enrollees like about RETAIN services? Why do treatment enrollees continue to use RETAIN services?			X
What do treatment enrollees not like about RETAIN services? Why do they not use RETAIN services? Why do they withdraw from RETAIN?			X
To what extent were services provided directly by RETAIN staff or through referrals?		X	
How do the characteristics of treatment enrollees who use RETAIN services compare to those of treatment enrollees who do not use RETAIN services?	X	X	

3. What are the characteristics of providers delivering RETAIN services?

Examining the providers and provider organizations that participate in service delivery for a RETAIN project will contribute to understanding how the RETAIN program model was implemented in the state. The findings can help identify potential influences that provider characteristics and motivations have on the implementation of RETAIN and projects' impacts on enrollee outcomes, and they can also inform considerations for the replication and scaling of RETAIN projects in the future.

We will use the RETAIN program performance data, medical provider survey, and site visit interviews to describe the characteristics of RETAIN service providers and their perspectives about RETAIN project implementation (Exhibit V.3). We will assess the potential influence of provider characteristics on RETAIN service delivery and impacts on outcomes.

Exhibit V.3. Research questions and data sources to describe the characteristics of providers delivering RETAIN services

Research question	Program performance data	RETAIN medical provider survey	Site visit interviews
How many service providers deliver RETAIN services?	X		
What types of service providers receive RETAIN training and deliver RETAIN services?	X	X	
What motivated service providers to participate in RETAIN?			X
What discouraged service provides from participating in RETAIN?		X	X

B. Analytic approach

We will use a mixed methods approach to collecting and analyzing data across RETAIN projects for the participation study. We will use descriptive and multivariate methods to analyze quantitative data to investigate enrollees' and providers' participation in RETAIN. When appropriate, we will conduct statistical tests of differences—for example, when comparing characteristics between treatment and control group enrollees or between service users and non-users. In addition, to understand the reasons behind participation or non-participation, we will collect and analyze qualitative data, following the analytic approaches for qualitative data described in Chapter IV.

We will be careful to note the different samples underlying each of the analyses that we conduct as part of the participation study. We will note that enrollee data for the participation study will comprise a time-restricted sample of early enrollees, and thus might be disproportionately influenced by implementation realities such as a slow start-up period for a project. When examining service providers, we will pay attention to differences in the underlying samples for program performance data (all participating providers), the medical provider survey (survey respondents), and site visit interviews (a non-random sample).

In analyzing enrollees' service use, we will develop categories of service use intensity that reflect key service components in each project's logic model. For example, in addition to examining a measure of "any service use" beyond enrollment, we will examine measures of specific services as well as use of any services beyond core RTW services. We will report the share of treatment enrollees in each category of service use and examine any differences in the characteristics of enrollees in different categories. We do not anticipate that many individuals will withdraw from RETAIN, but if there are a sizable number who withdraw, we will also examine the characteristics of this population.

The participation analysis will complement the process and impact analyses by generating findings about program inputs (such as characteristics of treatment enrollees and service providers) and program outputs (such as treatment enrollee engagement in service use). For example, if we do not find any impacts on enrollee outcomes, it may be because the RETAIN projects were enrolling individuals who were unlikely to benefit from RETAIN services or because treatment enrollees did not use RETAIN services.

C. Reporting findings

We will present the findings from the participation study in two deliverables: the Early Assessment Report and the Process Analysis Report. The Early Assessment Report will include an analysis of the characteristics of each RETAIN project's enrollees in the first six months of enrollment. We will also examine service receipt during this start-up period and provide formative feedback about recruitment and implementation processes to identify areas requiring corrective action. The Process Analysis Report will provide a summative analysis of enrollment, service use, and provider characteristics over the first eighteen months of implementation. In both reports, there will be a chapter for each RETAIN state.

The exhibits that follow illustrate how we will analyze and present the findings of the participation analysis by overarching research question.

1. What are the characteristics of RETAIN enrollees?

Exhibit V.4 shows the types of characteristics we will tabulate using RETAIN enrollment data.

Exhibit V.4. Characteristics of RETAIN enrollees in [state]

Characteristic	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Sex					
Male					
Female					
Age					
20–29 years					
30–39 years					
40–44 years					
45–49 years					
50–54 years					
55–59 years					
Mean (years)					
Race/ethnicity					
Hispanic					
White, non-Hispanic					
Black, non-Hispanic					
Asian, non-Hispanic					
More than one race					
Other, non-Hispanic					
Preferred language					
English					
Spanish					
Other					

Characteristic	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Education					
Less than a high school diploma					
High school diploma, GED or certificate of completion					
Occupational certificate/license or 2-year college degree					
4-year college degree or post-graduate degree					
Injury or illness characteristics					
Type of illness (based on ICD codes)					
New condition					
Injury/illness result of accident					
Work-related injury/illness					
Injury/illness part of a workers' compensation claim					
Time between injury or illness and enrollment					
Health insurance					
Private					
Medicaid					
Medicare					
Other					
Recent work history					
Employment status					
Not employed					
Self-employed					
Employed					
Length of time since last worked					
Currently working					
No more than a week					
More than a week but no more than a month ago					
More than a month but no more than three months ago					
More than three months ago					
Hours per week usually worked before injury/illness					

Characteristic	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Tenure at current job					
Not employed					
Less than 6 months					
6 months–1 year					
1–2 years					
2–5 years					
5+ years					
Occupational classification of pre-injury/illness job					
Management, professional or related					
Service					
Sales and office					
Natural resources, construction, or maintenance					
Production, transportation, or material moving					
Economic well-being					
Earnings in the four quarters before enrollment ($)					
Earned $1000 or more in at least one of the past 12 months					
Receipt of income other than earnings:					
Social Security disability (SSDI or SSI)					
Veteran's benefits					
Workers compensation					
Employer-provided or other private disability insurance					
Other public programs					
Applied for or received SSDI or SSI in the past three years					

Source: RETAIN enrollment data.

Exhibit V.5 shows the types of characteristics we will analyze to compare RETAIN enrollees to other reference populations (workers with a disability and SSDI awardees).

Exhibit V.5. Characteristics of RETAIN enrollees and reference populations

Characteristics	State-level	State-level reference populations		National reference populations	
	RETAIN enrollees	People with a disability (CPS)	SSDI awardees	People with a disability (CPS)	SSDI awardees
Sex					
Age					

Characteristics	State-level	State-level reference populations		National reference populations	
	RETAIN enrollees	People with a disability (CPS)	SSDI awardees	People with a disability (CPS)	SSDI awardees
Race/ethnicity					
Preferred language		NA		NA	
Education					
Injury or illness classification		NA		NA	
Recent work history		NA		NA	
Occupational classification of pre-injury/illness job		NA		NA	
Income					
SSDI history		NA		NA	

Source: RETAIN enrollment data, CPS, and SSDI data.

CPS = Current Population Survey, NA = Data not available

2. To what extent do treatment enrollees use RETAIN services?

Exhibit V.6 presents RETAIN service use measures that will enable us to describe the extent to which treatment enrollees used RETAIN services in each state. If service use is low during the early implementation, the data presented in this table will help to identify areas where states can make improvements to service delivery. If service use continues to be low later in the implementation period, it will inform RETAIN's impact on enrollee outcomes.

We will use multivariate methods to assess correlations between service use and characteristics of treatment enrollees. Specifically, we will examine correlations between the characteristics of enrollees in Exhibit V.4 and the service use outcomes in Exhibit V.6. These correlations are especially important if there are any disparities in service use across different enrollee characteristics, as these disparities might relate to the RETAIN projects or the environment surrounding the projects (such as other services available in the local community). These findings will provide insights into who uses a project's services and the intensity of their service use.

Exhibit V.6. Treatment enrollees' service use or receipt of RETAIN services in [state]

RETAIN service use and data outcomes	Percentage
Received any services beyond enrollment	
Has an established RTW plan	
Time elapsed between enrollment and established RTW plan (days)	
Received job search service	
Received any training	
Received third-party case-management services	
Participated in a transitional work opportunity	
Received functional assessment	
Received on-site job analysis	

RETAIN service use and data outcomes	Percentage
Received ergonomic assessment	
Received workplace accommodation	
Exited RETAIN	
Duration of services (if exited)	
Referred to services beyond RETAIN after six months	

Source: RETAIN service use data.

RTW = return-to-work.

3. What are the characteristics of provider organizations delivering RETAIN services?

Exhibit V.7 shows the characteristics of providers delivering RETAIN services we will analyze from the RETAIN program performance data and medical provider survey data. The data in this table will help us identify potential influences that provider characteristics have on implementation of RETAIN projects and impacts on outcomes.

We will use multivariate methods to assess correlations between the characteristics of providers and the service use outcomes in Exhibit V.6 and provider adoption of program components (Exhibit IV.11). These correlations might help to identify disparities in service use and provider adoption of RETAIN components and could provide insights into the providers that successfully deliver RETAIN services.

Exhibit V.7. RETAIN provider characteristics in [state] (percentage unless otherwise specified)

All providers	Provider Characteristics in [State]
Number of providers	
Type of provider	
Provider specialty	
Medical providers	**Provider Characteristics in [State]**
Primary role	
Years in practice	
Patient visits covered by worker's compensation in a typical week	
Patient visits that involved delivering services to RETAIN enrollees in a typical week	

Source: Program performance data and RETAIN medical provider survey.

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VI. Impact Analysis

The RETAIN evaluation's impact analysis will provide rigorous evidence on each RETAIN project's effectiveness in improving the labor market outcomes of individuals who acquire or are at risk of developing disabilities that inhibit their ability to work and reducing their reliance on disability programs. This chapter presents the design of and key considerations for the RETAIN impact analysis. We identify the research questions, describe the analytic approach, present the outcome domains and measures, assess statistical power, describe approaches for addressing other impact estimation issues, and present a structure for reporting the findings.

The evaluation of each project will use an experimental study design, and we will examine outcomes from survey and administrative data that we will collect during the first year after enrollment. We will estimate short-term impacts (two months after enrollment) when RETAIN is hypothesized to have a positive effect on enrollee service use, mental and physical health, and likelihood of staying at work, returning to work early, or making plans to return to work in the near future. We will also estimate impacts one year after enrollment, a period we refer to as the intermediate term, when RETAIN is expected to increase employment and earnings, reduce entry into SSA programs, and improve well-being —if the projects achieve their goals.

A. Research questions

The objective of the impact analysis is to produce evidence on whether the RETAIN projects were successful in meeting their goals of improving employment and earnings and reducing reliance on disability programs. Accordingly, the impact analysis will answer the following four research questions:

1. **What are the impacts of RETAIN on short-term outcomes such as enrollees' use of services and early return to work?** Do enrollees who are offered RETAIN services receive more care coordination services, employment-related services, and advice about workplace accommodations than those assigned to the control group? Some treatment group enrollees might never participate in RETAIN services and others might only participate infrequently. In addition, some control group members might seek similar services from other providers. The impact analysis will determine whether the RETAIN projects increased the use of services relative to what treatment group enrollees would have used in the absence of RETAIN. We will also examine whether treatment group enrollees were more likely to stay at work, return to work, or make plans to return to work by two months after enrollment. This information will help us understand the projects' outputs and short-term outcomes, as well as provide context for interpreting the estimated impacts on other outcomes and understanding why some projects were more effective than others.
2. **What are the impacts of RETAIN on enrollees' employment, earnings, and SSDI/SSI program entry?** These estimates will capture the overall objective of helping workers who have experienced a work-threatening injury, illness, or disability to stay at work or return to work quickly and avoid disability entry. Because we will examine outcomes in the year after enrollment in RETAIN, we will consider the impacts on SSDI and SSI applications as leading indicators of program entry, because program entry after application can take longer than one year.
3. **What are the impacts of RETAIN on enrollee well-being?** The RETAIN projects have the potential to influence enrollee well-being along many dimensions. We will assess whether the projects improved enrollee health and functioning and overall economic well-being.

4. **Do the impacts vary according to individual characteristics, such as age, sex, and type of injury or illness?** Heterogeneity in the effects of the RETAIN projects across enrollees could have policy implications that are of interest to SSA and other stakeholders. Documenting impacts on subgroups can show whether the project is working equally well for different demographic groups or suggest ways to target future projects. We will use the states' logic models to guide selection of the subgroups we will analyze for each state.

B. Analytic approach

The evaluation of each RETAIN project uses an experimental study design. Four states are implementing an individual random assignment study (Kansas, Kentucky, Minnesota, and Ohio), and one state (Vermont) is implementing a clustered random assignment study. We describe these two types of experimental study designs below:

- **Individual random assignment:** Projects recruit and enroll eligible individuals in the study. The evaluation team randomly assigns each enrollee to either a treatment group that is eligible to receive the full set of RETAIN intervention activities or a control group that is not.
- **Clustered random assignment:** Vermont enrolls clusters of medical practices to participate in the study, and the evaluation team randomly assign each cluster to either a treatment or control group. The project invites eligible individuals who see a medical provider in either the treatment or control group to enroll in the study. Individuals who see a provider that has been randomly assigned to the treatment group and who enroll in the study are considered "treatment group enrollees" and are eligible for RETAIN services. Individuals who see a provider that has been randomly assigned to the control group and enroll in the study are considered "control group enrollees" and are not eligible for RETAIN services.

A strength of both designs is the use of random assignment. Both designs intend to balance observed and unobserved characteristics of the treatment and control groups. Thus, the evaluation can attribute any observed difference in outcomes between the two groups to the intervention. In both designs, there are potential risks to balancing the treatment and control groups.

States may offer different levels of services to the control group under either design. If a control group is not eligible for any of RETAIN intervention activities, then such an evaluation design can be used to answer the question, "What is the impact of the full set of RETAIN intervention activities on enrollee outcomes, relative to business as usual?" Some states have opted to provide the control group with "light

Tradeoffs of individual and clustered random assignment

Both individual and clustered random assignment allow rigorous analysis of the impacts of RETAIN, but they each have advantages and disadvantages.

One relative advantage of clustered random assignment is reduced risk of experimental contamination, because control group enrollees will not usually interact with treatment group enrollees or RETAIN service providers. Clustered random assignment also facilitates administrative efficiency in some processes, for example, random assignment.

However, clustered random assignment has some disadvantages compared with individual random assignment, such as the potential for lower enthusiasm for recruitment or referral among control group providers, resulting in lower control group enrollment rates.

All things equal, individual random assignment also provides more statistical power to detect meaningful impacts than clustered random assignment (see below).

touch" services (see Appendices A–E). In those cases, such an evaluation design can be used to answer the question, "What is the impact of the full RETAIN intervention on enrollee outcomes, relative to offering light touch services?"

1. Conducting random assignment

Each project is responsible for recruiting enrollees for the evaluation, and the evaluation team conducts random assignment. For states using individual random assignment, the evaluation team uses Confirmit to conduct random assignment of each new enrollee. For Vermont, which is using clustered random assignment, the evaluation uses a statistical software package to randomly assign each new medical practice that enrolls in the evaluation.

Because each state has a random assignment design, we expect that, on average, treatment and control enrollees will have similar baseline characteristics. However, there is always a risk that a small number of characteristics can be imbalanced across the two groups by chance. This can be concerning if these imbalanced characteristics are potentially confounding—that is, if they are independently associated with the outcomes of interest. If that occurs, then even with a random assignment design, the difference in outcomes between the treatment and control groups may not be solely attributable to the treatment. To mitigate this risk, our evaluation team stratifies random assignment on key characteristics. Before conducting random assignment, we define groups of random assignment units that are similar in characteristics at the time of random assignment. Then, we randomly assign units within each group to either the RETAIN group or control group. For the states with individual random assignment, we stratify on age, sex, and length of time since last employed.[7] For Vermont, we use the size of the provider practice for stratification when randomly assigning the clusters.

2. Assessing the baseline equivalence of the treatment and control groups

We will use RETAIN enrollment data to assess whether there are any differences between the treatment and control groups (Exhibit VI.1). Individual random assignment designs and clustered random assignment designs should produce balanced treatment and control groups. However, a small number of differences can occur by chance. For this reason, we will conduct statistical tests to assess whether there are any differences between the treatment and control groups. To the extent we find such differences, the approach we will use to estimate impacts enables us to control for them using regression adjustment.

Exhibit VI.1. Baseline characteristics of study participants (percentage unless otherwise noted)

Variable	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Sex					
Male					
Female					

[7] In Kansas, we also stratify by workforce region to align with the state's implementation plan.

Variable	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Age					
20–20 years					
30–39 years					
40–44 years					
45–49 years					
50–54 years					
55–59 years					
Mean (years)					
Race/ethnicity					
Hispanic					
White, non-Hispanic					
Black, non-Hispanic					
Asian, non-Hispanic					
More than one race					
Other, non-Hispanic					
Preferred language					
English					
Spanish					
Other					
Education					
Less than a high school diploma					
High school diploma, GED, or certificate of completion					
Occupational certificate/license or 2-year college degree					
4-year college degree or post-graduate degree					
Injury or illness characteristics					
Type of illness (based on ICD codes)					
New condition					
Injury/illness result of accident					
Work-related injury/illness					
Injury/illness part of a workers' compensation claim					
Time between injury or illness and enrollment					
Recent work history					
Employment status					
Not employed					
Self-employed					
Employed					

Variable	All (A)	Treatment (B)	Control (C)	Difference (B – C)	*p*-value
Length of time since last worked					
Currently working					
No more than a week					
More than a week but no more than a month ago					
More than a month but no more than three months ago					
More than three months ago					
Hours per week usually worked before injury/illness					
Tenure at current job					
Not employed					
Less than 6 months					
6 months–1 year					
1–2 years					
2–5 years					
5+ years					
Occupational classification of pre-injury/illness job					
Management, professional, or related					
Service					
Sales and office					
Natural resources, construction, or maintenance					
Production, transportation, or material moving					
Economic well-being					
Earnings in the four quarters prior to enrollment ($)					
Earned $1000 or more in one of the past 12 months					
Receipt of income other than earnings:					
Social Security disability (SSDI or SSI)					
Veteran's benefits					
Workers' compensation					
Employer-provided or other private disability insurance					
Other public programs					
Applied for or received SSDI or SSI in the past three years					

Source: RETAIN Enrollment data.

Note: The structure of this table will be the same regardless of the state's evaluation design.

3. Estimating project impacts

The RETAIN impact analysis will produce intent-to-treat (ITT) impact estimates. In other words, it will provide evidence on how each RETAIN project affected the outcomes of enrollees who were eligible for their services, regardless of whether they participated in those services. Such ITT impact estimates are widely used in part because the estimates address a policy-relevant research question: What is the effect of offering a program in the real world, where some individuals will not participate or will not receive the full dose of program services offered to them?

We will use multivariate regression models to compute regression-adjusted impact estimates. If we find differences in baseline characteristics between the treatment and control groups, we will adjust for the differences by including those characteristics in the regression models. Regression adjustments will usually improve the statistical precision of impact estimates (Raudenbush et al. 2007). All regression models will include a core set of covariates across all projects. This core set will include controls for enrollees' age, sex, race/ethnicity, and labor market experiences and past earnings, as well as characteristics upon which random assignment was stratified. For each state, we may identify a select set of additional covariates to be included in the regressions for that state. For example, if a state's target population includes workers with varying types of injuries and illnesses, we will adjust for injury or illness types. If our baseline equivalence check detects any statistically significant differences in characteristics between the treatment and control group in a state, we will include that characteristic as a covariate in the regression models for that state.

The exact specification of the regression models will depend on the evaluation design in each state. To estimate the adjusted project impact for an individual random assignment study, we will estimate a regression model of the following form:

$$Y_i = \alpha + \beta Treatment_i + \lambda X_i + \in_i ,$$

Here, *i* denotes the individual observation, $Treatment_i$ denotes the indicator for assignment to the treatment group, X_i denotes the vector of covariates, and $\in_i$ denotes the error term. We will address the possibility of heteroskedasticity of unknown form by using the method proposed by White (1980) to produce heteroskedasticity consistent standard errors.[8] The coefficient β denotes the parameter of interest, from which we will derive our estimate of the project impact. For a clustered random assignment state, the regression model will include fixed effects for each cluster.

To estimate the impacts, we will use linear regression models. For categorical variables, we will use multinomial logit models and estimate the project impact on each category by calculating the average marginal effect on each category that is implied by our estimate of β.

To estimate impacts for subgroups, we will add interaction terms to the regression model. The interaction terms will allow us to assess whether RETAIN had an impact on the outcome for each subgroup. We can also use these models to assess differences in the impacts between subgroups. We will treat all subgroup findings as secondary (that is, they will receive less weight in the text than the primary outcomes for the full enrollee sample).

[8] Heteroskedasticity refers to the circumstance in which the variability of an outcome is unequal across a range of values of a control variable used in the regression model.

For each impact estimate, we will report whether it is statistically significantly different from zero. To test for statistical significance, we will calculate a one-tailed *t*-statistic to test the null hypothesis that there is no difference between the regression-adjusted means for the treatment and control groups.[9] The associated *p*-value reflects the probability of obtaining the observed impact estimate when the null hypothesis of no effect is true. We will consider an impact to be statistically significantly different from zero if the *p*-value is smaller than 0.10.

In addition to our primary ITT impact estimate, we will also consider whether to estimate supplementary treatment-on-the-treated (TOT) impact estimates. The TOT estimates address the question, "What is the effect of RETAIN services on people who utilized them?" This answer could help us understand the impacts that might occur if a future version of RETAIN better targeted services to those most likely to use them. The value of a TOT analysis will depend on the share of enrollees in each project that engage with project services and the intensity and patterns of their engagement. As we complete the site visits and assess the alignment between RETAIN service use data and project logic models, we will discuss the value of and options for the TOT analysis with SSA.

C. Outcome domains

We will examine enrollees' outcomes in five domains: (1) employment and earnings, (2) SSA program participation, (3) use of training and services, (4) economic well-being, and (5) health and functioning. The outcome measures will cover roughly the one year after enrollment in the evaluation and will be obtained through the evaluation's two follow-up surveys (at 2 and 12 months after enrollment), as well as those that that will be obtained from federal and state program administrative systems (see Chapter III). To accurately determine the effectiveness of each RETAIN project and to assess whether some projects were more effective than others, we will analyze a comprehensive set of short- and intermediate-term outcomes.

Primary vs. secondary outcomes

We differentiate between primary and secondary outcomes to distinguish the measures that should receive the most policy focus in the ultimate evaluation of the program's efficacy. This designation is a transparent way to avoid concerns about data mining when assessing impacts on the broad range of outcomes. This focus on a limited set of outcomes also mitigates a potential issue with multiple comparisons-that is, the chance of finding a statistically significant finding across several outcomes by chance. Based on the RETAIN theory of change (Exhibit I.2), we selected three primary outcomes to test the projects' efficacy: employment in the fourth quarter after enrollment, earnings in the fourth quarter after enrollment, and applications for SSDI or SSI during the 12 months after enrollment.

1. Short-term outcomes

The first and most basic questions the impact analysis will answer are "Were treatment group members more likely than their control group counterparts to receive services?" and "Are there early signs that treatment members are more likely to return or plan to return to work?" We will also consider whether there are any differences in the health and functioning between treatment and control enrollees. In Exhibit VI.2, we list the outcome domains for the short-term impact analysis and associated measures. All of the

[9] For categorical outcomes, we will use two-sided chi-square tests to determine whether the distribution of estimated project impacts was statistically significantly different from zero.

outcome measures for the short-term impact analysis will be drawn from the enrollee survey conducted two months after enrollment.

Exhibit VI.2. Measures and data sources for short-term outcomes, by domain (measured at the time of the Round 1 survey, unless otherwise specified)

Domain/outcome	Data source
Training and services	
Worked with a care or other service coordinator in the past two months	Enrollee Survey R1
Received any employment services (searching for work, referrals to jobs or employers, help with a resume, information on how to change careers, and information on education or job training programs) in the past two months	Enrollee Survey R1
Enrolled in a training program to help them find a job, improve job skills, or learn a new job in the past two months	Enrollee Survey R1
Employment and earnings	
Received any advice about modifying their job or workplace in the past two months	Enrollee Survey R1
Employer offered them the chance to return to work with accommodations (temporary changes to work duties or work environments) after their injury or illness	Enrollee Survey R1
Talked with their doctor or other health care providers about how the injury or illness affects their ability to work in the past two months	Enrollee Survey R1
Employed	Enrollee Survey R1
Employed or planned to return to work (in the next 90 days)	Enrollee Survey R1
Connected to an employer (employed or on leave)	Enrollee Survey R1
Health and functioning	
Pain (scale)	Enrollee Survey R1
Number of poor physical health days in past month	Enrollee survey R1
Number of poor mental health days in past month	Enrollee Survey R1
Given a prescription for opioid pain relievers in the past two months	Enrollee Survey R1

Note: R1 indicates round 1 of the enrollee surveys.

2. Intermediate-term outcomes

One year after enrollment, we will assess if the demonstration is meeting its objectives of improving labor market outcomes and reducing entry into SSDI and SSI. We identified three primary outcomes based on the RETAIN theory of change—employment in the fourth quarter after enrollment, earnings during the four quarters after enrollment, and applications for SSDI or SSI benefits in the twelve months after enrollment (see Exhibit I.2 in Chapter I). We will also consider the impact of the project on other key measures of well-being, including health and functioning and overall economic well-being. This impact analysis will draw on administrative UI wage records provided by the states, SSA administrative data, and the second round of the enrollee survey. In Exhibit VI.3, we list the outcome domains for the intermediate-term impact analysis and associated measures and data sources.

Exhibit VI.3. Measures and data sources for intermediate-term outcomes, by domain (measured at the time of the Round 2 survey, unless otherwise specified)

Domain/outcome	Data source
Employment and earnings	
* Employed in the fourth quarter after enrollment	State UI wage records
* Earnings during the four quarters after enrollment	State UI wage records
Employed in Q1, employed in Q2, employed in Q3	State UI wage records
Employed in any of the four quarters after enrollment	State UI wage records
Earnings in Q1, earnings in Q2, earnings in Q3, earnings in Q4	State UI wage records
Earnings above SGA during the four quarters after enrollment	State UI wage records
Earnings above SGA in each of the four quarters after enrollment	State UI wage records
Employed	Enrollee survey R2
Employed or looking for work	Enrollee survey R2
Hourly wage (or equivalent)	Enrollee survey R2
Weekly hours worked	Enrollee survey R2
Tenure at current job	Enrollee survey R2
Offered fringe benefits (paid leave, health insurance) by employer	Enrollee survey R2
Other paid gig or occasional work	Enrollee survey R2
Employed in the calendar year after enrollment	IRS earnings data
Earnings above SGA in the calendar year after enrollment	IRS earnings data
Earnings in the calendar year after enrollment	IRS earnings data
SSA program participation	
* Applied for SSDI or SSI during the 12 months after enrollment	SSA program data
Awarded SSDI during the 12 months after enrollment	SSA program data
SSDI benefit amounts during the 12 months after enrollment	SSA program data
Awarded SSI during the 12 months after enrollment	SSA program data
SSI payment amounts during the 12 months after enrollment	SSA program data
Economic well-being	
Household income in the past month	Enrollee survey R2
Income in the calendar year after enrollment	IRS data; SSA program data
Use of public assistance benefits in the past month	Enrollee survey R2
Receipt of workers' compensation benefits in the past month	Enrollee survey R2
Receipt of short- or long-term disability payments in the past month	Enrollee survey R2
Health and functioning	
Number of poor physical health days in past month	Enrollee survey R2
Pain (scale)	Enrollee survey R2
Number of poor mental health days in past month	Enrollee survey R2
Given a prescription for opioid pain relievers in the past two months	Enrollee survey R2

Note: R2 indicates round 2 of the enrollee surveys.

* Primary outcomes.

IRS = Internal Revenue Service; Q = quarter; SGA = substantial gainful activity; UI = Unemployment Insurance.

In the intermediate term, we can measure employment and earnings from state UI wage records, IRS earnings records, and enrollee surveys. We chose state UI wage records for the source of our primary labor market outcome measures because their quarterly nature enables us to track changes over time and they also capture a uniform follow-up period for all enrollees.[10] We plan to supplement these measures with those based on the enrollee surveys and IRS data in order to paint a more complete picture of the employment experiences of enrollees. For example, state UI wage records provide a comprehensive source of quarterly data on employment and earnings; however, the records do not capture employment from outside the state. IRS earnings data can supplement the UI wage records by addressing the potential limitation of missing data from enrollees' out-of-state moves. An important limitation of the IRS earnings data is that it is only available annually. Finally, survey data capture elements of employment and earnings that are not available in either UI wage or IRS earnings records (such as type of job, wages, and access to fringe benefits).

D. Precision of estimates and analytic issues

In the sections that follow, we discuss the precision of the impact estimates and other analytic issues that will affect how we estimate project impacts.

1. Statistical power

Even with an experimental design, sample sizes must be large enough to detect impacts large enough to be meaningful to policymakers or practitioners. We have considered the statistical power that each of the above designs provides and present them below in terms of minimum detectable impacts (MDI). The MDI is the smallest impact that the evaluation design can detect with a high probability using a standard statistical test for a given sample size. If the MDI for a primary outcome is too large, there is a high chance that the evaluation will fail to detect a true effect that is large enough to be important to policymakers. Therefore, ensuring adequate statistical power (that is, sufficiently small MDIs) for primary outcomes is a critical part of evaluation design.

We used past studies of RTW programs to inform our expectations of a reasonable MDI for RETAIN. The most relevant available evidence comes from the evaluation of Washington's COHE program, which found large impacts. Compared to the comparison group patients, the relative likelihood of being off work and on disability at one year was 21 percent lower for all COHE patients and 37 percent lower for back sprain COHE patients (Wickizer et al. 2011).[11]

We calculated MDIs for one of our primary outcomes: employment rates one year after enrollment.[12] We assumed that in the absence of the intervention, 75 percent of enrollees would be employed one year after

[10] IRS earnings data on calendar year employment capture a follow-up period relative to enrollment that depends on when in a calendar year an individual enrolled in the study. For example, if an individual enrolled in the study in December rather than January, employment in the calendar year after enrollment would capture a follow-up period that began one month later versus twelve months later.

[11] The findings from COHE also indicated that larger, longer-term impacts and heterogeneous impacts might be possible. For example, a follow-up evaluation found an estimated 26 percent reduction in SSDI awards to all claimants over eight years (Franklin et al. 2015). Additionally, there was evidence that subgroups of workers with certain musculoskeletal conditions experienced larger impacts (Wickizer et al. 2011).

[12] The statistical power for detecting impacts on SSDI application rates is likely to be similar to that for employment. We expect that the outcome "Applied for SSDI applications in 12 months following enrollment" will closely (inversely) track to the outcome "Employed in the fourth quarter after enrollment." We expect these two outcomes to have a similar variance, and, therefore, similar sample sizes would be needed to detect an impact of a

enrollment.[13] That is, we expect only 75 percent of individuals randomly assigned to the control group will be employed one year after enrollment. Importantly, we use a one-tailed test to test the statistical significance of RETAIN's impact in the one direction of interest. In other words, we are testing for the possibility of a positive relationship between RETAIN and our outcome and disregarding the possibility of a negative relationship. We use a one-tailed test because we anticipate that RETAIN does no harm: it either improves or has no effect on enrollee outcomes.[14]

MDIs vary across the states based on the state's enrollment target and evaluation design (see state specific MDIs in Appendices A–E).[15] In the states with individual random assignment, we can detect an impact as small as 3.7 percentage points with 3,200 enrollees, or 5 percent relative to the control group mean. For the state with an enrollment target of 4,000 enrollees, we can detect an even smaller impact of 3.3 percentage points, or 4 percent relative to the control group mean. For the same sample size, MDIs are larger for a clustered random assignment design. In Vermont, we can detect an impact as small as 6.2 percentage points with a sample of 2,040 individuals and 68 health care practices, or 8.2 percent relative to the control group mean. The relative MDIs for RETAIN appear to be much smaller than the impacts found in the COHE evaluation, but this difference in relative MDIs is driven by the specification of the outcome variable. Notably, our primary outcome for the impact analysis considers "share of workers employed" to be the inverse of "share of workers not employed." This results in the same MDI and statistical power for a given sample size. However, relative MDIs differ because the denominator changes based on the control group mean of 75 percent employed versus 25 percent not employed.

What determines statistical power?

- **Evaluation design:** Generally, experimental designs, such as individual or clustered random assignment designs, have greater statistical power than non-experimental designs. All else equal, statistical power is highest under an individual random assignment design. The greater the variation in individuals' outcomes, the more sensitive the impact estimate will be to those in the treatment group and control group. In clustered random assignment studies, variation in outcomes between clusters introduces an additional source of variation and sensitivity.
- **Sample size:** For a given design, the larger the total sample size of individuals, the greater the statistical power. In a clustered random assignment study, statistical power also increases with the number of clusters in the study.

given size for both outcomes. We did not calculate MDIs for earnings for two reasons. First, past research does not provide strong information about the counterfactual mean or standard deviation of earnings that we can expect for RETAIN's target population. Second, because RETAIN's focus is not to increase enrollees' training, skill development, or credentials, we expect that a substantial portion of the impact on earnings will operate through the extensive margin of employment.

[13] This assumption is based on the findings of Neuhauser et al. 2018, who studied whether short-term disability claims in California can predict workers' risk of leaving the workforce and entering the SSDI program. The authors found that 12.5 percent of California State Disability Insurance (CALSDI) claimants received benefits for 12 months. Since we expect RETAIN eligibility criteria to be stricter than for CALSDI, we assumed that twice as many potential RETAIN enrollees would be unemployed after 12 months in the absence of RETAIN.

[14] This approach was approved by the Technical Working Group during its third meeting (May 2019).

[15] The MDI calculations assume (1) an equal number of treatment and control members, (2) a 95 percent confidence level with an 80 percent level of power, (3) a one-tailed test, (4) a reduction in variance of 5 percent owing to the use of regression models with the individual random assignment design, and (5) that 75 percent of workers in the control group will be employed in the fourth quarter after enrollment.

- **Outcomes in the absence of intervention:** Statistical power increases when the control group is expected to have poorer outcomes. Enrolling workers who have a low likelihood of returning to work in the absence of RETAIN would increase the evaluation's ability to detect meaningful impacts on employment status.
- **Analytic choices:** Statistical power can be increased through analytical choices—for example, by including covariates that explain a significant proportion of variance in the outcome.

2. Missing data and study withdrawals

An important analytic issue is addressing missing data. We anticipate a low level of missing data in many of our key data sources. For example, our experience with the planned administrative data is that they have few missing characteristics, particularly on outcomes.[16] We anticipate some missing data for enrollee surveys, and our approach for addressing such missing data will vary depending on the reason for the missing data (listed below):

- **Survey sampling:** If a state proposes to enroll more than 3,000 individuals, we will survey a subsample (see Chapter III) and survey data will be missing for other enrollees. We will use sampling weights to make the subsample more representative of all enrollees.
- **Survey nonresponse:** We will construct nonresponse weights to make the survey respondent sample more representative of all enrollees.[17]
- **Survey item nonresponse:** Respondents may not provide information for a survey item. For outcome measures with missing data, we will usually exclude observations with missing data from impact analyses of those outcomes.[18] For baseline measures with missing data, we will replace missing observations with the project-specific mean value of the non-missing observations for continuous or dichotomous variables, and we will add a category to indicate missing data for categorical variables.

Another potential issue is tracking withdrawals. We will track the number of study withdrawals, at what stages of the intervention they occur, and whether withdrawals vary significantly across the treatment and control group. Given the nature of the RETAIN intervention (short, intensive services), we do not anticipate a large number of study withdrawals. We will track and report withdrawals to SSA. If we

[16] Data from state UI wage records may be missing for some individuals in some quarters. If an individual is not employed in that state in a quarter, they will not have a state UI wage record for that quarter. We will impute a value of $0 for earnings in missing quarters.

[17] The nonresponse weights will be calculated using standard techniques to estimate the probability of nonresponse as a function of baseline characteristics. The nonresponse weights that reflect both the estimated probability of locating a sample member for survey as well as the estimated probability that the sample member, once located, responds to the survey.

[18] One exception is when an outcome is known to have a specific value for some cases conditional on the value of another outcome; because excluding such cases could result in biased estimates, we will use statistical imputation to fill in the missing data. For example, a survey respondent may provide data on employment status but skip a question on hours worked. Hours worked for enrollees who are not employed are known to be zero; thus, our survey measure of hours worked could only be truly missing for enrollees who have been employed. In this example, dropping cases with missing hours data would imply dropping only cases with employment, because cases without employment would be assigned a value of zero for hours worked—and this would result in an underestimate of average hours worked among all enrollees. To minimize the risk of bias from this source, we will impute values using the multiple imputation by the chained equation method (Ragunathan et al. 2001). Using this procedure, five plausible replacement values will be imputed for each missing value. All analyses will be conducted separately on each of the five imputed data sets and then the results will be combined using a standard approach (Rubin 1987), which accounts for the uncertainty associated with missing data imputations.

encounter a significant number of withdrawals (5 percent or more of all enrollees), we will compare the baseline characteristics of those who withdraw to the rest of the enrollees to assess the risk of bias due to selective attrition from the study. If we find selective attrition, we will create weights to account for attrition and test whether it affects the results.

3. Multiple comparisons

Examining effects on numerous outcomes increases the chance of falsely identifying an impact as significant (Schochet 2009). When testing multiple hypotheses, the false discovery rate—that is, the proportion of statistically significant impacts that are due to random chance rather than a true project effect—can be much greater than the level of significance (typically 5 percent) used in statistical testing. As a result, testing many hypotheses increases our risk of mistakenly attributing a statistically significant impact to be the causal effect of RETAIN. To distinguish true project impacts, our interpretation of impacts will focus on assessing (1) whether the estimated impacts are likely to represent true project effects rather than chance differences between the treatment and control groups and (2) whether the project impacts are of a substantively important magnitude.

Our main approach for mitigating multiple comparison issues is to specify a small number of primary outcomes (three) that will be used to assess each state's effectiveness. This set of measures will serve as key tests of effectiveness because they are closely aligned with the goals of the RETAIN demonstration. By selecting a targeted set of primary outcomes to serve as the main tests of project effectiveness, we reduce the likelihood of finding impacts by chance alone without significantly undermining the evaluation's statistical power to detect impacts. In interpreting findings for our reports, we will place more emphasis on the interpretation of primary outcomes than of secondary outcomes. For example, in our executive summaries, we will always present findings for the three primary outcomes in all reports that include impact estimates.

Another way of guarding against misinterpreting findings from the impact evaluation is to look for patterns of results that are consistent with the logic model underlying the intervention. From a policy perspective, the most important impacts will be those on employment, earnings, and participation in the SSDI and SSI programs. Our assessment of whether the magnitude of a project impact is important will be based on its magnitude relative to other key benefits and costs in the benefit-cost analysis.

4. Robustness checks

To test the robustness of the main impact estimates, we will conduct several sensitivity checks. These checks will help readers understand how sensitive the estimates are to different modeling assumptions and approaches. We will conduct the sensitivity checks only on primary outcomes. We will present the results of the sensitivity analyses in a technical supplement to the main report and reference them in the main report only if the findings affect the interpretation of the main results. Below, we describe the sensitivity tests we plan to conduct for each state.

First, we will compare the results from regression-adjusted models to those without any adjustments. There are two reasons for this sensitivity test. First, although regression adjustment is generally appropriate when the sample is split about evenly between the treatment and control groups (Schochet 2008), this might not be true in the state with a clustered random assignment design. Second, even though, in general, we can expect a gain in precision from covariate adjustment, this might not always be the case. For example, the effect of covariate adjustment on the precision of estimates differs for linear and logistic regressions (Robinson and Jewell 1991). For these reasons, we will conduct sensitivity tests

to estimate project impacts with and without regression adjustment, and we will examine whether they are substantively different from each other.

Second, we will compare results from regression models with and without survey nonresponse weights. Because the mechanisms that cause survey nonresponse may not be adequately reflected in the assumptions underlying calculations of nonresponse weights, it is possible that the weights will not substantially reduce nonresponse bias. Further, large variability in the nonresponse weights can increase the variance of estimates without substantially reducing bias. We will present the weighted and adjusted estimates in the main text of our reports and the unweighted and unadjusted estimates in the appendix.

Third, we will explore whether project impacts for survey respondents differ from those of other enrollees. First, as noted above, we will explore whether the composition of survey respondents differs substantially from that of nonrespondents, by comparing the baseline characteristics of survey respondents to those of enrollees for whom we do not have survey data. Second, we will compare how the estimated impacts on the primary outcomes derived from administrative data vary when we do and do not include the enrollees for whom we lack survey data. This will enable us to assess how unit nonresponse affects the survey-based impact estimates.

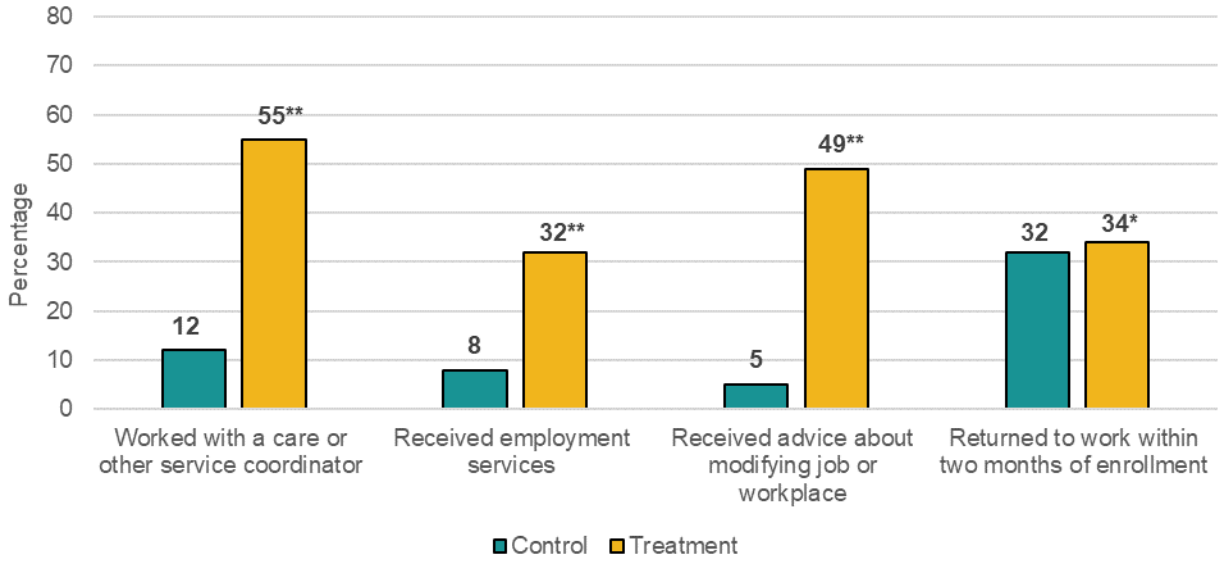
E. Reporting findings

We will present the findings from the impact study in two deliverables: (1) a special topics report, which will cover the short-term impacts and experiences for enrollees, and (2) a final impact report. In both reports, we will use graphs and tables to report findings. This approach will make the findings accessible to both technical and lay audiences. We will present findings in a manner that facilitates an understanding of the likelihood that the RETAIN projects truly had effects and to convey the importance of those effects. We will take the following approach for both reports:

- In the main text of the report, we will illustrate findings graphically using simple charts (Exhibits VI.4, VI.5, and VI.6).
- In the appendix, we will provide tables that show, for each outcome examined, the sample mean for the control group, estimated project impact, associated *p*-value, effect size, and sample size in the treatment group and control group (Exhibit VI.7).

We will give weight to impacts on outcomes observed at the most recent point in time (Exhibits VI.4 and VI.5 provide examples). Because policymakers are interested in understanding whether RETAIN can have persistent effects, the impacts of greatest interest are those that we observe most recently. In addition, we will track the trajectories of primary outcomes over time (Exhibit VI.6 provides an example).

Exhibit VI.4. Example of graphical representation of estimated impacts on short-term outcomes

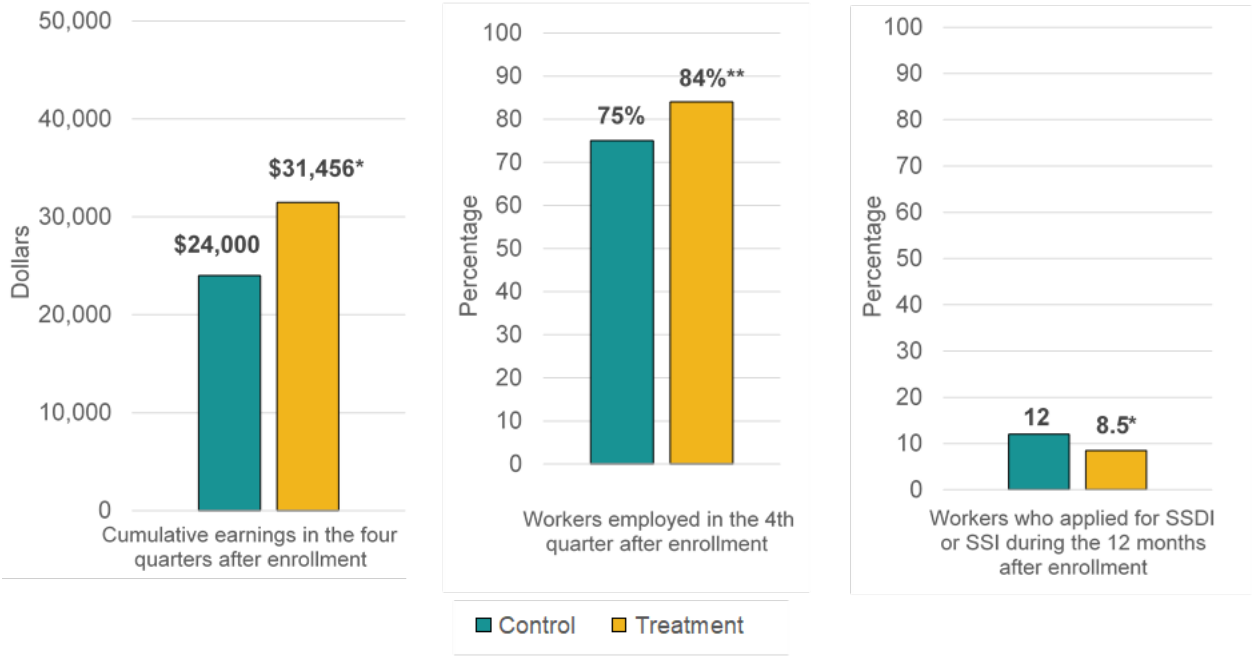


Source: R1 Enrollee survey.

Note: This exhibit shows the regression-adjusted means of outcomes for the control group and treatment group. We used baseline characteristics as explanatory variables in the regression model. See Appendix Table X for sample sizes for all outcomes. All outcomes are measured in the two months prior to the enrollee survey.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 level using a one-tailed test.

Exhibit VI.5. Example of graphical representation of estimated impacts on labor market outcomes and disability applications

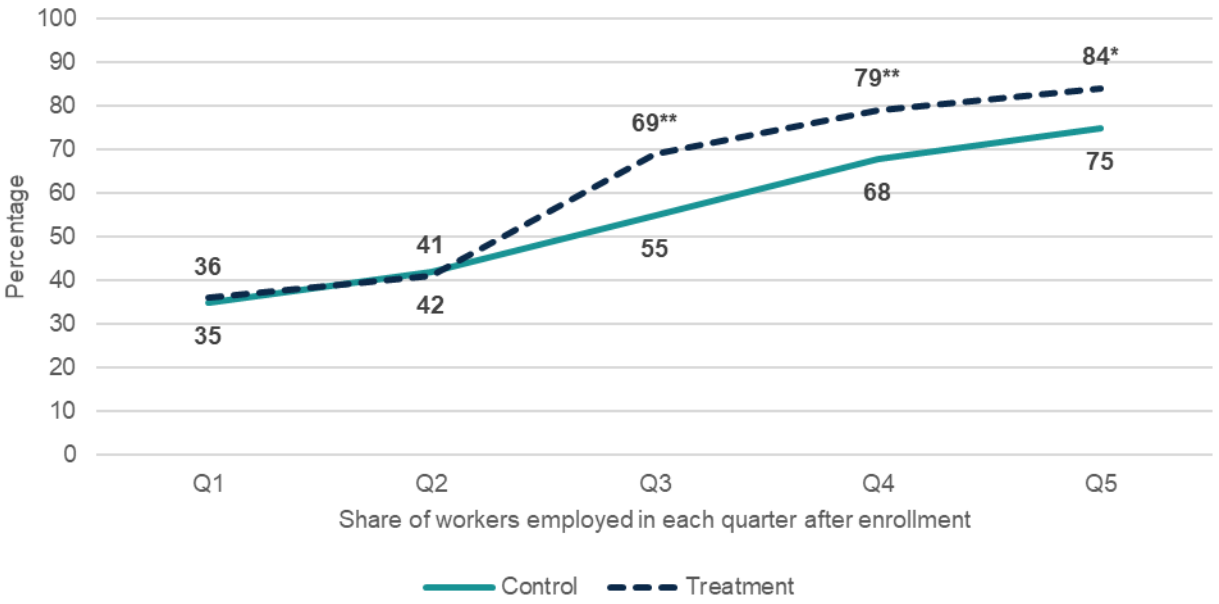


Source: State Unemployment Insurance records and Social Security Administration administrative records.

Note: This exhibit shows the regression-adjusted means of outcomes for the control and treatment group. We used baseline characteristics as explanatory variables in the regression model. See Appendix Table X for sample sizes for all outcomes.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 level using a one-tailed test.

Exhibit VI.6. Example of graphical representation of trajectory of impacts on employment



Source: State Unemployment Insurance records and Social Security Administration administrative records.

Note: This exhibit shows the regression-adjusted means of outcomes for the control group and treatment group. We used baseline characteristics as explanatory variables in the regression model. See Appendix Table X for sample sizes for all outcomes.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 level using a one-tailed test.

Q = quarter.

Exhibit VI.7. Table shell for reporting primary impact estimates in the appendix

Primary outcomes	Control mean	Treatment mean	Impact	Standard error	Effect size	Treatment group sample size	Control group sample size
Employed during the fourth quarter after enrollment (%)							
Earnings ($) during the four quarters after enrollment							
Applied for SSDI or SSI in the 12 months after enrollment (%)							

Source: RETAIN 12-month follow-up survey, state Unemployment Insurance records and Social Security Administration administrative records.

Note: This table shows the observed means for the control group, which is our estimate of the counterfactual, and the regression-adjusted impact estimates of state RETAIN (see Chapter X, Section X). We used baseline characteristics as explanatory variables in the regression model. See Appendix Table X for sample sizes for all outcomes. For outcomes measured with data from the 12-month survey, we weighted statistics to adjust for survey nonresponse. The *p*-value for a continuous or binary variable is based on a one-tailed *t*-test.

*/**/*** Impact estimate is significantly different from zero at the .10/.05/.01 level using a one-tailed test.

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VII. Benefit-Cost Analysis

An important component of the RETAIN study is the evaluation of the benefits of the intervention relative to the costs. This chapter presents the design of and key considerations for the RETAIN benefit-cost analysis. We identify the research questions, describe the analytic approach and key considerations for conducting the benefit-cost analysis, and present a structure for reporting the findings.

To provide a comprehensive understanding of benefits and costs, we will consider four stakeholder perspectives: RETAIN treatment enrollees, the DI trust fund, other federal and state government stakeholders, and the combination of all key stakeholders. The findings of the benefit-cost analysis will help DOL, SSA, state agencies, and policymakers identify key cost drivers of RETAIN projects and inform decision making about whether it is worthwhile to initiate similar interventions in the future.

A. Research questions

The benefit-cost analysis will answer two research questions:

1. **What are the benefits and costs of each RETAIN project?** If the RETAIN projects are effective in their goals, we would expect to see RETAIN treatment enrollees have greater employment and earnings, lower participation in SSA programs, better health and functioning, and greater economic well-being than control group enrollees. The benefits accrue from RETAIN's impact on outcomes, which may be enjoyed by the enrollee or other stakeholders. We will measure the direct program costs of delivering services, and we will estimate the benefits as well as the indirect costs that accrue to key stakeholders as a result of RETAIN's impacts on enrollee outcomes.
2. **Are the benefits of each RETAIN project larger than its costs?** We will combine the benefit estimates and cost calculations in a comprehensive assessment of the net benefits of each RETAIN project. For each stakeholder perspective, we will calculate net benefits by subtracting direct and indirect costs from benefits. A positive value of this statistic signifies that the monetary value of a project's benefits outweighed its costs. We will also calculate a benefit-cost ratio of the net benefits divided by direct program costs. This statistic captures the economic return per taxpayer dollar spent on the program. We will limit the assessment to the benefits and costs that are realized during the evaluation.

B. Analytic approach

1. Accounting framework for key stakeholders

We will use an accounting framework to assess the benefits and costs to different key stakeholders. The use of such frameworks is now standard in many large demonstration projects. For example, Heckman et al. (2010) used such a framework to understand the rate of return on the Perry Preschool program. Also, a study by Gubits et al. (2018) of the Benefit Offset National Demonstration provides a recent example of the application of an accounting framework for SSA demonstrations. We will use this accounting framework to guide the benefit-cost data collection, analysis, and reporting.

The accounting framework for the RETAIN benefit-cost analysis will consider four perspectives:

- **RETAIN enrollees.** A central goal of RETAIN is to help workers SAW/RTW following an illness or injury, thus supporting their long-term economic well-being. Accordingly, we expect that most of the

benefits of RETAIN will accrue to the individuals who participate in RETAIN and their families. Assessing benefits and costs from their perspective will enable us to assess the value of RETAIN to those whom the programs are intended to directly help.

- **DI trust fund.** Another central goal of RETAIN is to strengthen SSA programs.. If RETAIN reduces the share of individuals who rely on SSDI in the long term, it would reduce strain on the DI trust fund. Further, by improving enrollee earnings, RETAIN might bolster the DI trust fund through increased contributions via payroll taxes from enrollees. For these reasons, we will examine benefits and cost implications specifically for the DI trust fund separate from benefits and costs to other government entities.
- **Other federal and state government.** Various government agencies may incur benefits and costs due to RETAIN. DOL is the primary funder of the RETAIN programs and will bear the bulk of the costs associated with service delivery. Impacts on enrollee outcomes might translate into benefits and costs for other federal and state agencies. For example, if RETAIN increases enrollees' earnings and, in turn, spending, state governments would benefit from increased sales tax revenues. As another example, if RETAIN reduces applications for SSDI, it could also reduce Medicare participation because people eligible for SSDI are also eligible for Medicare after a 24-month qualifying period.
- **All key stakeholders.** To assess benefits and costs from the perspective of all key stakeholders, we will aggregate benefits and costs across the three groups above. This perspective is likely to be the most interesting to policymakers because a finding of a positive net benefit would indicate that a program increased the overall resources available to the key stakeholders.

Stakeholder perspective is critical to understanding the net benefits of RETAIN because the benefits and costs will vary depending on the perspective from which they are measured; often, benefits from one perspective are costs when viewed from another perspective. For example, if RETAIN increases enrollee earnings, the resulting increase in income taxes is a cost from the perspective of the enrollee and a benefit from the perspective of the federal and state governments, and they cancel each other out. Such a transfer from one stakeholder group to another does not affect the total resources available to all key stakeholders, and, so, from the perspective of all key stakeholders, it represents zero net benefit.

We will not include the perspectives of other private entities. Two types of private entities in particular stand to gain or lose from RETAIN: employers and private disability insurance providers. For example, depending on the extent to which RETAIN increases enrollees' employment and well-being, their employers might experience benefits and costs related to staff turnover, project disruptions, productivity, accommodations, and morale. However, we will not include such private entities in our benefit-cost analysis because the RETAIN program model does not directly target their outcomes, and the evaluation will not collect detailed data on their outcomes.

2. Estimating direct costs

Direct program costs represent the economic cost of implementing each RETAIN project, including the costs not directly incurred by the program. To calculate these costs, we will primarily rely on data on program costs collected during site visits (see Exhibit III.9 in Chapter III). For a pre-determined steady state accounting period (such as a budget year), we will ask projects to report (1) the total costs incurred per the program budget; (2) the breakdown of that cost across three categories: personnel/labor costs, direct costs of providing services, and indirect costs including administrative and overhead costs; and (3) estimated economic costs that were incurred but did not appear in the budget, such as the value of

volunteer time. We will combine the reported costs from (1) and (3) to calculate the total economic costs of delivering the program during the accounting period.

The primary measure of direct program costs will be the direct program cost per enrollee. To estimate this cost, we will divide the total economic cost of delivering the program by the number of treatment group enrollees who are eligible for services in the steady-state period. In addition, to provide a sense of how direct costs might differ based on service participation, we will calculate the direct program costs per service user. To calculate this cost, we will divide the total economic cost of delivering the program by the number of treatment group enrollees engaged with RETAIN during the accounting period.

Measures of direct program costs

- **Program cost per enrollee:** Economic cost of delivering the program/number of treatment group enrollees
- **Program cost per service user:** Economic cost of delivering the program/number of treatment group service users

Because the RETAIN program model includes multiple components, policymakers might be interested in understanding how the total cost of implementing a project is distributed across components. Therefore, in addition to estimating the total direct program costs, we will use the staff activity logs to understand how RETAIN labor costs are allocated across different activities that are core to the RETAIN program (including recruitment and enrollment, case management, RTW services, care coordination, and communication with and training for health care providers and employers).

3. Estimating benefits and indirect costs

We will use findings from the impact analysis to estimate benefits, direct costs, and indirect costs for the one-year impact analysis time period. We will rely on many of the data sources that we used to estimate impacts on enrollee outcomes, including SSA program data, state UI wage records, IRS earnings data, and enrollee surveys. We will use the impact estimates to quantify many of the benefits (such as increased earnings for enrollees) and costs (such as reduced SSDI benefits for enrollees).

We will combine the impact estimates with external data to build a comprehensive picture of RETAIN's benefits and costs. The impact analysis focuses on enrollee outcomes targeted by the RETAIN theory of change (see Exhibit I.2 in Chapter I). In the benefit-cost analysis, we will go beyond the outcomes targeted in the impact analysis in two ways:

1. We will capture benefits and indirect costs borne by stakeholders other than the enrollee. To do so, we will use the accounting framework described above that captures multiple perspectives: the enrollees, DI trust fund, other federal and state government, and these three key stakeholders collectively.
2. We will consider secondary effects stemming from the primary impacts. For example, if we find a positive impact on enrollees' income, then we will estimate the benefit to enrollees of increased income as well as the indirect cost of increased income taxes paid by enrollees and the benefit of increased tax revenue for federal and state governments.

Benefits and indirect costs of primary interest include the following:

- **Earnings, fringe benefits, payroll taxes, and work-related costs.** If a RETAIN program is effective in achieving its SAW/RTW goals, it will increase enrollees' employment and earnings. As a result of

these impacts, we would also expect changes in enrollees' fringe benefits, payroll taxes, and costs associated with employment such as transportation and childcare.

- **Income and sales taxes.** Enrollees who experience increased earnings will be subject to increased federal and state income taxes. Similarly, enrollees might owe more sales taxes on increased purchases that program participants make due to their increased purchasing power.
- **Use of SSDI.** If a RETAIN program is effective in preventing workforce exit, we expect a negative impact on SSDI applications. This should result in reductions in expenditures for SSDI and administration of the program.
- **Use of other public supports.** If a program improves employment rates among enrollees, it is likely to reduce use of UI and WC. Similarly, if a program improves enrollees' income, we expect it to reduce use of other public supports such as SSI, Medicaid, and Temporary Assistance for Needy Families, which will represent a benefit to various government agencies.

To estimate benefits and indirect costs, we will use point estimates from the main impact analysis model. Notably, we will use the point estimates even if statistical testing does not indicate that the estimates are different from zero at conventional levels of statistical significance. This will provide a more complete accounting of the benefits and costs of a program by using the best evidence available on the size of its impact—our point estimates—even if they are imprecisely estimated. We will report confidence intervals of the net benefit estimates to convey the uncertainty underlying the estimates. We will also conduct sensitivity tests to understand how the estimates change based on alternative plausible values of impacts (discussed in the next section).

When needed, we will draw on external sources of data to convert point estimates of impacts on enrollee outcomes into estimates of benefits and costs. For example, we might find that RETAIN increased the share of enrollees who are employed with access to fringe benefits (health insurance and paid leave) through their employer by 20 percent. To estimate the value of the benefit derived from this impact, we will use information from the Department of Labor's National Compensation Survey published reports on the costs of fringe benefits at different levels of earnings and the share of workers employed with access to fringe benefits that we observe in the RETAIN survey data. To estimate payroll, income and sales taxes, and other work-related costs, we will apply standard multipliers to the estimated impacts on employment, earnings, and income. For other government benefits, we will also use the framework described in Isaacs (2008) to project the additional administrative costs associated with each of these programs, updating information on specific administrative costs from the U.S. House of Representatives' Committee on Ways and Means.

4. Anticipated benefits and costs by stakeholder group

In Exhibit VII.1, we show the a priori expected benefits, indirect costs, and program costs for each stakeholder group. The cells indicate whether the component is an anticipated cost (-), benefit (+), or neither (0) from the viewpoint of the stakeholder. The question marks (?) indicate that the direction of the effect on the stakeholder is uncertain. The bottom line for each column shows the difference between benefits and costs, indicating either total net benefits (if positive) or total net costs (if negative) for the relevant perspective.

Exhibit VII.1. Benefits and costs in the year after enrollment, by accounting perspective

Benefits and costs	Data source	RETAIN enrollees (A)	DI trust Fund (B)	Other federal and state government (C)	All key Stakeholders (A + B + C)
Direct program costs					
Personnel and labor costs	Cost-focused site visit interviews	0	0	-	-
Direct costs of providing services	Program service use data; RETAIN staff activity log; RETAIN enrollment data	0	0	-	-
Administrative and overhead costs	Cost-focused site visit interviews	0	0	-	-
Economic costs that do not appear in the budget		0	0	0	-
Benefits and indirect costs					
Earnings	State UI wage records; IRS earnings data	+	0	0	+
Fringe benefits	Enrollee surveys; National Compensation Survey	+	0	0	+
Payroll taxes	Imputed based on earnings	-	+	+	0
Work-related expenses	Enrollee surveys; external data	-	0	0	-
Income and sales taxes	Enrollee surveys; IRS earnings data; Imputed based on earnings	-	0	+	0
SSDI benefits paid	SSA program data	-	+	0	0
SSDI administrative costs	SSA program data; external data	0	+	0	+
SSI payments	SSA program data	-	0	+	?
SSI administrative costs	SSA program data; external data	0	0	+	+
Short- or long-term disability payments	Enrollee surveys	-	0	0	-
Unemployment benefits	Enrollee surveys	-	0	+	0
Workers' compensation benefits	Enrollee surveys	-	0	+	0
Other public supports (such as TANF and Medicaid)	Enrollee surveys; House Committee on Ways and Means	-	0	+	0
Net benefits		?	?	?	?

Note: The cells in this illustrative table present our a priori guesses regarding the direction of RETAIN program impacts and the benefits and costs of those impacts from various accounting perspectives. The actual tables in the evaluation reports will present empirical findings from the impact analysis and from our analysis of program costs.

TANF = Temporary Assistance for Needy Families.

5. Non-monetized benefits and indirect costs

We do not expect to be able to account for all the benefits and costs that key stakeholders experience from RETAIN. In the benefit-cost analysis, we will exclude benefits and costs if they are one of the following:

Examples of non-monetized benefits and costs

- Health
- Costs of medical services
- Productivity
- Leisure
- Quality of life
- Private health insurance

- **Not easy to monetize.** RETAIN might produce benefits and indirect costs that are difficult—if not impossible—to quantify in dollars. For example, if RETAIN has a positive impact on enrollees' employment, it will also result in a loss of non-market time that has inherent value. Ideally, this lost value should be counted as an indirect cost to avoid overestimating the net benefits of a project.[19] However, calculating the value of lost non-market time would require us to make strong assumptions (such as regarding the shape of the labor supply curve) and to estimate counterfactuals (such as the hours enrollees would have desired to work in the absence of RETAIN). Other examples of important non-monetizable benefits and indirect costs include aspects of health and functioning (such as enrollee pain and risk of depression) and service use outside RETAIN.
- **Not observed in available data.** RETAIN might produce benefits and indirect costs that cannot be observed in available data. For example, we do not expect to be able to account for costs associated with medical services, which could either increase or decrease as a result of RETAIN. On the one hand, we expect RETAIN enrollees might use more medical services, and health care providers could spend more time with each patient. On the other hand, if RETAIN helps workers to return to or stay at work, then it could reduce health care costs in the long run by supporting their physical and mental health. Because we will lack data on medical services or costs, we will not be able to incorporate medical costs into the benefit-cost analysis.

The benefit-cost analysis also will not count benefits and costs to entities other than the four key stakeholder perspectives represented in the accounting framework. For example, if RETAIN increases the share of workers who remain employed with their initial employer, it might reduce employers' costs stemming from staff turnover. Similarly, if RETAIN reduces the amount of private disability insurance benefits claimed by enrollees, it would reduce insurance providers' costs.

We will address the exclusion of such benefits and indirect costs from our benefit-cost analysis in three ways. First, we will be careful to point out this important limitation when describing the findings. Second, we will note findings of any impacts on associated outcomes and present a qualitative assessment of their contribution to overall net benefits. Third, we will acknowledge that the findings do not reflect benefits and costs to entities other than the four stakeholder perspectives, and we will note the types of benefits and indirect costs to other entities that could have resulted from impacts on enrollee outcomes. By doing so, we will provide policymakers a sense of whether the uncounted effects are likely to represent additions to or subtractions from the estimated net benefits.

[19] Greenberg and Robins (2008) studied a welfare-to-work program and showed that the net societal benefits of the program were greatly reduced after counting losses in nonmarket time.

C. Analytic issues

We will address several analytic issues that are common to benefit-cost analyses: (1) the unit of analysis, (2) the comparison of benefits and costs that occur in different time periods, and (3) the lack of precision in some of the underlying estimates of benefits and costs.

1. Unit of analysis for benefit and cost calculations

We will analyze each program's benefits and costs per enrollee. In other words, we will analyze a program's average benefits and costs per person eligible for the full set of the program's services. We selected the unit of analysis to be "per enrollee" rather than "per service user" for two reasons. First, this is consistent with the impact analysis, which will examine the impact of offering RETAIN services regardless of whether the enrollee takes up the offer. Because the impact estimates will feed into the estimates of benefits and indirect costs, it is especially important to use a consistent unit for both analyses. Second, some types of direct program costs do not increase as the share of enrollees who use services grows (up to an extent). For example, a program might spend 40 percent of its budget on rent for office space and salaries for full-time staff. These costs do not differ depending on whether 80 percent or 100 percent of enrollees take up services.

2. Comparison of benefits and costs that occur in different time periods

Programs will incur the direct costs of delivering services up-front, while benefits and indirect costs might only be realized later as the services have their intended impacts. To compare benefits and costs that accrue during different time periods, we will adjust estimates to account for the following:

- **Inflation.** The value of a dollar erodes over time. We will use the Consumer Price Index to convert dollar-denominated measures of benefits and costs to values in constant 2024 dollars.
- **Opportunity cost.** A dollar spent to fund a program today could instead be invested and earn interest over time. We will use a discount rate to convert all future benefits and costs to their present value. We propose to set the discount rate equal to the most recent rate that SSA used in its actuarial projections of the DI trust fund balance at the time of our analysis.[20]

3. Uncertainty in benefit-cost estimates

Recognizing the inherent uncertainty in the benefit-cost estimates, we will conduct sensitivity tests to assess how the estimates change when key assumptions vary. We will assess the sensitivity of the estimated net benefits to changes in two key inputs:

- **Estimates of program impacts.** The estimate of the net benefit relies heavily on the estimated impacts on enrollee outcomes during the period of evaluation. These estimated impacts are themselves subject to uncertainty and might be imprecisely estimated in the impact study. Different sampling draws would likely yield slightly different estimates, which are reflected in the standard errors that accompany the impact point estimates. Adjusting for this uncertainty is especially important if we use strong assumptions to translate the estimated impacts into estimates of benefits or costs. To account for this uncertainty, we will present the overall net benefits with confidence

[20] The Benefit Offset National Demonstration evaluation used the discount rate of 2.7 percent, reflecting the rate assumed by the Social Security Board of Trustees for their intermediate-cost projections in 2018 (Gubits et al. 2018). Other evaluations of social programs have used real discount rates ranging from 3 to 10 percent.

intervals that we will develop using methods to adjust the standard errors for estimated impacts on key outcomes, as was done in a previous study (McConnell et al. 2006).

- **Valuation assumptions.** The benchmark estimates of net benefits rely on some assumed parameter values that are not based on the impact analysis. For example, while the impact analysis provides information on enrollees' earnings, we cannot estimate the benefits or indirect costs imposed via increased income taxes without making assumptions about tax rates and family structure. We will examine the sensitivity of the estimated net benefits to changes in the underlying assumptions around parameters such as fringe benefit rates, tax rates, costs of certain program inputs, and the discount rate. We will identify the alternative values of these parameters for the sensitivity analyses from supplementary sources of information and approaches taken in other benefit-cost analyses, particularly those for other SSA demonstrations.

D. Considering net benefits beyond the evaluation period

The direct program costs of delivering services will be incurred up front, but benefits and indirect costs may continue to accrue and compound over time, including beyond the evaluation period. In the benefit-cost analyses, we can count all direct program costs because they will occur during the evaluation period. However, we cannot account for longer-term benefits and indirect costs if they occur beyond our observation period (one year after enrollment in RETAIN).

If a RETAIN project has the intended effects on employment and SSA program participation, then the estimated net benefit of the project over the evaluation period will underestimate the true net benefits of the program that will manifest over time. For example, one of the potential benefits of RETAIN that could affect the DI Trust Fund is a reduction in SSDI benefits received by enrollees. However, we expect that only a small share of RETAIN's total impacts on SSDI benefits will materialize during the year after enrollment.[21] Therefore, key stakeholders such as the DI Trust Fund may be interested in understanding when a RETAIN project would become cost neutral to them—if it is not cost neutral during the evaluation period.

We will calculate the "future impacts needed for cost neutrality" within a given time frame. In other words, we will calculate the size of the impacts on earnings and SSA payments in future years that would be necessary for each program's benefits to equal costs within a given time frame.[22] Because SSA will have access to additional years of data from SSA program records and IRS earnings records after the evaluation ends, it will be able to eventually identify the realized impacts of each program on earnings and SSDI benefits. If the realized impacts exceed our calculations of the "future impacts needed for cost neutrality," it will suggest the benefits of a program exceeded its costs in the long term.

E. Reporting findings

We will present the benefit-cost analysis findings in the final impact report. Each program-specific chapter of the report will contain a section on the findings of the benefit-cost analysis of that program, immediately following the presentation of findings from the impact analysis of that program. In an

[21] SSDI benefits do not begin until the sixth full month of disability, and this waiting period begins with the first full month after the date the disability began. Further, it takes time for SSA to evaluate claims and render a decision.
[22] We expect the estimated "impacts needed for positive net benefit" to be larger than the observed impacts during the evaluation period because we anticipate that only a small share of the evaluation sample will have begun receiving SSDI benefits at 12 months.

appendix to the report, or in an accompanying memo, we will provide a framework and instructions for SSA to use to conduct future long-term impact and benefit-cost analyses.

We will use graphs and tables to report findings from the benefit-cost analysis. This will enable us to present the findings succinctly and make them accessible to both technical and lay audiences. We will present findings in a manner that facilitates an understanding of not only the magnitude of benefits and costs, but their underlying mechanism and to whom they accrued. We expect to do the following:

- Report findings on benefits, costs, and net benefits using a table shell similar to Exhibit VI.2
- Use bar graphs to show our estimates of net benefits for each stakeholder group
- Use tables to show the "future impacts needed for cost neutrality"

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VIII. Evaluation Reports and Timeline

We will develop a series of reports that document the detailed findings of the RETAIN evaluation as well as provide succinct summaries of key findings, making sure to present findings in ways that are accessible to nontechnical audiences. We will document the findings in two types of reports:

- **Study reports.** We will produce four reports that will present findings from the process, participation, impact, and benefit-cost analyses.
- **Special topic reports.** We will develop up to five reports on special topics related to RETAIN and issues that emerge during the evaluation. We have determined the topics for one of these reports in consultation with SSA, but we have yet to determine the topics for the remaining reports.

A. Study reports

We will produce four reports that will provide timely and comprehensive information about the demonstration and evaluation findings. In Exhibit VIII.1, we present an overview of the timeline of enrollment, data collection, and reporting. Below, we describe the content of the reports we expect to develop.

Early assessment report. The early assessment report will provide formative feedback to states on recruitment, enrollment, early service provision, and adherence to the planned program model during the initial months of the intake period. By providing recommendations for corrective action, the report will support continuous quality improvement of RETAIN service delivery during the implementation start-up period. To conduct the early assessment and inform the recommendations, we will use RETAIN enrollment data, program service use data, program performance data, and qualitative data from site visits.

Early assessment report topics

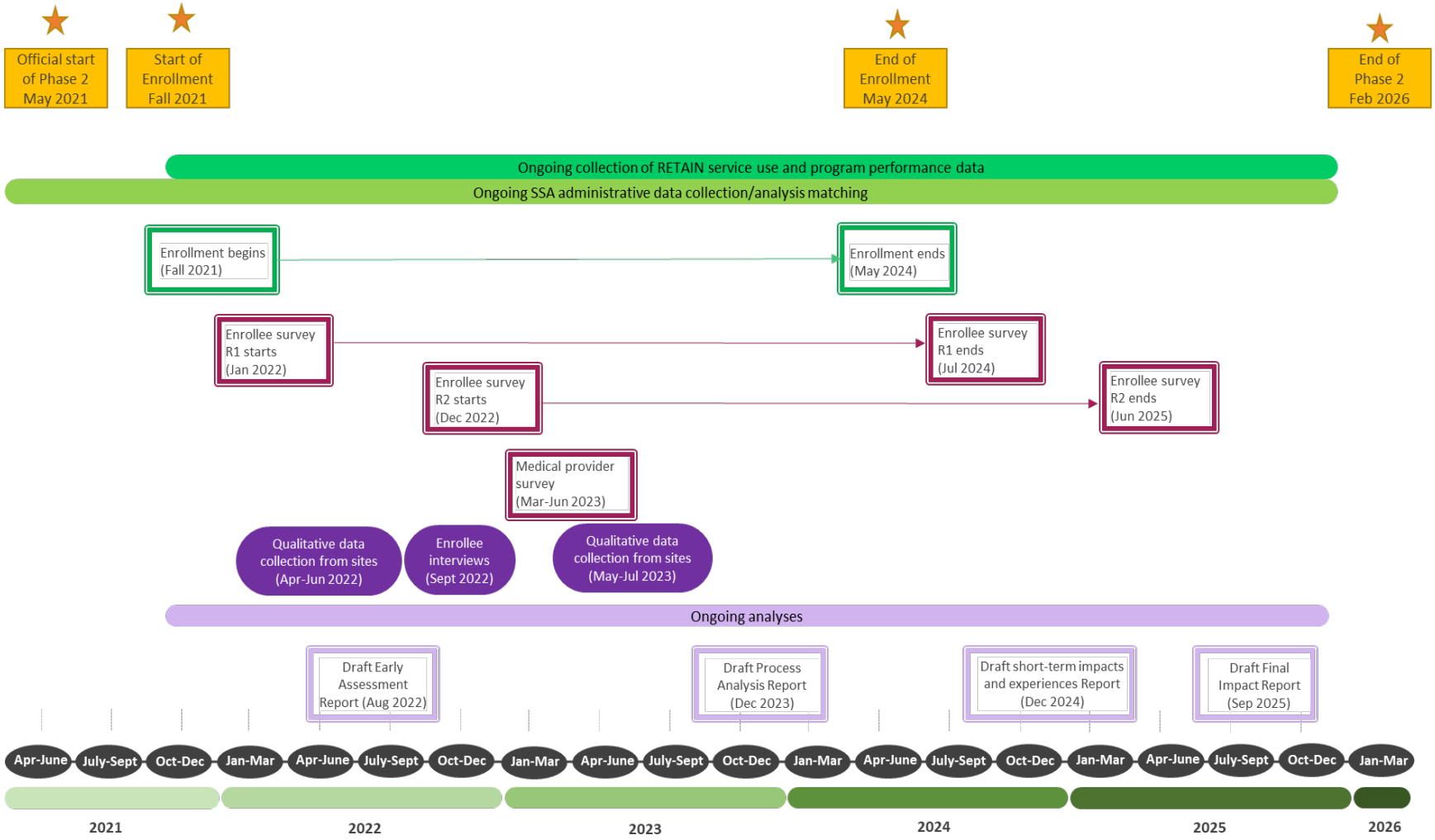
- Program environment surrounding RETAIN service delivery
- Initial recruitment and implementation of RETAIN program components
- Service environment for the control group
- Recommendations for corrective action

Process analysis report. The process analysis report will provide a summative analysis of recruitment, enrollment, service provision, and adherence to the planned program model after the states have had time to fully implement their RETAIN projects. We will use qualitative data from interviews with administrators, service providers, and enrollees to assess barriers and facilitators that emerged across the states to influence recruitment, enrollment, and implementation of the RETAIN project. We will use quantitative data from the program performance data and RETAIN medical provider survey to assess providers' implementation of RETAIN program components and enrollees' receipt of RETAIN services. The findings will inform how to replicate or expand the RETAIN project services in other settings.

Process analysis report topics

- Program environment surrounding RETAIN service delivery
- Recruitment and service provision
- Steady-state implementation of RETAIN program components
- Service environment for the control group
- Key factors to support replication and expansion

Exhibit VIII.1. Overview of enrollment, data collection, and reporting timelines



Short-term impacts and experiences report. This report will describe enrollees' short-term outcomes and assess each RETAIN projects' effectiveness in changing them. It will rely on data from the first round of enrollee surveys and focus on outcomes that could be immediately affected by the RETAIN projects. For each state, we will examine whether the RETAIN projects increased treatment group enrollees' use of services relative to what they would have used in the absence of the projects. We will also examine whether treatment group enrollees were more likely to stay at work, return to work, or make plans to return to work by two months following enrollment. The report also will include a descriptive analysis of factors affecting return to work, such as enrollees' perceived barriers to work and receipt of accommodations. This information will offer an early glimpse into the projects' outputs and short-term outcomes as well as provide context for interpreting the impact estimates to help understand why some projects may have been more effective than others.

Final impact report. In the final impact report, we will assess each RETAIN projects' impacts on key outcomes as well as its benefits and costs. For each state, we will include an analysis of the project's impacts on employment, earnings, and SSDI and SSI applications one year after enrollment, as well as enrollee well-being. We will also provide a summative assessment of each project's estimated benefits and costs to key stakeholders and an estimate of the net benefits of each project. To provide context for the impact and benefit-cost estimates, we will synthesize findings from the process and participation analyses, describing contextual and administrative factors that facilitated or inhibited implementation of and participation in each project. The report will provide a summative evaluation of all demonstration activities, including whether RETAIN met its ultimate objectives.

B. Special topic reports

We will develop additional reports on topics related to the RETAIN evaluation and issues that emerge during the contract. These reports are an opportunity to present findings that go beyond the results of analyses presented in the primary reports and use the evidence from the RETAIN demonstration to inform future SAW/RTW research and programming. We will develop the topics for these special topic reports in consultation with SSA as we begin to learn more about the implementation of RETAIN projects during Phase 2. In Exhibit VIII.2, we present ideas for topics that might be worthy of special reporting, including one report we completed.

Exhibit VIII.2. Potential topics for special topic reports

Report topic	Description
SSDI entry by state (completed)	This report describes variation in SSDI application rates by geography and biographical characteristics using state-and county-level SSA administrative data. In addition, it emphasizes the benefits of developing state-based intervention approaches given the large geographic and demographic variation in disability application outcomes by state. It was produced during Phase 1 of the RETAIN demonstration to inform states' recruitment and screening plans for Phase 2.
Innovative practices used by RETAIN projects	For this report, we would create a compendium of short case studies to highlight innovative recruitment and service delivery practices. The case studies would highlight promising practices that emerge for the recruitment of workers and providers, services provided, provider training and incentives, and stakeholder engagement. Innovations we identify might include use of virtual tools for enrollment and service delivery, online training modules for medical providers, and use of social media for enrollee recruitment.

Report topic	Description
Race, gender, and RTW among people at risk of long-term disability	In this report, we would examine the composition of the RETAIN sample and explore how SAW/RTW experiences differ by race and gender. First, we would describe the RETAIN sample and assess how RETAIN enrollees compare to the broad target population (those at risk of long-term disability), based on dimensions such as race and gender. To the extent that we find differences, we would explore whether they can be explained by the location of the RETAIN projects or eligibility criteria. To do this, we would use state project data, Current Population Survey data, and county-level SSA administrative data. Second, we would examine the extent to which subgroups defined by gender or race/ethnicity experience different RTW barriers, including systems-level challenges that discourage equitable outcomes. To do this, we would conduct a literature review and collect information during semi-structured interviews with RETAIN treatment enrollees and project staff. Finally, we would examine disparities in subgroup outcomes in the absence of RETAIN and also examine heterogeneity in the impacts of RETAIN.
Using Bayesian methods to understand impacts across RETAIN projects	In this report, we would use Bayesian methods to draw on data across the five RETAIN projects to understand impacts and examine whether impacts differ for subgroups. First, we would use Bayesian methods to answer the question, "What is the chance that a RETAIN project had a substantively meaningful effect, given the estimated impacts in the other projects and what we know from prior research?" Second, we would use Bayesian methods to understand the heterogeneity of project impacts. Bayesian analyses are well-suited for studying subgroups with a relatively small number of subjects, which cannot reliably be examined using traditional methods. Further, we can apply Bayesian additive regression trees to outcome data to determine which characteristics of enrollees or health care providers are associated with larger project impacts, rather than testing pre-specified hypotheses.
SAW/RTW challenges among people with mental and behavioral health conditions	In this report, we would examine the SAW/RTW experiences of people with mental and behavioral health conditions. First, we would conduct a brief literature review on the challenges posed by poor mental and behavioral health for SAW/RTW. Second, we would analyze the characteristics and outcomes of RETAIN enrollees diagnosed with mental and behavioral health conditions at the time of enrollment. Third, during site visit interviews with staff, we would examine specific aspects of mental and behavioral health that serve as facilitators or barriers to engagement with RETAIN and SAW/RTW outcomes. Finally, because opioid prescriptions can be associated with behavioral health challenges (such as opioid use disorders), we would use survey data to analyze patterns of opioids prescriptions among RETAIN enrollees, the extent to which prescription rates were affected by RETAIN, and their association with other outcomes of interest such as SSDI applications.

SAW/RTW = stay at work/return to work.

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Appendix A: Kansas Profile

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Kansas

- **Lead agency:** Kansas Department of Commerce
- **Key medical partners:** Ascension Via Christi, four regional medical systems (to be determined)
- **Key workforce and other partners:** Kansas State Workforce Development Board, five local workforce development boards, Kansas Department of Health and Environment, Kansas Rehabilitation Services, Kansas Business Group on Health, Mid-America Coalition on Health Care, Kansas State Council of Society of Human Resource Management
- **Populations served:** Adults ages 18–65 who live or work in Kansas, are currently employed or seeking employment, and who have work-related or non-work-related musculoskeletal injuries, mental health conditions, chronic diseases, or other newly diagnosed illnesses or injuries that impact employment
- **Catchment area:** Statewide (all 105 counties and all 74 opportunity zones)

I. RETAINWOR*KS* Program Components

Program components		
Medical provider services		
	Training medical providers	• Participating providers must participate in 8 one-hour training sessions. • Kansas RETAIN is considering customized training for providers via the University of Kansas's Project ECHO. This training would offer Continuing Medical Education credits.
	Incentivizing medical providers	Participating providers in the treatment group receive the following: • $100 for successful referral to RETAIN and completion of referral form • $50 for submitting an activity prescription for the enrollee • $25 for making or answering RETAIN-related phone calls • $100 for completion of an RTW plan for the enrollee • $100 for completion of 30-day risk assessment

Program components		
RTW coordination services		
	Coordinating RTW services	• Health care system coordinators (nurse navigators) and workforce services coordinators (workforce coordinators) work as a team to provide medical and employment-related supports to treatment enrollees. • Nurse navigators develop RTW plans in collaboration with participating providers and workforce coordinators develop individual employment plans based on the needs and employment goals of each enrollee. • Enrollees in the treatment group receive services such as work activity prescriptions, ongoing support and a RTW plan from a nurse navigator, a RTW workbook, a 30-day risk assessment after returning to work, and 2-, 4-, and 8-week follow-ups from either the nurse navigator or workforce coordinator after returning to work.
	Communicating among RETAIN stakeholders	• Nurse navigators and workforce coordinators are in constant communication to assist treatment group enrollees with staying at work/returning to work. They meet every two weeks to discuss cases and service coordination. • Nurse navigators meet regularly with providers to update them on enrollee progress. • When needed, the workforce coordinator becomes the point of contact for the enrollee's employer to discuss SAW and RTW options.
	Monitoring treatment enrollee progress	• KANSASWORKS, the state's main management information system for workforce development, houses all data for RETAIN. • Nurse navigators and workforce coordinators have access to the KANSASWORKS management information system to track progress of RETAIN enrollees.
Other RTW services		
	Supporting workplace-based interventions	• The workforce coordinator communicates with the nurse navigator to determine what interventions are recommended by the treating provider. The workforce coordinator then contacts the enrollee's employer to discuss workplace interventions, such as work schedule modifications and physical accommodations. • As a large employer, the State of Kansas departments under the direction of the governor will participate in employer education opportunities, which are expected to lead to referrals and service coordination. • Three employer organization partners (Kansas Business Group on Health, Mid-America Coalition on Health Care, and Kansas State Council of Society of Human Resource Management) will provide employer perspective and assist in developing messaging and employer education.
	Retraining or rehabilitating enrollees	• Nurse navigators refer all treatment group enrollees to the workforce coordinator to determine needs for accommodations, short-term or work-related training, registered apprenticeship programs, and other community services. • Workforce coordinators refer enrollees who must seek a new career to all Workforce Innovation and Opportunity Act programs for which they are eligible.

RTW = return to work; SAW = stay at work.

II. Evaluation Design

The evaluation of RETAINWOR*KS* uses an individual random assignment design. Enrollees are randomly assigned to either a treatment group that is offered RETAIN services or a control group.

A. Recruitment and enrollment

Kansas RETAIN staff expect that most referrals will come from health care providers; thus, nurse navigators lead many of the recruitment and enrollment processes, including informed consent procedures. Kansas RETAIN Medical System Partners screen potential enrollees for eligibility when they visit a partner health care system via self-referral, a referral from an American Job Center (AJC), a referral from a medical provider, or a referral from an employer. All referred workers first meet with a nurse navigator for eligibility determination and completion of intake forms. The initial meeting could occur as a warm handoff between the medical provider or workforce development center staff and the nurse navigator. After initial intake by the nurse navigator, the workforce coordinator uses Confirmit (a system Mathematica configured for random assignment) to assign an enrollee to the treatment or control group and notifies the enrollee of their study group status via email or letter. Nurse navigators and workforce coordinators conduct the initial intake for all enrollees but have clear instructions not to provide services to control group enrollees beyond standard medical services or referrals to partner services.

Evaluation design highlights

Type of design: Individual random assignment

Key program implementation staff and roles:

- **Nurse navigator:** Provides intensive medical case management services to the treatment group; collaborates with health care providers and American Job Centers to develop return-to-work plans and follows-up with each enrollee until they successfully return to work; stays in frequent communication with workforce coordinator regarding enrollee progress
- **Workforce coordinator:** Ensures enrollees receive early information regarding available workforce services and explains the procedures and timelines for receiving those services; coordinates skills assessments, enrollment in job training, and referrals to other services (such as vocational rehabilitation) as needed; stays in frequent communication with the nurse navigator regarding enrollee progress

Recruitment approach:

- The state recruits via referrals from medical providers, employers, workforce development center staff, and self-referrals
- Kansas RETAIN staff conduct outreach to potential enrollees via postcard mailings, social media, and videos posted to the Ascension Via Christi and Workforce Alliance close circuit networks
- The workforce center partner uses Confirmit to assign enrollees to a treatment or control group

B. Enrollment target and statistical power

The recruitment target is 4,000 enrollees. To achieve this target sample size over 30 months of enrollment, the state must enroll 800 people (on average) from each of 5 workforce development areas over 30 months. These enrollees will be evenly split between the treatment and control groups. With 4,000 enrollees, the evaluation can detect an impact on employment rates in the fourth quarter after enrollment as small as 3.3 percentage points (or 4 percent) relative to the control group mean.

Overall recruitment target

4,000 enrollees

Monthly enrollment target

About 133 enrollees per month

C. Services available to the treatment and control group enrollees

Enrollees assigned to the treatment group receive medical case management services from the nurse navigator as well as referrals to an AJC for workforce coordination services. The nurse navigator creates a return-to-work (RTW) plan in collaboration with the enrollee and participating medical providers, and the AJC creates an individual employment plan and performs skills assessments to determine appropriate workforce services and supports. If a workforce coordinator or AJC staff member determines that job retraining is needed, the AJC staff member will coordinate services for enrollees. Nurse navigators and workforce coordinators will continue to provide medical and workforce services, respectively, until each participant successfully returns to work. Should the enrollee return to work, the nurse navigator will follow up with the enrollee two, four, and eight weeks after returning to work to check in on medical progress. The workforce coordinator will also follow the enrollee's progress to ensure that their employment goals are achieved and employment is maintained for 30 days after returning to work. AJC staff may also refer enrollees to vocational rehabilitation services or Social Security Disability Insurance/ Supplemental Security Income, at which point enrollees will exit the program. Enrollees receive incentives ranging from $25 to $100 for completing milestones related to enrollment, completion of individualized education plans, and returning to or staying at work.

Enrollees assigned to the control group receive standard medical services from RETAINWOR*KS* partners. AJCs may also refer control group enrollees to other workforce services outside of RETAIN.

D. Provider participation and resources

Participating medical providers treat both treatment and control group enrollees, which poses a risk of contamination. These providers received at least eight hours of training in RTW best practices prior to being able to make referrals to RETAIN, which might affect their delivery of services to both groups of enrollees. The Kansas Department of Commerce is exploring customized training for providers (and involved health care staff) statewide through the University of Kansas's Project ECHO. This option would offer Continuing Education credits to providers.

Appendix B: Kentucky Profile

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Kentucky

- **Lead agency:** Kentucky Department of Workforce Investment
- **Key medical partners:** University of Louisville (UofL) Health & Frazier Rehabilitation Institute, University of KY HealthCare, CHI Saint Joseph Medical Group, Kentucky Hospital Association
- **Key workforce and other partners:** Kentucky Workforce Investment Board, regional workforce development boards, Kentucky Chamber of Commerce, Kentucky Department for Public Health, Kentucky Office of Vocational Rehabilitation (OVR), Council of State Governments, University of Kentucky
- **Populations served:** Individuals who live or work in Kentucky and are at risk of exiting the workforce due non-work-related injury or illness; must be employed or have been employed within the last 12 months and have made at least $1,000 in one of those months
- **Catchment area:** Statewide, including 144 opportunity zones

I. RETAIN Kentucky Program Components

Program components		
Medical provider services		
	Training medical providers	• All providers have access to in-person and/or online training covering SAW/RTW best practices and information about RETAIN (such as referral processes). • The University of Louisville Physical Medicine and Rehabilitation physicians group trains residents to offer alternative treatments to opioids.
	Incentivizing medical providers	• Providers receive financial incentives to review new and updated RETAIN training materials, as part of continuous quality improvement efforts. • Providers who complete pre-post training testing on occupational health best practices receive $100 for post-survey 1 and $50 for post-survey 2.

Program components		
RTW coordination services		
	Coordinating RTW services	• RTW coordinators receive ongoing training in case management, RTW best practices, mental health, and substance use disorders. • RTW coordinators confirm eligibility, conduct intakes, and develop and implement RTW plans in collaboration with treatment group enrollees. • RTW coordinators guide and assist in the accommodations process, collaborate with peer mentors and assistive technology specialists on SAW and RTW strategies, develop functional job descriptions as needed, and coordinate services to address social determinants that may pose barriers to participation in RETAIN (such as housing, rent, food, transportation, childcare, clothing, eldercare, and mental health services).
	Communicating among RETAIN stakeholders	• Upon intake, the enrollee signs an authorization form that gives permission to the RTW coordinator to contact their employer, health care provider, and social service agencies. RTW coordinators also communicate with short- and long-term disability insurance carriers on behalf of the enrollee. • RTW coordinators encourage enrollees to communicate with stakeholders via self-advocacy skills training. • The RETAIN database alerts RTW coordinators of any communication- or information-sharing issues among stakeholders.
	Monitoring treatment enrollee progress	• RTW coordinators record every interaction with employers and providers (such as requests for job descriptions, the enrollee's paid time off or leave status, work restrictions, accommodation needs, and the enrollee's eligibility for returning to work or rehire) into a database. • The database tracks modifications to RTW plans, accommodations, and concerns about the enrollee's safety.
Other RTW services		
	Supporting workplace-based interventions	• RTW coordinators and assistive technology specialists engage with employers, consulting on reassignment to other positions, temporary modified duty, and the Americans with Disabilities Act. • The Inclusive Worker Health Leadership Network connects health care and workforce/employment systems by embedding RETAIN into its disability and employment efforts and promoting comprehensive SAW/RTW policies. • The University of Kentucky offers a RTW certificate for students in medicine, public health, nursing, health sciences, education, business and economics, law, and pharmacy. The certificate training focuses on SAW/RTW principles.
	Retraining or rehabilitating enrollees	• RTW coordinators provide job development and placement assistance, accommodation planning, and transferable skills analysis.

RTW = return to work; SAW = stay at work.

II. Evaluation Design

The evaluation of RETAIN Kentucky uses an individual random assignment design. Enrollees are randomly assigned to either a treatment group that is offered RETAIN services or a control group.

A. Recruitment and enrollment

RETAIN Kentucky uses a multi-method approach for recruitment and enrollment which includes referrals from medical providers, employers, the Office of Vocational Rehabilitation, workforce and disability management organizations, community partners, and word of mouth. To strengthen outreach to hospitals and discharge planners, RETAIN Kentucky embeds a participant recruiter within a health care partner agency and integrates RETAIN into its Human Resources units, the University of Kentucky Healthcare system, and Cooperative Extension Service System.

Evaluation design highlights

Type of design: Individual random assignment

Key program implementation staff and roles:

- **Return-to-work coordinators:** Provide early intervention services, including return to work plans, aimed at getting employees back to work or help them stay at work while navigating needed medical, employment, and social services
- **Peer mentors:** Non-medical professionals or therapists who assist enrollees in reaching their stay-at-work/return-to-work goals by drawing on their personal experience and resource networks
- **Assistive technology specialists:** Work in collaboration with return-to-work coordinators to assess enrollees' assistive technology and accommodation needs

Recruitment approach:

- The Kentucky team identifies potential RETAIN enrollees through participating employers, health care providers, and self-referrals

A return-to-work (RTW) coordinator conducts intake within 24 hours of receiving a referral. The RTW coordinator determines enrollees' eligibility then randomly assigns them to Group A (enhanced intervention or treatment group) or Group B (basic or control group) using Confirmit, a system that Mathematica configured to independently assign enrollees to a treatment or control group instantly upon data entry. All enrollees complete risk and work needs assessments at intake in collaboration with a RTW coordinator. The RTW coordinator then reviews the results of the assessments and drafts a RTW plan that identifies the enrollee's RTW goal date, other employment goals, and services needed for the participant to stay at home or return to work.

B. Enrollment target and statistical power

The recruitment target is 3,200 enrollees. To achieve this target sample size over 30 months of enrollment, the state must enroll 107 workers (on average) per month. These enrollees are evenly split between the treatment and control groups. With 3,200 enrollees, the evaluator can detect an impact on employment rates in the fourth quarter after enrollment as small as 3.7 percentage points (or 5 percent) relative to the control group mean.

Overall recruitment target

3,200 enrollees

Monthly enrollment target

About 107 enrollees per month

C. Services available to the treatment and control group enrollees

Enrollees assigned to the treatment group receive intensive vocational rehabilitation case management. This approach relies on evidence-based services and strategies to improve RETAIN enrollees' ability to return to work with the same employer or a different employer, as needed. These services and strategies include vocational assessments, assistive technology, and peer-to-peer support.

RTW coordinators communicate with the enrollee's employer to garner support, assistance, or guidance related to work accommodations. For example, RTW coordinators may work with employers to provide assistive technology or promote changes to the work environment. The RTW coordinator also guides the participant through the Job Accommodation Network's interactive website for additional accommodation strategies. Furthermore, treatment enrollees have peer mentors available to help guide them through issues related to disabilities in the workplace. Treatment enrollees may also receive career counseling or job-seeking skills training. The RTW plan is reviewed by the RTW coordinator on an ongoing basis and amended in collaboration as needed, based on the enrollee's progress. The case remains open until the RTW plan is complete, but for no longer than six months.

Enrollees in the control group continue to receive medical services. In addition, a RTW coordinator creates a RTW plan with the enrollee and refers them to appropriate existing resources. The RTW coordinator works with the control group enrollee for approximately 2.5 hours in total. Thus, the coordination that the control group receives from the RTW coordinator is not as extensive as the case management that the treatment group receives.

D. Provider participation and resources

Physician advocates for RETAIN (that is, physician champions) act as change agents to encourage participation in RETAIN and adoption of stay-at-work/return-to-work (SAW/RTW) techniques within practices. For example, they assist in marketing trainings for medical providers. These trainings are based on SAW/RTW principles, universal design, and job accommodation. In addition, health care professionals who review new and updated RETAIN training materials as part of continuous quality improvement within their practice receive financial incentives.

Appendix C: Minnesota Profile

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Minnesota

- **Lead agency:** Department of Employment and Economic Development (DEED)
- **Key medical partners**: Mayo Clinic, one or more other non-Mayo medical facilities that are diverse in terms of geography and population (facilities to be determined)
- **Key workforce and other partners:** Department of Labor and Industry, Workforce Development, Inc. (WDI), Healthforce Minnesota, Crestview Senior Services (employer champion), workforce development boards, vocational rehabilitation services, CareerForce/American Job Centers
- **Populations served:** Workers older than 18 who live and work in Minnesota and have work-related or non-work-related conditions, any acute illness or injury affecting work, have had surgery in the past three months, or are anticipating surgery within the next two months
- **Catchment area:** Statewide (87 urban, rural, and suburban counties and 22 opportunity zones)

I. Minnesota RETAIN Program Components

Program components		
Medical provider services		
	Training medical providers	• All participating physicians have the option to take online, on-demand training modules. The training focuses on the relationships between work and well-being, writing appropriate work restrictions, and the importance of communication among employers, workers, and medical providers. • Training modules contain content from the Mayo Clinic's Opioid Stewardship Program to encourage medical providers to avoid unnecessary or prolonged use of opioids for patients' pain management. • RTW case managers provide SAW/RTW guidance to medical providers as needed.
	Incentivizing medical providers	• Medical providers receive a $50 gift card for completing training modules. • Medical providers are eligible for Continuing Medical Education credit upon completion of training modules. • Medical providers can call a free telephone hotline for guidance regarding work restrictions.

Program components		
RTW coordination services		
	Coordinating RTW services	• Employment is considered a social determinant of health in Minnesota RETAIN's electronic health record; thus, one of the ways that RTW case managers identify potential enrollees is by reviewing a list of patients in the electronic health record who are at risk for workplace disabilities. • RTW case managers develop SAW/RTW plans in collaboration with the enrollee, medical providers, and workforce partners. • RTW case managers communicate directly with enrollees and medical providers during medical appointments and note progress. • If employers are unable to accommodate an enrollee's temporary or permanent work restrictions, RTW case managers refer them to Workforce Development, Inc. (WDI) for employment and training services.
	Communicating among RETAIN stakeholders	• RTW case managers are embedded in the healthcare team to ensure early and frequent communication between all stakeholders. • RTW case managers communicate regularly with treatment enrollees and provide suggestions to the enrollee's medical provider to support the enrollee's RTW.
	Monitoring treatment enrollee progress	• A Mayo Clinic-developed software platform, Occupational Case Management, and the Workforce One database store all information about enrollees' employment-related and medical progress; RTW case managers enter information into these databases following communications with enrollees. • RTW case managers periodically monitor an enrollee's RTW/SAW progress by checking in with medical providers and employers and determining if the enrollee's injury/illness can be accommodated within his or her pre-injury job.
Other RTW services		
	Supporting workplace-based interventions	• State Workforce Strategy Consultants and local employer navigators create awareness about RETAIN by educating employers and identifying employers to serve as employer champions. These employers encourage the adoption of RETAIN within their industries. Key industries include manufacturing, health care, agriculture, government, transportation, construction, and mining.
	Retraining or rehabilitating enrollees	• RTW case managers refer enrollees to WDI when their employers are not able to accommodate temporary or permanent work restrictions. If the restrictions are temporary and employers cannot accommodate them, RTW case managers work with the WDI employment specialist to identify alternative work sites. Enrollees work at the alternative sites until their conditions improve enough to return to their primary employers.

RTW = return to work; SAW = stay at work; WDI = Workforce Development, Inc.

II. Evaluation Design

The evaluation of Minnesota RETAIN uses an individual random assignment design. Enrollees are randomly assigned to either a treatment group that is offered RETAIN services or a control group.

A. Recruitment and enrollment

Minnesota RETAIN's service model is built on the idea that employment is an important social determinant of health. Thus, there is a strong emphasis on documenting employment history and status in the electronic health record, Epic, to support stay-at-work/return-to-work (SAW/RTW) services for enrollees. One way that potential enrollees are recruited is via medical providers' documentation in Epic. Providers document when a medical diagnosis affects a patient's ability to work, and this documentation enables RTW case managers to screen thousands of patients for RETAIN eligibility. The program also recruits potential enrollees from (1) health care provider referrals, (2) screenings of forms that injured or ill workers file related to the Family and Medical Leave Act, (3) screenings of daily emergency department visit logs, (4) reviews of provider clinical calendars, (5) outreach via the Minnesota RETAIN website, (6) marketing efforts to the general public (for example, social media), and (8) self-referrals. Minnesota RETAIN staff may also screen patients who enroll in the Mayo Clinic's COVID Activity Rehabilitation Clinic for potential co-enrollment in RETAIN. In addition, a community engagement specialist seeks to secure relationships with black, Indigenous, and people of color, and rural communities to ensure that RETAIN reaches the most underserved populations in the state.

Evaluation design highlights

Type of design: Individual random assignment

Key program implementation staff and roles:

- **Return-to-work case manager:** Leads coordination between employers, workforce development services and health care providers to ensure functionally based restrictions are available, develop return-to-work plans, and evaluate and monitor the effectiveness of accommodations
- **Workforce Development, Inc., employment specialist:** Provides information about RETAIN to employers; identifies employer champions; and coordinates employment and training services, temporary work experiences, and supportive services (such as care payments or gas vouchers)
- **Referral and enrollment lead:** Supervises return-to-work case managers and leads outreach efforts to promote recruitment and other marketing activities
- **Community engagement specialist:** Establishes credibility and secures relationships with black, Indigenous, and people of color communities/leadership

Recruitment approach:

- Minnesota RETAIN identifies potential enrollees through provider referrals, screenings of health records and the Mayo Clinic's COVID Activity Rehabilitation Clinic program records, and community outreach (such as community engagement specialist and social media)
- Return-to-work case managers use Confirmit to assign enrollees to a treatment or control group

RTW case managers are responsible for screening workers for eligibility for RETAIN. If a RTW case manager determines a worker is potentially eligible, he or she contacts the worker to explain the program and assesses the worker's interest in participation. If the worker is interested, the RTW case manager conducts an intake, which includes obtaining informed consent and all necessary enrollment paperwork. Participants are then randomized to the treatment or control group using Confirmit, a system Mathematica configured for random assignment.

B. Enrollment target and statistical power

The recruitment target is 3,200 enrollees. To achieve this target sample size over 30 months of enrollment, the state must enroll about 107 enrollees per month. These enrollees will be evenly split between the treatment and control groups. With 3,200 enrollees, the evaluation can detect an impact on employment rates in the fourth quarter after enrollment as small as 3.7 percentage points (or 5 percent) relative to the control group mean.

Overall recruitment target

3,200 enrollees

Monthly enrollment target

About 107 enrollees per month

C. Services available to the treatment and control group enrollees

Enrollees assigned to the treatment group receive medical and employment services coordination via a RTW case manager. The RTW case manager reviews work restrictions received from the enrollee's treating provider and regularly communicates any restrictions to employers. If the employer is not receptive to or unable to provide accommodations, the RTW case manager coordinates services with workforce development partners. Workforce development services might include career interest and strength inventories, assistance with training or re-employment, and temporary paid work experiences. The RTW case manager continues to work with the enrollee until they return to work with or without restrictions or meet the criteria for completion of the RETAIN program. Treatment group enrollees receive a $50 incentive for enrolling in RETAIN and a $50 incentive for completing the program. They may also receive financial or non-financial supports (such as tuition reimbursement, childcare incentives, or gas cards from workforce development partners) to encourage active participation.

Enrollees who are assigned to the control group receive standard care, which may include services already available through employers or workforce development agencies. The RTW case manager does not interact with control group enrollees beyond the consenting visit to participate in RETAIN. Control group enrollees receive $50 after completing the consenting visit.

D. Provider participation and resources

Participating physicians are granted Continuing Medical Education credit for completing on-demand training modules related to evidenced-based strategies for determining appropriate work restrictions, developing RTW plans, and communicating with stakeholders. They also receive a $50 gift card for completion of the modules. One physician at each participating health care facility acts as provider champion to enhance coordination among stakeholders, including RTW case managers, other providers, and workforce development services. Providers also have a telephone hotline available to them to obtain recommendations from Minnesota RETAIN medical directors and answer questions about work restrictions.

Appendix D: Ohio Profile

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Ohio RETAIN

- **Lead agency:** Ohio Department of Job and Family Services
- **Key medical partner:** Mercy Health
- **Key workforce and other partners:** Ohio Department of Job and Family Services, Ohio Governor's Office of Workforce Board, Ohio Bureau of Workers' Compensation, Opportunities for Ohioans with Disabilities, local workforce development boards, Ohio Department of Health
- **Populations served:** Adults ages 18–65 with non-work-related musculoskeletal conditions or cardiovascular diagnoses that affect employment
- **Catchment area:** Youngstown (Mahoning, Columbiana, and Trumbull Counties), Toledo (Lucas County), and Cincinnati (Butler, Clermont, Hamilton, and Warren Counties)

I. Ohio RETAIN Program Components

Program components		
Medical provider services		
	Training medical providers	• All participating providers have access to a toolkit and five video training modules on occupational health best practices. • After a year of participation in RETAIN, medical providers complete a refresher training on SAW/RTW best practices.
	Incentivizing medical providers	• Medical providers are eligible for Continuing Medical Education Credits for attending training. • Medical providers receive $500 for completing all five video training modules and $100 for completing the refresher module. • Medical providers receive compensation for performing best practice activities, such as communicating with employers, completing activity prescriptions, completing RTW plans, and completing biopsychosocial assessments.

Program components		
RTW coordination services		
	Coordinating RTW services	• RTW coordinators provide health care and workforce services coordination, establish individualized RTW plans based on standards in the Official Disability Guidelines database, reduce RTW barriers, and offer psychosocial support to treatment group enrollees. • RTW coordinators provide information on work-absence programs (such as the Family Medical Leave Act) and assist treatment group enrollees in obtaining the community resources necessary to participate in RETAIN (such as transportation, health insurance, or housing).
	Communicating among RETAIN stakeholders	• RTW coordinators are responsible for rapid stakeholder communications, specifically with providers and enrollees. • RTW coordinators and the local area business teams are responsible for communicating with employers; protocols delineate specific roles and intent of contact with the employer. • Communication protocols between local partners are customized for each region to align with each local workforce development board's processes. • A Medical Advisory Committee consisting of physicians and other providers (such as physical therapists and nurse practitioners) oversees continuous quality improvement efforts to enhance stakeholder communication and promote provider participation in RETAIN.
	Monitoring treatment enrollee progress	• RTW coordinators capture treatment group medical and employment progress in a module in Epic, Ohio RETAIN's electronic health record. • Data on health status, employment status, and RTW date are validated for accuracy and completeness on a weekly basis. • Partners in OhioMeansJobs centers track participant services and enter supplemental employment outcomes in the Ohio Workforce Case Management System.
Other RTW services		
	Supporting workplace-based interventions	• The Business Resource Network, which represents local area business service teams including the OhioMeansJobs center operators, Workforce Innovation and Opportunity Act program staff, Opportunities for Ohioans with Disabilities staff, and RTW coordinators, offers technical assistance on accommodations and creates informational resources for participating employers. • RTW coordinators assist with employer outreach and technical assistance in coordination with the OhioMeansJob center partners.
	Retraining or rehabilitating enrollees	• OhioMeansJobs center for workforce services orients enrollees on available services and conducts an assessment of enrollee needs, as well as provides RETAIN enrollees with job search assistance or enrolls them in partner programs for more intensive services.

RTW = return to work; SAW = stay at work.

II. Evaluation Design

The evaluation of Ohio RETAIN uses an individual random assignment design. Enrollees are randomly assigned to either a treatment group that is offered RETAIN services or a control group.

A. Recruitment and enrollment

The state recruits workers as they receive care from health service providers. The RETAIN return-to-work (RTW) coordinators screen potential enrollees, enroll eligible individuals, and coordinate care for individuals in the treatment group. Individuals who are potentially eligible for enrollment include people with non-work-related musculoskeletal conditions and cardiovascular diagnoses that affect employment.

To screen for study eligibility, RTW coordinators review physician notes, medical charts, and other information to identify important risk factors related to the severity of the potential enrollee's condition. This assessment is expected to improve Ohio RETAIN's ability to target services to those who can most benefit from them. Afterward, referral and enrollment coordinators help RTW coordinators enter data, randomize enrollees to a treatment or control group at a separate location, and notify enrollees of their random assignment status by letter. Ohio staff conduct random assignment via Confirmit, a system that Mathematica configured to assign enrollees to a study group.

Evaluation design highlights

Type of design: Individual random assignment

Key program implementation staff and roles:

- **Return-to-work coordinators:** Screen and enroll eligible individuals and provide health and workforce services coordination to the treatment group
- **Referral and enrollment coordinators:** Assist with screening patients, enrollee consent processes, and data entry
- **OhioMeansJobs centers:** Coordinate and track workforce support services
- **Regional social workers:** Assess health- and social-related barriers and provide supportive services such as transportation, food, and rent assistance

Recruitment approach:

- Ohio RETAIN identifies potential enrollees through participating health service providers in the catchment area
- Return-to-work coordinators use Confirmit to assign enrollees to a treatment or control group

B. Enrollment target and statistical power

The recruitment target is 3,500 enrollees. To achieve this target sample size over 30 months of enrollment, the state must enroll 117 workers per month. These enrollees will be evenly split between the treatment and control groups. With 3,500 enrollees, the evaluation can detect an impact on employment rates in the fourth quarter after enrollment as small as 3.6 percentage points (or 5 percent) relative to the control group mean.

Overall recruitment target

3,500 enrollees

Monthly enrollment target

117 enrollees per month

C. Services available to the treatment and control group enrollees

Treatment group enrollees are eligible to receive a combination of health and workforce services. RTW coordinators provide health care coordination and psychosocial support, establish RTW plans, and refer treatment enrollees to workforce services and other community partners (such as housing or transportation resources). Social workers assist RTW coordinators with linking enrollees to community resources and addressing barriers to participation in RETAIN. For treatment group enrollees only, RTW coordinators complete a customized plan for recovery starting with the Official Disability Guide assessment. The results of this assessment are included in an Enrollment Plan of Care, which is housed in the electronic medical record. RTW coordinators do not provide services to control group enrollees.

Case managers from OhioMeansJobs centers provide workforce services, such as job search assistance or assistance enrolling in partner programs for more intensive services (such as vocational rehabilitation, training, supportive services, and staff-assisted job search assistance). In addition, local workforce development boards and representatives from Business Resource Networks and their partners, including OhioMeansJobs centers, assist RTW coordinators with employer outreach and provide technical assistance on workplace accommodations for treatment enrollees.

D. Provider participation and resources

Participating medical providers treat both treatment and control group enrollees. Providers receive a toolkit, watch five video training modules (including training on RTW best practices), and receive nominal cash incentives for completing activities for treatment group enrollees. Ohio implemented safeguards to minimize contamination from providers serving both treatment and control group enrollees. The provider toolkit clarified that control group enrollees should continue to receive standard care, and the provider enrollment form specifies that control group enrollees receive standard care. In addition, a pop-up warning in the electronic medical record identifies a patient as a member of the treatment or control group. Ohio also audits control group enrollee electronic medical records to check for provider notes suggesting the delivery of RETAIN services intended only for treatment group enrollees.

Appendix E: Vermont Profile

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Vermont

- **Lead agency:** Vermont Department of Labor
- **Key medical partners:** OneCare Vermont, health care practices affiliated with OneCare Vermont, Department of Health, Department of Mental Health, Blue Cross Blue Shield of Vermont
- **Key workforce and other partners:** Workforce Development Division and Board, Division of Vocational Rehabilitation, Invest EAP, Vermont Chamber of Commerce, Recovery Vermont, IPS Employment Center, Department of Libraries, Responsive Librarianship Lab, Division of Disability Determination Services, Northern Vermont University, Vermont Executive Director of Racial Equity
- **Populations served:** Workers age 18 or older with an illness or injury that occurred, flared, or worsened within the past six months and limits their ability to stay at work or return to work (Individuals are ineligible if they have been out of work more than 12 weeks and have no projected work capacity, are applying for Supplemental Security Income or Social Security Disability Insurance, or have an unmanaged substance use disorder.)
- **Catchment area:** Statewide (69 health care practices in 14 counties; 12 opportunity zones)

I. Vermont RETAIN Program Components

Program components		
Medical provider services		
	Training medical providers	• Medical providers from all 68 participating practices are invited to take a SAW/RTW best practices training and complete pre- and post-training surveys.
	Incentivizing medical providers	• Medical providers are eligible for Continuing Medical Education Credits for attending training. • Practices receive a $500 incentive for participating in RETAIN and $30 for each patient who enrolls.

Program components		
RTW coordination services		
	Coordinating RTW services	• RTW coordinators develop RTW plans in collaboration with the enrollee, medical providers, and workforce partners and use information received through the iMHere (interactive Mobile Health & Rehabilitation) app. • RTW coordinators help enrollees work towards the goals in the RTW plan. • RTW coordinators use a RTW Services Inventory to match enrollees with available services.
	Communicating among RETAIN stakeholders	• Enrollees sign an authorization form that allows the RTW coordinator to contact individuals that the enrollee names as part of their RTW care team. • RTW coordinators use strength-based coaching to encourage enrollees to communicate directly with the RTW care team. • An advisory board fosters communication among health, workforce, and other partners at the leadership level.
	Monitoring treatment enrollee progress	• RTW coordinators document screening data, participant authorization and enrollment forms, and RTW coordination data in a Research Electronic Data Capture (REDCap) system. • A Microsoft Excel recruitment and enrollment tracker generates real-time enrollment reports for each participating practice. • RTW coordinators distribute the Work-Disability Functional Assessment Battery to assess enrollees' functional abilities at program enrollment and completion. • RETAIN staff extract data from the America's Job Link Alliance database to analyze employment service data.
Other RTW services		
	Supporting workplace-based interventions	• The Workforce Development Division, Division of Vocational Rehabilitation, Employer Assistance Program, Vermont Department of Health, and Vermont Chamber of Commerce assist with activities such as training employers on the relationships between work and health for employees. • A RETAIN employee assistance program counselor facilitates workplace interventions between employers and employees.
	Retraining or rehabilitating enrollees	• A RETAIN Workforce Development lead facilitates the integration of employment services into RETAIN and works to improve relationships between RTW coordinators and local career specialists or vocational rehabilitation counselors.

RTW = return to work; SAW = stay at work.

II. Evaluation Design

The evaluation of Vermont RETAIN uses clustered random assignment. Sixty-eight health care practices will be randomly assigned to the treatment or control group (50 percent of the practices are assigned to each group). The practice's study group assignment determines the enrollee's study group; patients who visit a practice assigned to the treatment (control) group, receive treatment (control) group services.

A. Recruitment and enrollment

The primary source for recruitment efforts are patients from 68 OneCare Vermont practices. OneCare Vermont is Vermont RETAIN's primary medical partner and a statewide accountable care organization. Enrollees are identified via screenings and provider referrals at participating practices. Staff from participating practices market and show their support for RETAIN by displaying posters in their offices about the program and distributing informational flyers and cards to patients. In addition to these advertising strategies, enrolled practices administer a screening survey to adult patients. Patients who answer "yes" to "Are you 18 years of age or older?" and "Do you currently have an injury or illness that limits (or could limit) your ability to stay at or return to work?" are contacted by a study coordinator who explains the RETAIN program. Once patients are eligible and interested in participating in the study, they sign a health care-compliant form to authorize communication between the return-to-work (RTW) coordinator, their provider, and individuals they choose to be on their RTW care team. They also receive a link to online forms or receive a mailed packet to complete intake forms. The study coordinator then determines whether the enrollee's practice is assigned to the treatment or control group and notes the status in the Research Electronic Data Capture, or REDCap, system.

Evaluation design highlights

Type of design: Clustered random assignment

Key program implementation staff and roles:

- **Return-to-work coordinators:** Systematically assess treatment enrollees' barriers to work, work goals, and functional capabilities to create personalized return-to-work plans; use strength-based coaching to provide care coordination and stay-at-work/return-to-work supports; serve as primary point of contact for treatment group practice providers
- **Study coordinators:** Serve as the primary point of contact for practice liaisons to support screening and enrollment, receive feedback, refine processes, and maintain practice engagement
- **Referral and enrollment lead:** Works closely with the marketing team; responsible for tracking enrollment and recommending marketing or outreach strategies
- **Workforce development lead:** Responsible for integrating employment services into the Vermont RETAIN program

Recruitment approach:

- Vermont RETAIN identifies potential enrollees via health care provider screenings at participating practices (which display RETAIN posters and distribute flyers and cards to patients)
- Participating practices are assigned to the treatment or control group at the start of the study
- Individuals are assigned to a study group based on the participating practice that they visit for care

B. Enrollment target and statistical power

The recruitment target is 2,040 enrollees and 68 health care practices. To achieve this target sample size, the state must enroll 30 enrollees (on average) from each practice during the 30-month enrollment period. With 2,040 enrollees and 68 clusters, the evaluation can detect an impact on employment rates in the fourth quarter after enrollment as small as 6.2 percentage points (or 8.2 percent) relative to the control group mean.

Overall recruitment target

2,040 enrollees

Practice enrollment target

30 enrollees per practice over the 30-month enrollment period

C. Services available to the treatment and control group enrollees

Upon intake, study coordinators provide program resources to enrollees in both the treatment and control group. For example, study coordinators provide Vermont's Best Practice Resources and Training, which details how to manage work disability risks and prevent long-term unemployment. Study coordinators also collect information needed for study compensation, inform enrollees about American Job Center services, and assist with opening a JobLink account if the enrollee doesn't already have one. After intake, control group enrollees receive a financial incentive for participating in the study and have no further contact with the RETAIN program.

The study coordinator assigns treatment enrollees to a RTW coordinator who provides the enrollee with health and employment services coordination. RTW coordinators use motivational interviewing to encourage enrollees' ongoing engagement in the study and empower them to advocate for themselves in the workplace. Study coordinators provide enrollees with instructions for downloading and using an Interactive Mobile Health and Rehabilitation (iMHere) app. The iMHere app serves as the primary mode of communication between the RTW coordinator and the enrollee, except when the enrollee prefers to communicate by phone. The app also includes important assessments such as the Work-Disability Functional Assessment Battery (WD-FAB), which enables enrollees to self-report their functional capabilities to the RTW coordinator. Once enrollees complete the functional assessment, their RTW coordinator calls them to review the responses and begin crafting a RTW plan with the enrollee. This plan is also aided by a RTW Services Inventory that RTW coordinators use to match enrollees with available services. The RTW coordinator then communicates the plan to the provider and continues meeting with the enrollee until the goals in the plan are achieved or six months has elapsed since enrollment in RETAIN (whichever comes first). Prior to exiting RETAIN, enrollees complete the WD-FAB again as well as a satisfaction survey. Once they complete these items, they receive financial compensation for participating in the study.

D. Provider participation and resources

Participating medical providers receive training on how to identify an individual's risk of work disability and how to manage the risk to prevent long-term unemployment (for example, how to write a RTW letter). Past in-person trainings included "The Importance of Work for Health" and "COVID-19 Readiness to Work." Both trainings offered Continuing Medical Education credits for providers. Vermont RETAIN plans to deliver additional trainings online to expand access to trainings. The trainings are open to clinic staff and care managers in addition to physicians. Participating practices receive a $500 incentive for establishing RETAIN processes and procedures. To encourage enrollment, practices receive $30 for each of their patients who enrolls in RETAIN.

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