The Retaining Employment and Talent After Injury/Illness Network (RETAIN) Demonstration: Impacts Two Months After Enrollment

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Errata

(Updated February 26, 2026)

In a previous version of the report, the label for self-reported health status was incorrect. The original label of health status was "good, great, or excellent" and was changed to "very good or excellent". This error has been corrected in this version of the report and appendix.

Contents

Exhibits

Acronyms

COHE	Centers for Occupational Health and Education (Washington State)
DOL	U.S. Department of Labor
EMR	electronic medical record
RETAIN	Retaining Employment and Talent after Injury/Illness Network
RTW	return to work
SAW	stay at work
SSA	Social Security Administration
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
UI	unemployment insurance
VR	vocational rehabilitation

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Executive Summary

Each year, millions of workers in the United States leave the labor force, at least temporarily, because of a medical condition or illness (Ben-Shalom et al. 2021; Hollenbeck 2015). Many of these workers fall through critical cracks in the social support system and exit the workforce permanently. Exits from the workforce can lead to subsequent adverse effects on standard of living (Schimmel and Stapleton 2012) and well-being (Ben-Shalom et al. 2018; Michaud et al. 2016). Without steady income and other benefits that often come with employment, such as health insurance, these workers and their families often turn to public programs such as Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI), which also provide access to public health insurance through Medicare and Medicaid. People who enter the SSDI and SSI programs rarely leave them (Ben-Shalom and Stapleton 2015; Liu and Stapleton 2011; Maestas et al. 2013; French and Song 2014).

Affected workers, the federal government, and state governments all stand to gain from the implementation of strategies that help people stay at work or return to work following an injury or illness (Ben-Shalom and Burak 2016). The potential financial and nonfinancial benefits to workers who can keep their jobs instead of relying on federal disability benefits are considerable, including increased income because average SSDI benefit amounts are lower than average earnings for workers. Both the federal and state governments stand to gain from increased tax revenues and reduced outlays on public assistance programs. Employers might benefit from potential improvements to staff morale, productivity, turnover, and legal liability, though these effects could differ depending on factors such as firm size, industry, and turnover costs (Bardos et al. 2015).

The Retaining Employment and Talent after Injury/Illness Network (RETAIN) demonstration was a collaborative effort by the U.S. Department of Labor (DOL) and the Social Security Administration (SSA) to help workers stay in the labor force after they experience an injury or illness. The goal of RETAIN was to implement and test programs that used early-intervention stay-at-work/return-to-work (SAW/RTW) strategies with adult workers who had recently experienced the onset or exacerbation of an injury or illness that challenged their ability to work. In Phase 1, which began in 2018, DOL awarded funds to eight state agencies to develop and pilot test programs to help those who experience a potentially disabling condition stay at work or return to work. In Phase 2, which began in 2021, DOL awarded approximately $103 million in cooperative agreements to five states (Kansas, Kentucky, Minnesota, Ohio, and Vermont) to continue and expand their programs. The five RETAIN programs began enrolling participants in late 2021 and early 2022 through mid-May 2024.

Under contract to SSA, Mathematica is conducting an independent evaluation of the RETAIN programs. Mathematica's evaluation has several components, including rigorous assessments of the programs' implementation and their impacts on enrollee service use, employment, and health in the months immediately following enrollment, as well as impacts on outcomes in the year after enrollment.

This report presents the five RETAIN programs' early impacts on enrollee service use, employment, and health; it is the first of two reports on the programs' impacts. The report findings are based on Mathematica's analysis of data from a follow-up survey of RETAIN enrollees that Mathematica conducted about two months after enrollment. The survey asked enrollees about their use of SAW/RTW services and

early work- and health-related outcomes. Each RETAIN program used a random assignment study design, such that some enrollees were in a treatment group that could use RETAIN services and the others were in a control group that could use limited or no services besides those typically available in the community. To estimate each program's early impacts on enrollee outcomes, we compared the outcomes of treatment and control group enrollees as reported in the early follow-up survey. In a future report, the final evaluation report, we will present the programs' impacts on enrollee outcomes in the year after enrollment.

A. RETAIN program model

The RETAIN program model builds on an SAW/RTW intervention that has shown promise helping workers with injury or illness remain in the workforce: Washington State's Centers for Occupational Health and Education (COHE). Prior research has found that COHE was associated with reductions in the likelihood of being out of work and on disability, medical costs, and workers' compensation costs during the first year, and the likelihood of entry into permanent work disability status over eight years (Wickizer et al. 2011; Wickizer et al. 2018). Although COHE focused on people with work-related injuries or illnesses, RETAIN expanded the intended population to include those with non-work-related injuries if they were employed or in the labor force when the injury or illness first occurred, or when an existing condition had worsened and began to challenge their ability to work. The RETAIN cooperative agreements specified minimum eligibility criteria for all the programs: to be eligible, individuals needed to have a health condition that was either new or recently exacerbated, be in the labor force at the onset of the condition, and not be receiving or have a pending application for SSDI or SSI benefits.

The RETAIN programs followed a core program model (Exhibit ES.1). Medical provider and RTW coordination services were central components of the model that DOL and SSA expected all five programs to provide to all treatment group enrollees. Other components of the model could vary by program or treatment enrollees' needs. DOL and SSA expected successful RETAIN programs to provide services through coordinated partnerships between state and local workforce development entities, healthcare providers, and other partners. RETAIN programs also pursued informal partnerships with employers and other organizations to prompt referrals of workers who could benefit from RETAIN. RETAIN treatment enrollees were eligible to use RETAIN services for up to six months. States had to enroll 80 percent of enrollees within three months since they last worked and ideally began providing services to treatment enrollees immediately upon enrollment.

Exhibit ES.1. RETAIN program model

Service category	Program component	Definition
Medical provider services		
	Training medical providers	Programs deliver training to medical providers that covers occupational medicine best practices and alternatives to opioids for pain management.
	Offering financial compensation or other incentives to medical providers	Programs offer incentives for medical providers to use occupational medicine best practices and alternatives to opioids for pain management.

Service category	Program component	Definition
RTW coordination services		
	Coordinating RTW services	Programs coordinate the delivery of medical and employment services to participants, including developing and implementing an RTW plan. An RTW coordinator usually leads the coordination of RTW services.
	Communicating among parties involved in RTW plan	Program staff communicate with other parties such as the participants' employer about their plan or ability to return to work. This communication should occur early in delivering RETAIN services to support the participant in returning to work as soon as possible.
	Monitoring treatment enrollees' progress	Programs track and monitor the participants' medical and employment progress.
Other RTW services		
	Supporting workplace-based interventions	Programs offer services to facilitate the participants' return to work. This might include modifying their duties and adjusting their schedules, tasks, and physical worksites.
	Retraining or rehabilitating enrollees	Programs offer or connect participants to retraining or rehabilitation services when participants can no longer perform their primary jobs or suitable alternate work.

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

B. RETAIN programs

Five states implemented RETAIN programs between 2021 and 2024. In each state, the lead agency worked with a consortium of partners, such as state or local workforce development entities, healthcare systems, and medical provider networks, to implement its RETAIN program. Each program was also free to specify (within the bounds of the cooperative agreement requirements) the organizational structure, service area, eligible population, and recruitment approach, and experimental study design (Exhibit ES.2).

Exhibit ES.2. RETAIN programs and their key features

Program	Key partners	Service area, eligible population[a], and referral sources
RETAINWOR*KS*	**Lead agency:** Kansas Department of Commerce **Healthcare partners:** Ascension Via Christi, Stormont Vail Healthcare, University of Kansas Medical Center, Kansas Clinical Improvement Collaborative **Workforce partners:** All five local workforce development boards in Kansas, Kansas Business Group on Health, Kansas Society for Human Resource Management	**Service area:** Entire state (105 counties in five local workforce development areas) **Eligible population:** Adults who are employed or seeking employment and have a work- or non-work-related injury or illness **Referral sources:** EMR reports, medical providers, local workforce development area staff, employers, self-referrals

Program	Key partners	Service area, eligible population[a], and referral sources
RETAIN Kentucky	**Lead agency:** Kentucky Department of Workforce Investment, Office of Vocational Rehabilitation **Healthcare partners:** University of Kentucky HealthCare, University of Louisville Health **Workforce partners:** University of Kentucky Human Development Institute, Council of State Governments, Kentucky Chamber of Commerce	**Service area:** Entire state (120 counties) **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** Office of Vocational Rehabilitation, targeted online advertising, healthcare partners, workforce partners, employers, self-referrals
Minnesota RETAIN	**Lead agency:** Minnesota Department of Employment and Economic Development **Healthcare partners:** Mayo Clinic, HealthPartners TRIA **Workforce partners:** Workforce Development, Inc.	**Service area:** Entire state (87 counties) **Eligible population:** Adults who are employed or seeking employment and have a work- or non-work-related injury or illness **Referral sources:** EMR reports, mass email campaigns to Mayo Clinic patients, targeted online advertising, medical providers, employers, self-referrals
Ohio RETAIN	**Lead agency:** Ohio Department of Job and Family Services **Healthcare partners:** Bon Secours Mercy Health **Workforce partners:** Local workforce development boards, Opportunities for Ohioans with Disabilities, Ohio Bureau of Workers' Compensation	**Service area:** Three regions in Ohio, encompassing the cities of Youngstown, Toledo, and Cincinnati **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** EMR reports, medical providers, employers, self-referrals
Vermont RETAIN	**Lead agency:** Vermont Department of Labor **Healthcare partners:** Dartmouth Health, OneCare Vermont **Workforce partners:** HireAbility Vermont, Invest EAP	**Service area:** Entire state (14 counties) **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** Self-referrals through web-based pre-screeners

EMR = electronic medical record.

[a] The RETAIN cooperative agreements specified minimum eligibility criteria for all the programs. To be eligible, individuals needed to have a health condition that that challenged their ability to work, be in the labor force, and not be receiving or have a pending application for SSDI or SSI benefits.

Each program included the core components of the RETAIN program model. However, the federal sponsors of the RETAIN demonstration did not prescribe details for how to implement the program components; rather, each state proposed its own approach to each component and developed its own logic model for the program. The RETAIN states differed in how they implemented services and supports to account for differences in their intended populations and the services available to support program outcomes (Keith et al. 2024).

C. RETAIN evaluation and study design

The federal sponsors of the RETAIN demonstration and other interested parties, such as disability advocates and researchers, want to know whether and how the RETAIN programs achieved their goals,

and whether the benefits of each program outweighed its cost. Mathematica designed the RETAIN evaluation to document how the five states implemented their RETAIN programs and whether they were able to achieve their goals of improving enrollees' SAW/RTW outcomes (Berk et al. 2021). The RETAIN evaluation consistently treated the five RETAIN programs as independent programs.

Each RETAIN program implemented an experimental study design. Four states implemented an individual random assignment design (Kansas, Kentucky, Minnesota, and Ohio), and one state implemented a clustered random assignment design (Vermont). The evaluation team placed individuals or primary care practices at random in either a treatment group that was eligible for the program's full-service menu or a control group that could use limited or no RETAIN services (but could use the usual services available in their communities). For each program, the use of stratified random assignment should have resulted in two groups of enrollees with similar characteristics at the time of enrollment. If so, the evaluation can attribute any differences in the outcomes of these groups to the effects of the programs.

This report presents the impacts of each RETAIN program on short-term outcomes, including enrollees' use of SAW/RTW services and their work- and health-related outcomes as reported in the early follow-up survey of enrollees. It also presents findings on the extent to which the RETAIN programs' impacts on service use differed by enrollees' characteristics.

The early impact analysis relied on survey and administrative data. We collected data on early outcomes of RETAIN enrollees via an early follow-up survey conducted about two months after individuals enrolled in the evaluation. Across the five programs, the median time between enrollment in RETAIN and survey completion was about 11 weeks. We also used data that RETAIN programs collected at enrollment, along with administrative wage records, which captured baseline characteristics of enrollees at the time they enrolled. Because all of the outcomes were measured using survey data, the program-specific analysis samples for this report comprise all randomly assigned RETAIN enrollees who completed the early follow-up survey (ranging from 676 to 3,800, depending on the program).

In this report, we present estimates of the programs' impacts on enrollees' service use and outcome measures where we might see early signs that the programs were supporting enrollees' ability to stay at or return to work. We also provide descriptive statistics for four additional variables with the goal of providing context on the impact findings.

D. Findings from the early impact analysis

All of the RETAIN programs increased self-reported use of SAW/RTW services during the two months before the survey among treatment enrollees, compared to control enrollees (Exhibit ES.3). The most notable impacts were for the use of care coordination and employment-related support services, which were central components of the RETAIN program model. For some programs, the impacts on use of SAW/RTW services differed by enrollee characteristics such as age, sex, and diagnosis type.

None of the programs increased enrollees' employment rates or improved employment characteristics (such as work hours or weekly pay) at the time of the early follow-up survey (Exhibit ES.4). One program (RETAINWOR*KS*) increased the share of enrollees in the labor force (that is, either connected to an employer or looking for work). For two programs (MN RETAIN and OH RETAIN), we found evidence of

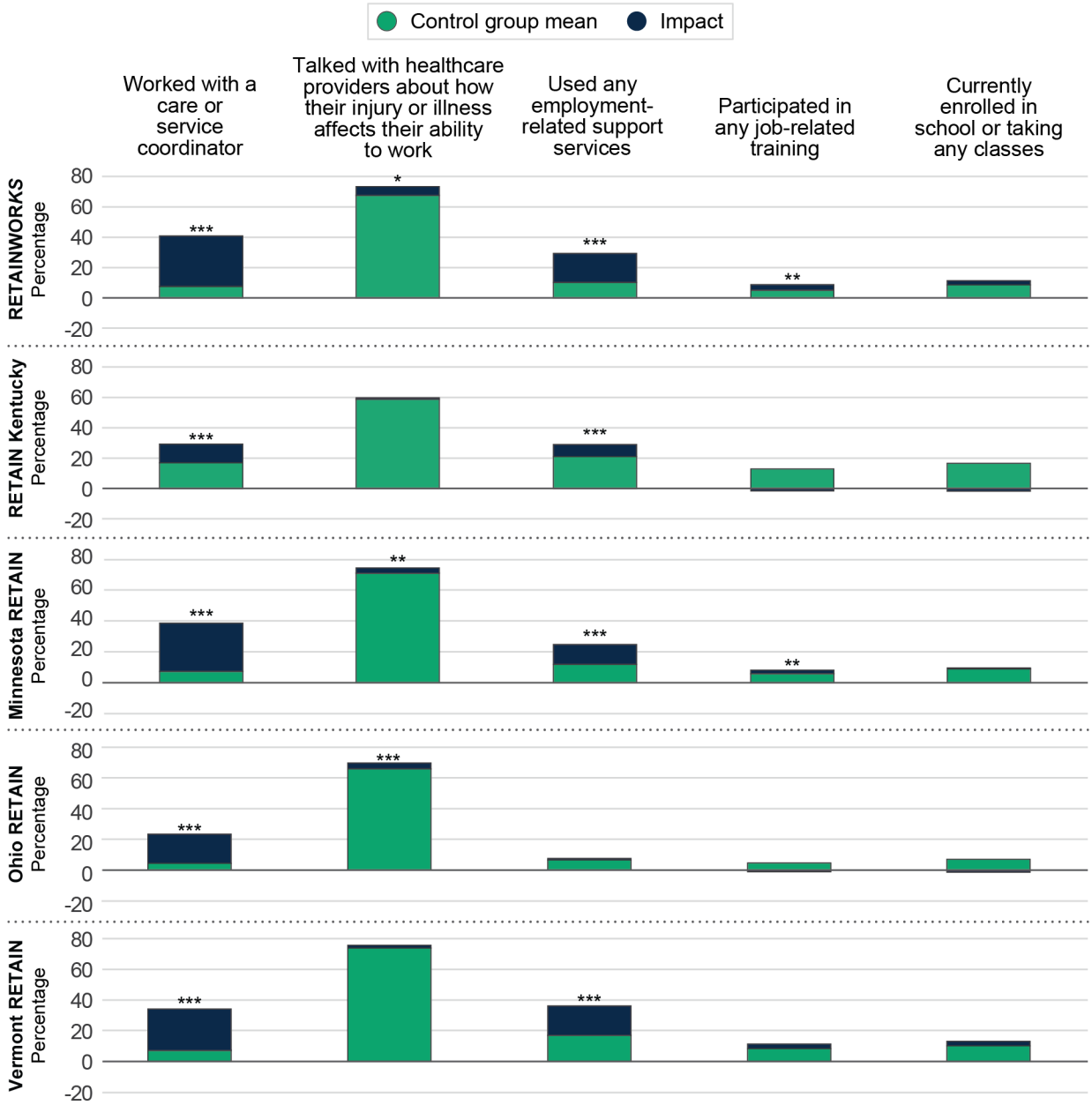
negative impacts on employment rates at the time of the early follow-up survey. However, those programs increased the share of enrollees who were not working but intending to return to work in the next 90 days, which suggests that there was no difference between the treatment and control groups in their commitment to remaining in the workforce. Each RETAIN program increased the share of treatment enrollees who were working and had received advice related to workplace accommodations.

There was limited evidence that the RETAIN programs generated substantial changes in treatment enrollees' self-reported health outcomes in the short term (Exhibit ES.5). One program (RETAINWOR*KS*) improved some health-related measures, including reducing the average number of poor physical health days in the previous month, the likelihood that pain interfered with work most or all the time, and the likelihood of receiving opioid prescriptions. However, in the other four programs, we found no evidence of impacts on any measure of enrollees' health at the time of the early follow-up survey.

Impacts on enrollees' employment and health outcomes could emerge over a longer follow-up period and when enrollees are further along in their medical recoveries. The early impact analysis did find that the programs improved some outcomes, such as use of care coordination services and receipt of advice about workplace accommodations, that could support improvements in health and workforce participation over the long term. The final evaluation report will assess the extent to which the five RETAIN programs achieved their goals of increasing enrollees' employment and earnings one year after enrollment.

Five study design features are highly relevant for interpreting the findings from the early impact study. First, Mathematica's process analysis examined the programs' implementation and service delivery during the first half of the programs' operating periods (through June 2023). The discussion of program implementation in this report reflects findings from this process analysis, along with more recent information obtained during Mathematica's evaluation technical assistance calls with RETAIN programs. Second, we did not examine all possible intermediate outcomes that could potentially affect SAW/RTW outcomes in the long term, such as enrollees' confidence or intensity of services used. Third, the measures of enrollees' early outcomes, which are based on self-reported survey data, depend crucially on respondents' interpretation of the survey questions and recall of past experiences. Fourth, we estimated impacts by examining differences in outcomes between treatment and control enrollees; thus, the impact estimates might not capture systems change induced by the programs that affected both groups similarly. Finally, during the two-month follow-up period, most enrollees were still recovering from their medical condition and unlikely to have experienced large changes in their labor force or health outcomes. A final evaluation report, expected in 2026, will examine the RETAIN programs' impacts on enrollee outcomes in the first year after enrollment, when it is more likely that significant program impacts on employment and health could have emerged.

Exhibit ES.3. RETAIN programs' early impacts on the use of SAW/RTW services

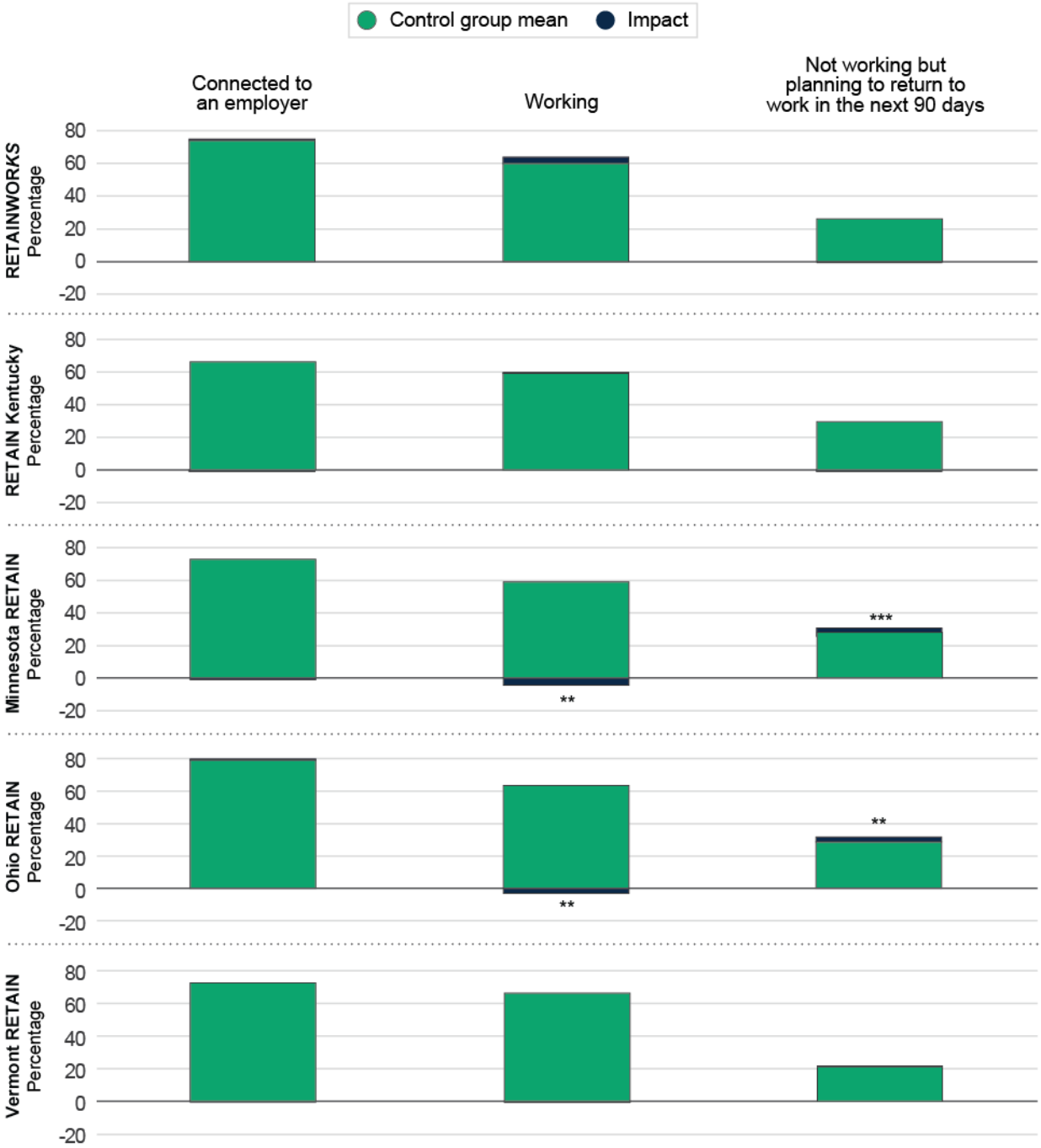


Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

Exhibit ES.4. RETAIN programs' early impacts on employment outcomes

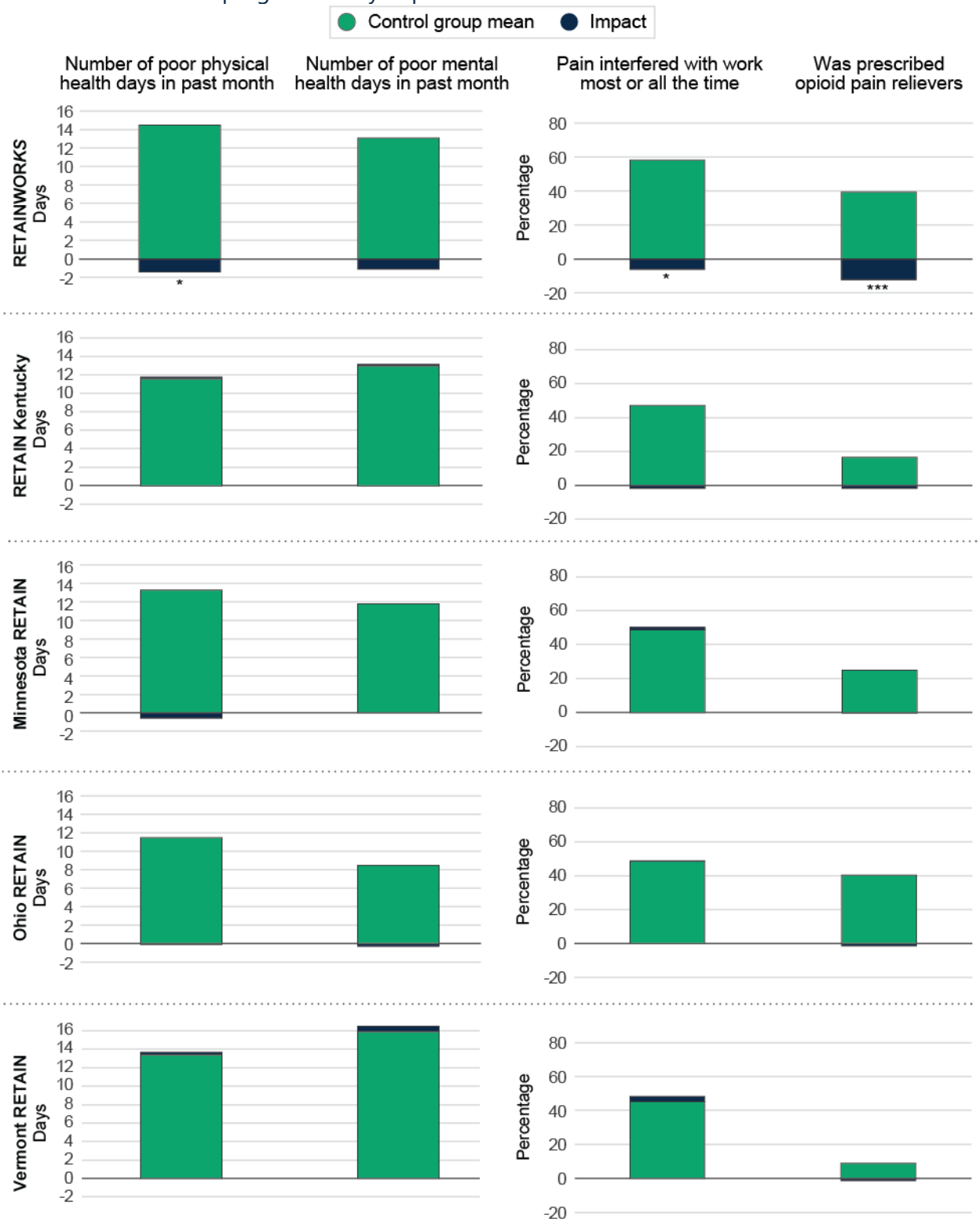


Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

Exhibit ES.5. RETAIN programs' early impacts on health outcomes



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

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I. Introduction

The Retaining Employment and Talent after Injury/Illness Network (RETAIN) demonstration was a collaborative effort by the U.S. Department of Labor (DOL) and the Social Security Administration (SSA) to help workers stay in the labor force after they experience an injury or illness. The goal of RETAIN was to implement and test programs that used early-intervention stay-at-work/return-to-work (SAW/RTW) strategies with adult workers who had recently experienced the onset or exacerbation of an injury or illness that challenged their ability to work. DOL selected five states (Kansas, Kentucky, Minnesota, Ohio, and Vermont) to implement such programs, which began enrolling participants in late 2021 and early 2022 through mid-May 2024. Participants eligible for RETAIN services could access them for up to six months. The demonstration aimed to build evidence on the effectiveness of SAW/RTW services in supporting the employment and earnings of workers who experience injury or illness and preventing their entry into federal disability programs.

Under contract to SSA, Mathematica is conducting an independent evaluation of the RETAIN programs. The evaluation has several components, including rigorous assessments of the programs' implementation and their impacts on enrollee outcomes in the months immediately following enrollment as well as during the one year after enrollment.

This report presents the five RETAIN programs' early impacts on enrollee service use, employment, and health; it is the first of two reports on the programs' impacts. The report findings are based on Mathematica's analysis of data from a follow-up survey of RETAIN enrollees that Mathematica conducted about two months after enrollment. The survey asked enrollees about their use of SAW/RTW services and early work- and health-related outcomes. Each RETAIN program used a random assignment study design, in which some enrollees were in a treatment group that could use RETAIN services and others were in a control group that could use limited or no services besides those typically available in the community. To estimate each program's early impacts on enrollee outcomes, we compared the outcomes of treatment and control enrollees, as reported in the follow-up survey. In a future report, the final evaluation report, we will present the programs' impacts on enrollee outcomes in the year after enrollment.

In the remainder of this introductory chapter, we first provide background on the RETAIN demonstration, discussing the need for early SAW/RTW interventions and past interventions with some evidence of success. We then present the RETAIN program model and provide an overview of the five RETAIN programs and the national evaluation. The concluding section describes the report objectives and organization of the chapters that follow.

A. Background

Each year, millions of workers in the United States leave the labor force, at least temporarily, because of a medical condition or illness (Ben-Shalom et al. 2021; Hollenbeck 2015). Many of these workers fall through critical cracks in the social support system and exit the workforce permanently. Exits from the workforce can lead to subsequent adverse effects on standard of living (Schimmel and Stapleton 2012) and well-being (Ben-Shalom et al. 2018; Michaud et al. 2016). Without steady income and other benefits that often come with employment, such as health insurance, these workers and their families often turn to

public programs such as Social Security Disability Insurance (SSDI) and Supplemental Security Income (SSI), which also provide access to public health insurance through Medicare and Medicaid. People who enter the SSDI and SSI programs rarely leave them (Ben-Shalom and Stapleton 2015; Liu and Stapleton 2011; Maestas et al. 2013; French and Song 2014).

Affected workers, the federal government, and state governments all stand to gain from the implementation of strategies that help people stay at work or return to work following an injury or illness (Ben-Shalom and Burak 2016). The potential financial and nonfinancial benefits to workers who can keep their jobs instead of relying on federal disability benefits are considerable, including increased income and improved health. Both the federal and state governments stand to gain from increased tax revenues and reduced outlays on public assistance programs. Employers might benefit from potential improvements to staff morale, productivity, turnover, and legal liability, though these effects could differ depending on factors such as firm size, industry, and turnover costs (Bardos et al. 2015).

RETAIN represents a substantial investment by the federal government that recognizes the potential benefits of helping workers with injury or illness return to work *before* they have turned to rely on programs such as SSDI, SSI, Medicare, and Medicaid. Past and current federal initiatives have largely focused on helping people with disabilities enter the labor force in the first place and helping them return to work *after* they enter SSDI or SSI. For example, the Rehabilitation Services Administration provides grants to state vocational rehabilitation (VR) agencies to help people with disabilities prepare for and engage in competitive integrated employment and achieve economic self-sufficiency. SSA's Ticket to Work program supports career development for SSDI beneficiaries and SSI recipients who want to work. The types of supports that the state VR and Ticket to Work programs provide could help workers in need of immediate assistance retain a job or secure a new one, but they are rarely available to such workers due to program eligibility restrictions and service prioritization (Ben-Shalom 2016).

One SAW/RTW intervention model has shown promise for helping workers with injury or illness remain in the workforce: Washington State's Centers for Occupational Health and Education (COHE) program. The COHE program provides a tightly defined set of immediate-to-early evidence-based services for workers' compensation claimants. The key components of the COHE model include care coordination, occupational medicine best practices, regular provider training and performance feedback, provider incentives, and community outreach (Wickizer et al. 2004). An evaluation of the COHE program, using non-experimental methods, found that it was associated with a 21 percent reduction in the likelihood of being out of work and on disability one year after injury, with particularly large reductions for those with back injuries. The COHE program was also associated with a 7 percent reduction in medical costs and a 24 percent reduction in workers' compensation indemnity (that is, cash benefit) costs (Wickizer et al. 2011). Further, there is evidence of long-term effects on COHE participants. Follow-up results over eight years suggest that the COHE program was associated with a 30 percent reduction in the likelihood of entry into permanent work disability status, including into the SSDI system (Franklin et al. 2015; Wickizer et al. 2018).

The RETAIN demonstration seeks to build on the evidence of the COHE model's effectiveness. The demonstration encourages state entities to develop their own intervention models, drawing on key elements of the COHE model and considering other populations in addition to workers' compensation

claimants. It also seeks to expand and strengthen the evidence base on SAW/RTW strategies by funding independent and rigorous experimental evaluations of the state programs.

B. The RETAIN demonstration

The RETAIN demonstration included two phases. In Phase 1, which started in 2018, DOL awarded grants to eight state agencies to develop and pilot test programs to help those who experience a potentially disabling condition stay at work or return to work. In Phase 2, which started in 2021, DOL competitively awarded approximately $103 million in cooperative agreements to five state agencies to continue and expand their RETAIN programs.[1]

Below we provide an overview of the RETAIN program model, describe the programs that the five states implemented during Phase 2, and describe the goals and components of the evaluation that Mathematica is conducting.

1. RETAIN model and theory of change

Each state's RETAIN program centered on early intervention, using coordination of healthcare and employment-related services and supports to help injured or ill workers remain in the workforce. The RETAIN states differed in how they implemented these services and supports to account for differences in their intended populations and the services available to support program outcomes (Keith et al. 2024). Nonetheless, certain services and supports proved central to all state RETAIN programs.

The RETAIN program model builds on key features of the Washington State COHE model: care coordination, occupational medicine best practices, regular provider training and performance feedback, provider incentives, and community outreach (Wickizer et al. 2004). In addition to the care coordination and provider training components, RETAIN emphasized access to workforce services and employment-related services and supports. These services included providing support for workplace-based interventions and assistance in retraining and rehabilitation if treatment enrollees could no longer perform their job.

The RETAIN programs followed a core program model (Exhibit I.1). Medical provider and RTW coordination services are central components of the model that DOL and SSA expected all five programs to provide to all treatment enrollees. Other components of the model could vary by program or treatment enrollees' needs. DOL and SSA expected successful RETAIN programs to provide services through coordinated partnerships between state and local workforce development entities, healthcare providers, and other partners. RETAIN programs also pursued informal partnerships with employers and other organizations to prompt referrals of workers who could benefit from RETAIN.

[1] DOL announced the awards to the five state agencies in April 2021. The awards were in the form of cooperative agreements that facilitated 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; state agencies' preparation and submission of applications; and DOL's review of the applications by a panel it convened.

Exhibit I.1. RETAIN program model

Service category	Program component	Definition
Medical provider services		
	Training medical providers	Programs deliver training to medical providers that covers occupational medicine best practices and alternatives to opioids for pain management.
	Offering financial compensation or other incentives to medical providers	Programs offer incentives for medical providers to use occupational medicine best practices and alternatives to opioids for pain management.
RTW coordination services		
	Coordinating RTW services	Programs coordinate the delivery of medical and employment services to participants, including developing and implementing an RTW plan. An RTW coordinator usually leads the coordination of RTW services.
	Communicating among parties involved in RTW plan	Program staff communicate with other parties such as the participants' employer about their plan or ability to return to work. This communication should occur early in delivering RETAIN services to support the participant in returning to work as soon as possible.
	Monitoring treatment enrollees' progress	Programs track and monitor the participants' medical and employment progress.
Other RTW services		
	Supporting workplace-based interventions	Programs offer services to facilitate the participants' return to work. This might include modifying their duties and adjusting their schedules, tasks, and physical worksites.
	Retraining or rehabilitating enrollees	Programs offer or connect participants to retraining or rehabilitation services when participants can no longer perform their primary jobs or suitable alternate work.

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

Although the COHE model focused on people with work-related injuries or illnesses, RETAIN expanded the intended population to include those with non-work-related injuries if they were employed or in the labor force when the injury or illness first occurred, or when an existing condition had worsened and began to challenge their ability to work. The RETAIN cooperative agreements specified minimum eligibility criteria that the intended populations in each state had to meet (Box 1).[2]

Box 1. Minimum eligibility criteria under the RETAIN cooperative agreement

1. Individual had either (a) an existing disability or chronic condition or (b) a new injury or illness or worsening of an existing condition while employed and might otherwise be at risk of developing work disabilities. The health condition could be work or non-work related.
2. Individual was employed or in the labor force at the onset of the injury, illness, or condition for which they enrolled in RETAIN.
3. Individual did not have an application for SSDI or SSI benefits pending and was not already receiving such benefits at the onset of the injury or illness. ◢

[2] Despite these eligibility criteria, a small number of RETAIN enrollees reported they had applied for or received SSDI or SSI benefits in the three years prior to enrollment; some of them also reported receiving SSDI or SSI income at the time of enrollment.

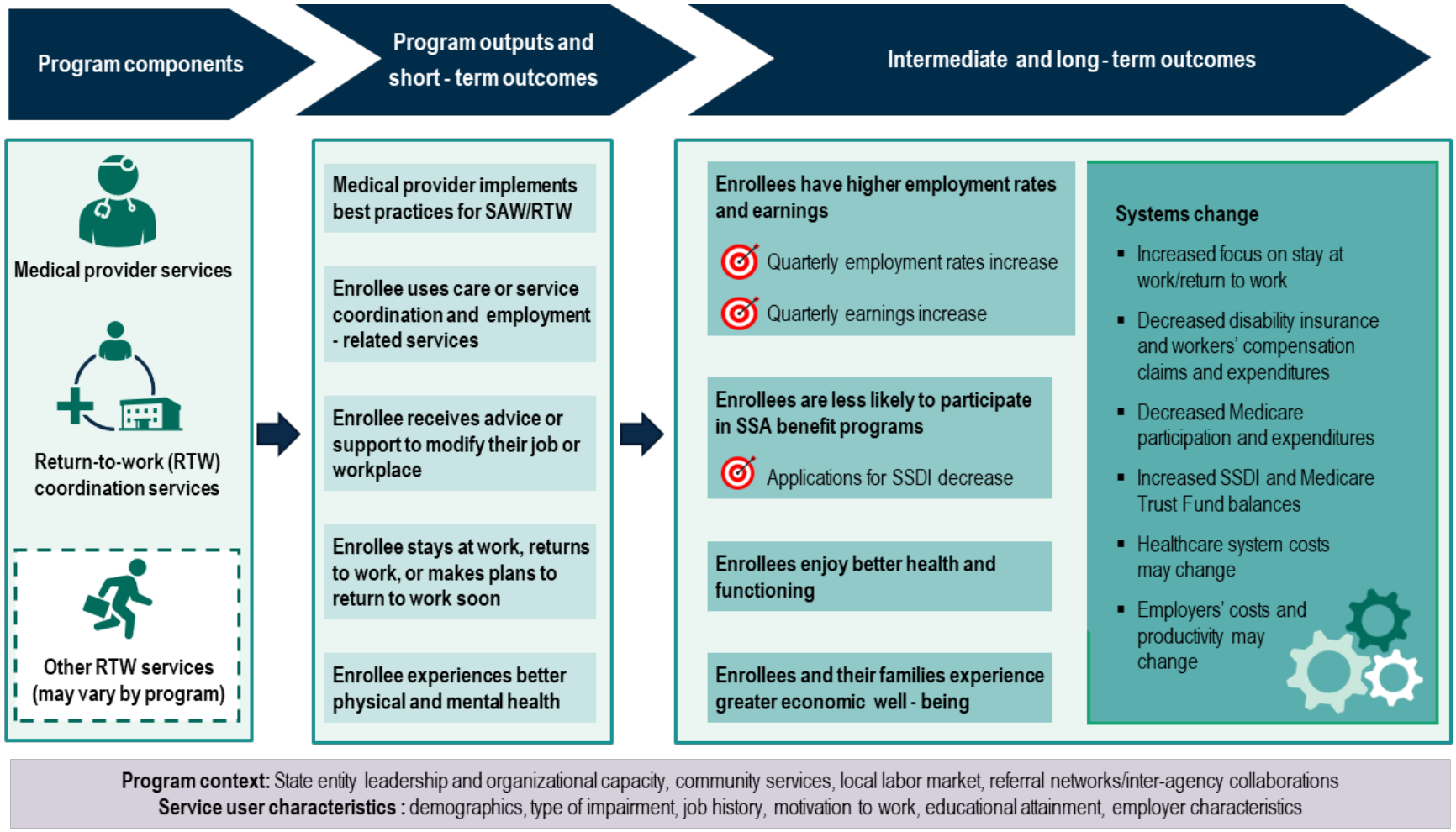
RETAIN treatment enrollees were eligible to use RETAIN services for up to six months. States had to enroll 80 percent of enrollees within 12 weeks of work-disability onset (or exacerbation) and ideally began providing services to treatment enrollees immediately upon enrollment. If a treatment enrollee required medical care and employment services after being enrolled in RETAIN for six months, or if the enrollee needed services beyond the scope of the RETAIN program, states should have referred the enrollee to other available services, such as VR, and discharged them from RETAIN.

The ultimate policy goals of RETAIN were to reduce long-term disability—including the need for SSDI or SSI benefits—and increase employment retention and earnings among individuals who experienced an illness or injury. Exhibit I.2 illustrates the RETAIN theory of change, summarizing the program components, expected outputs and enrollee short-term outcomes, and the potential enrollee and system outcomes in the intermediate and long term. We summarize the theory as follows:

- In the **short term**, the RETAIN programs' medical provider services should have increased medical providers' adherence to best practices.[3] The programs' RTW coordination and other SAW/RTW services should have increased enrollees' use of care coordination and employment-related services, and their receipt of advice about workplace accommodations. These program components were expected to have a positive effect in the short term on enrollee's mental and physical health, and on the probability that the enrollee stayed at work, returned to work early, or made plans to return to work soon.
- 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 program was expected to increase quarterly employment rates and quarterly earnings and 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 improved economic well-being.
- A sustained pattern of impacts on enrollee outcomes in the long term could in turn lead to **systems-level changes**. Potential changes could have included reduced expenditures for disability insurance, workers' compensation claims, and Medicare; and increased SSDI and Medicare Trust Fund balances. As medical providers learned about any positive impacts on enrollees' health, this could lead to an increased focus on SAW/RTW in healthcare settings. Changes in healthcare costs as well as employer costs and productivity could occur, though the direction of these changes was unclear.

[3] Croake et al. (2024) described the experiences of medical providers who participated in Ohio RETAIN, including their characteristics, adherence to occupational health best practices, experiences working with RTW coordinators, and barriers to participating in the program, based on a survey that 138 medical providers completed.

Exhibit I.2. RETAIN theory of change



SSDI = Social Security Disability Insurance; SAW/RTW = stay-at-work/return-to-work.

2. RETAIN programs

In 2021, DOL selected five state agencies to receive funding to continue and expand their RETAIN programs (Exhibit I.3). In each state, the lead agency worked with a consortium of partners, such as state or local workforce development entities, healthcare systems, and medical provider networks, to implement its RETAIN program.

Exhibit I.3. RETAIN awardees

Participating state	Lead agency	RETAIN program 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[a]

[a] The final round of incremental funding was not distributed to Vermont, so it received less than the full award amount.

Each of the RETAIN programs included the core components of the RETAIN program model described in Exhibit I.1. However, the federal sponsors of the RETAIN demonstration did not prescribe details for how to implement the program components; rather, each state proposed its own approach to each component and developed its own logic model for the program. Each awardee was also free to specify the organizational structure, service area, target population and recruitment approach, and experimental study design for its program. In Exhibit I.4, we briefly outline each program's key partners, service area, eligible population and referral sources, and experimental study design. Additional information about each program, including its specific eligibility criteria and service approach, is available in the process analysis report that documented program implementation through June 2023 (Keith et al. 2024).

Exhibit I.4. RETAIN programs and their key features

Program	Key partners[a]	Service area, eligible population, and referral sources
RETAINWOR*KS*	**Lead agency:** Kansas Department of Commerce **Healthcare partners:** Ascension Via Christi, Stormont Vail Healthcare, University of Kansas Medical Center, Kansas Clinical Improvement Collaborative **Workforce partners:** All five local workforce development boards in Kansas, Kansas Business Group on Health, Kansas Society for Human Resource Management	**Service area:** Entire state (105 counties in five local workforce development areas) **Eligible population:** Adults who are employed or seeking employment and have a work- or non-work-related injury or illness **Referral sources:** EMR reports, medical providers, local workforce development area staff, employers, self-referrals

Program	Key partners[a]	Service area, eligible population, and referral sources
RETAIN Kentucky	**Lead agency:** Kentucky Department of Workforce Investment, Office of Vocational Rehabilitation **Healthcare partners:** University of Kentucky HealthCare, University of Louisville Health **Workforce partners:** University of Kentucky Human Development Institute, Council of State Governments, Kentucky Chamber of Commerce	**Service area:** Entire state (120 counties) **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** Office of Vocational Rehabilitation, targeted online advertising, healthcare partners, workforce partners, employers, self-referrals
Minnesota RETAIN	**Lead agency:** Minnesota Department of Employment and Economic Development **Healthcare partners:** Mayo Clinic, HealthPartners TRIA **Workforce partners:** Workforce Development, Inc.	**Service area:** Entire state (87 counties) **Eligible population:** Adults who are employed or seeking employment and have a work- or non-work-related injury or illness **Referral sources:** EMR reports, mass email campaigns to Mayo Clinic patients, targeted online advertising, medical providers, employers, self-referrals
Ohio RETAIN	**Lead agency:** Ohio Department of Job and Family Services **Healthcare partners:** Bon Secours Mercy Health **Workforce partners:** Local workforce development boards, Opportunities for Ohioans with Disabilities, Ohio Bureau of Workers' Compensation	**Service area:** Three regions in Ohio, encompassing the cities of Youngstown, Toledo, and Cincinnati **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** EMR reports, medical providers, employers, self-referrals
Vermont RETAIN	**Lead agency:** Vermont Department of Labor **Healthcare partners:** Dartmouth Health, OneCare Vermont **Workforce partners:** HireAbility Vermont, Invest EAP	**Service area:** Entire state (14 counties) **Eligible population:** Adults who are employed or seeking employment and have a non-work-related injury or illness **Referral sources:** Self-referrals through web-based pre-screening tool available at primary care practices and other locations in the community

[a] This list is not comprehensive; see Keith et al. (2024) for complete information on program partners.

EMR = electronic medical record.

3. RETAIN evaluation

The federal sponsors of the RETAIN demonstration and other interested parties, such as state workforce agencies, disability advocates, and researchers, want to know whether and how the RETAIN programs achieved their goals, and whether the benefits of each program outweighed its cost. Mathematica designed the RETAIN evaluation with several components to document how the five states implemented their RETAIN programs and whether they were able to achieve their goals of improving enrollees' SAW/RTW outcomes (Berk et al. 2021). These components include process, participation, impact and benefit-cost analyses.

The key research questions for the evaluation are as follows:

- How were RETAIN programs designed, implemented, and operated, and what factors influenced the implementation experience?
- Who enrolled in RETAIN programs? What kinds of services did they use? What were the characteristics of medical providers delivering RETAIN services?
- Did the RETAIN programs increase employment and earnings? Did they reduce applications for SSDI and SSI benefits? Were they more effective at achieving these outcomes for some individuals than others?
- What were the benefits and costs of each RETAIN program? Were the benefits of each RETAIN program larger than its costs?

The evaluation draws on a mix of quantitative and qualitative methods to address these questions. It uses multiple data sources, including RETAIN program documents, RETAIN enrollment and service use data, interviews with treatment enrollees and program staff, two enrollee follow-up surveys, a survey of medical providers in one state, and state and federal administrative data.

The evaluation's impact analyses rely on an experimental design in which Mathematica randomly assigned enrollees or clusters of enrollees to either a treatment or a control group. Enrollees in the treatment group had access to RETAIN services, whereas the control group had access to the usual services available in the community. [4] In four states (Kansas, Kentucky, Minnesota, Ohio), random assignment occurred at the individual level. In Vermont, Mathematica randomized primary care clinics into treatment and control groups.

Earlier in the evaluation, an **early assessment report** (Keith et al. 2023) described the initial implementation of the RETAIN programs through June 2022. A **process analysis report** (Keith et al. 2024) assessed each RETAIN program's implementation and service delivery from the beginning of program operations through June 2023. The assessment occurred midway through the 48 months of program operations funded under the Phase 2 grants and 20 months into the 30-month enrollment period. The findings focused on (1) program partnerships and the environment surrounding RETAIN implementation and service delivery, (2) recruitment and enrollment of eligible workers, and (3) RETAIN implementation and service delivery.

The **early impact report** (this document) examines the impacts of RETAIN programs on short-term outcomes, including enrollees' use of SAW/RTW services and their work- and health-related outcomes. It is based on data from an early follow-up survey of enrollees conducted approximately two months after enrollment. This report is the first evaluation report to include enrollees from the full Phase 2 enrollment period. The report also examines the extent to which the RETAIN programs' impacts on service use differed by enrollees' characteristics. The outcome measures we examine in this report differ from the ones we will examine in the final impact report due to the focus and timing of each analysis.

[4] Kentucky's RETAIN program offered an expedited version of RTW coordination services to control enrollees for up to three hours within a two-week period; in all other states, programs referred control enrollees to usual services available in the community.

The **final evaluation report** will assess each RETAIN program's impact on intermediate-term outcomes, including (1) work- and health-related outcomes as reported in the second follow-up survey of enrollees, (2) employment and earnings outcomes based on state wage records and Internal Revenue Service earnings data, and (3) SSDI and SSI applications and benefits based on SSA program data. The report will also include a program participation analysis and a benefit-cost analysis estimating the benefits and costs of each RETAIN program for treatment enrollees, the federal government, the state government, and their combined perspectives.

In addition to the main reports above, a series of RETAIN **special topic reports** has examined the following:

- State variation in SSDI entry in 2017 before RETAIN (Anderson et al. 2020)
- RETAIN programs' approaches to recruiting potential enrollees during the first 11 months of the demonstration (Croake et al. 2023)
- Differences between the socioeconomic characteristics of RETAIN enrollees, all workers in RETAIN states, and applicants for SSDI and SSI in those states (Farid et al. 2023)
- The SAW/RTW experiences of RETAIN enrollees with behavioral health conditions (Farid et al. 2024)
- The experiences of medical providers in Ohio RETAIN (Croake et al. 2024)

C. Report objectives and organization

This report presents findings from the early impact analysis of each RETAIN program. In this analysis, we investigated the extent to which programs were able to connect enrollees with the intended SAW/RTW services soon after enrollment and whether there were early signs of changes in other enrollee outcomes. The report presents each program's impacts on short-term outcomes measured during the first few months after enrollment, including enrollees' use of SAW/RTW services and their work- and health-related outcomes as reported in the early follow-up survey of enrollees. It also presents findings on the extent to which the RETAIN programs' impacts on service use differed by enrollees' characteristics.

When interpreting the findings on the programs' early impacts, it is important to consider the timing of the short-term outcomes relative to the program length and theory of change. All five RETAIN programs offered services to treatment enrollees for up to six months. The median time between enrollment and completion of the early follow-up survey was about 11 weeks. Thus, respondents in the treatment group might still have been receiving RETAIN services when they responded to the survey, depending on how soon they responded and how long they used services. Treatment enrollees could continue using RETAIN services after responding to the survey for up to six months after enrollment, such that impacts might emerge later. In addition, for some outcomes such as earnings and pain interfering with work, it might take more than a few months for RETAIN services to translate into substantial changes in enrollees' outcomes. Hence, for some of the outcomes we examine in this report, it is too early to draw conclusions about the impacts of RETAIN. Still, we include an assessment of these outcomes because it allows us to capture early changes in them that will help us interpret the findings from future analyses of intermediate outcomes (at 12 months or longer after enrollment) we will conduct for the final evaluation report. In addition, to help contextualize the early impacts of the RETAIN programs, we descriptively summarize the

perceptions and experiences of treatment enrollees with regard to their medical conditions, reasons for not working, accommodations that employers offered, and perceived usefulness of services used.

In the next chapter, we describe the approach we used to estimate early impacts, including the study design, data sources, analysis samples, outcome measures, and analytical methods. Five program-specific chapters follow. In each, we present an overview of the RETAIN program and its implementation, the baseline characteristics of enrollees, and estimates and discussion of the program's early impacts on enrollee outcomes. In the final chapter of the report, we summarize and compare the early impact findings across the five programs and discuss key themes and implications.

We present additional information in the appendices. We provide additional details on the data and analytic methods in Appendix A, detailed results of the impact analyses in Appendix B, and results from sensitivity tests in Appendix C.

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II. Impact Study Design, Data Sources, and Methods

The goal of the early impact study is to generate rigorous evidence on the early impacts of the RETAIN programs, focusing on early differences between the outcomes of enrollees in the treatment and control groups. Mathematica's evaluation team specified the key features of the impact analyses in the evaluation design report (Berk et al. 2021) and registered them on clinicaltrials.gov before beginning data analyses. In the sections below, we describe the design of the impact study of each program, as well as topics, such as data sources and estimation methods, that are common across the programs.

A. Study design

As we outlined in the evaluation design report (Berk et al. 2021), the RETAIN evaluation consistently treated the five RETAIN programs as independent programs. The rationale for evaluating each program separately is that, even though all programs broadly followed a general program model (Exhibit I.1), they varied substantially in how they conceptualized the model components. Indeed, the findings of the process study showed variation in model implementation and composition of enrollees across the programs (Keith et al. 2024). Assessing the impacts of the programs separately enables the evaluation to consider qualitatively how differences in implementation and enrollee populations might influence the outcomes of the general program model and help identify lessons for future programs.

Each RETAIN program implemented an experimental study design (Exhibit II.1). Four states implemented an individual random assignment design (Kansas, Kentucky, Minnesota, and Ohio), and one state implemented a clustered random assignment design (Vermont). For each program, the evaluation team placed units of random assignment (individuals or primary care practices) in either a treatment group eligible for the program's full-service menu or a control group that could use limited or no RETAIN services (but could use the usual services available in their communities). For each program, random assignment should have resulted in two groups of enrollees with similar characteristics at the time of enrollment. If so, the evaluation can attribute any differences in the outcomes of these groups to the effects of the programs.

In the four programs with individual random assignment (RETAINWOR*KS*, RETAIN Kentucky, Minnesota RETAIN, and Ohio RETAIN), the evaluation team randomly assigned enrollees to either the treatment or control group immediately after they enrolled in the RETAIN program. We stratified random assignment based on individuals' characteristics at the time of enrollment. The evaluation team selected the stratification factors based on data availability, characteristics that could be correlated with the impact of RETAIN programs on enrollees' SAW/RTW outcomes, and factors relevant to each program's implementation. We constructed cells based on the stratification factors and assigned individuals to the treatment or control group within each cell to guarantee that each cell would have individuals both eligible and ineligible for RETAIN services. Most of the time, the probability of being assigned to the treatment group was 50 percent within a stratum.[5]

[5] There were exceptions in two states. Due to slow initial enrollment in Kentucky and Kansas, starting in January 2023, the evaluation team changed the probability of assignment to the treatment group to 80 percent. After an uptick in

Exhibit II.1. Study designs for the five RETAIN programs

Program	Unit of random assignment	Stratification factors	Probability of assignment to treatment
RETAINWOR*KS*	Individual	Age, sex, employment status, time since last worked, and workforce region	Within a stratum, the probability of assignment to the treatment group was 50 percent for most of the enrollment period; it was temporarily increased to more than 50 percent for five months.
RETAIN Kentucky	Individual	Age, sex, employment status, and time since last worked	Within a stratum, the probability of assignment to the treatment group was 50 percent for most of the enrollment period; it was temporarily increased to more than 50 percent for three months.
Minnesota RETAIN	Individual	Age, sex, employment status, and time since last worked	Within a stratum, the probability of assignment to the treatment group was 50 percent.
Ohio RETAIN	Individual	Age, sex, employment status, and time since last worked	Within a stratum, the probability of assignment to the treatment group was 50 percent.
Vermont RETAIN	Primary care practice	Size of practice	Within a stratum, the probability of assignment to the treatment group was 50 percent.

Note: The evaluation's process analysis report (Keith et al. 2024) describes each RETAIN program's process for recruiting participants and formally enrolling them in the evaluation.

In Vermont RETAIN, which used a clustered random assignment design, the evaluation team assigned primary care practices (rather than individual enrollees) to either the treatment or control group. We stratified random assignment based on the practice size (number of patients typically served); among primary care practices of a similar size, there was an equal probability of being assigned to the treatment or control group. Thus, we designated any eligible enrollee associated with a practice who had been assigned to the treatment group as a treatment enrollee who could use services from Vermont RETAIN. The evaluation team designated any eligible enrollee associated with a practice who had been assigned to the control group as a control enrollee who could not use services from Vermont RETAIN. The number of eligible people who enrolled in RETAIN through each practice varied, and a larger share of enrollees were designated to the treatment group than the control group.[6]

Because random assignment should have resulted in two groups of enrollees with similar characteristics, we estimated the impacts of each program by comparing the outcomes of individuals in the treatment group to those of individuals in the control group. We included all treatment group members, regardless of whether they used any program services. Thus, for each program, the impact estimates provide

enrollment in Kentucky, we restored the probability of assignment to the treatment group in that state to 50 percent in April 2023. In Kansas, we changed the probability of assignment to the treatment group to 60 percent in April and May 2023, and restored it to 50 percent in June 2023.

[6] The program took broadly similar approaches to outreach, recruitment, and enrollment for treatment and control group practices. To support consistency, we provided technical assistance to Vermont to reinforce the need for a standard approach across clinics in the enrollment of treatment and control group members.

evidence on whether offering the program's services resulted in early improvements to enrollees' outcomes relative to what we expect they would have experienced in the absence of RETAIN.

B. Data sources

The early impact analysis relied on survey and administrative data. We collected data on early outcomes of RETAIN enrollees via a survey conducted about two months after individuals enrolled in the evaluation. We also used data that RETAIN programs collected at enrollment, along with administrative wage records, which captured baseline characteristics of enrollees at the time they enrolled. We briefly describe these sources below and provide additional detail in Appendix A.

Each RETAIN program also tracked information on the service use of enrollees in the treatment group. We did not analyze those data for this report; however, we do discuss findings from the process analysis report (Keith et al. 2024), which did.

1. Early follow-up survey of enrollees

Between March 2022 and October 2024, we fielded an early follow-up survey to gather data from enrollees within a few months of their enrollment in RETAIN. Across the five programs, the median time between enrollment in RETAIN and survey completion was about 11 weeks. Appendix A provides more details on the timing of survey fielding and completion.

The survey was designed to capture information on enrollees' outcomes and post-enrollment experiences not readily available from administrative records or other sources. It included topics on services and training used, employment and earnings, and health. It also collected detailed information about enrollees' current employment, including weekly hours worked, employer benefits, employer accommodations, and occasional work activities or side jobs. For respondents not working at the time of the survey, we asked about reasons for not working, job searching, and return-to-work expectations.

All RETAIN enrollees in the treatment and control groups of all programs were eligible to be interviewed for the survey. We attempted to complete the survey with all RETAIN enrollees, with the number of enrollees varying by state. The survey response rates were high (Exhibit II.2). For each program, the response rates exceeded 80 percent, and the differences in response rates between treatment and control group members were small (less than 3.9 percentage points). Respondents completed the survey primarily via the web but had the option to complete it in the mode they preferred—web, paper, or over the telephone with a professional interviewer. The early follow-up survey took roughly 18 minutes to complete. As of November 2024, 62 percent of respondents had completed the survey by web, 37 percent by phone, and 2 percent by paper.

Exhibit II.2. Early follow-up survey response rates, by program

Sample	RETAIN-WORK*S*	RETAIN Kentucky	Minnesota RETAIN	Ohio RETAIN	Vermont RETAIN	All programs
Treatment group (percent)	87.4	80.4	85.0	84.8	84.4	83.9
Control group (percent)	85.9	82.8	81.1	83.3	85.1	82.9
Eligible sample	962	3,147	3,190	4,521	798	12,618

Source: RETAIN enrollment data and early follow-up survey.

Note: The eligible sample comprises all enrollees who were randomly assigned except enrollees who were enrolled in error (n = 6), experienced contamination (n = 5), chose to withdraw from the evaluation (n = 1), chose to withdraw from the survey but remain in the evaluation (n = 2), or died (n = 18). It excludes wildcard enrollees who did not undergo random assignment (n = 3).

2. RETAIN enrollment data

Every RETAIN program collected information about the characteristics of individuals at the time of their enrollment in the study through a Participant Enrollment Information Form developed by DOL, comprising two parts. Part 1 of the enrollment form collected contact and demographic information, along with information on health, qualifying injury or illness, recent employment, and past receipt of SSDI benefits at baseline. The data also contained personal identifiers that we used to link these records to the survey data. States provided the evaluation team with Part 1 data through different processes. Part 2 of the enrollment form collected more details about the qualifying injury or illness and recent employment.

3. State unemployment insurance wage records

We used state unemployment insurance (UI) wage records as a source for baseline information about enrollees' earnings before they enrolled in RETAIN. Four of five RETAIN programs provided us the individual-level quarterly UI wage records needed to conduct the early impact analyses. Only Kansas did not provide the evaluation team with wage data for the quarter before enrollment.

For the early impact report, we used data on earnings in the quarter before the enrollment quarter[7]. This baseline measure served as a proxy for enrollees' employment quality before their injury or illness. We used this measure as a baseline covariate because earnings and employment quality before injury might be correlated with SAW/RTW outcomes after enrollment in RETAIN.

C. Analysis samples

For the RETAIN evaluation, we define the research sample for each program as the enrollees who were assigned to either the treatment or control group through random assignment of either individuals or primary care practices, depending on the program (Exhibit II.3).[8] However, some research sample members did not complete the early follow-up survey that provided crucial outcomes data for the early impact analysis. Therefore, for each program, the analysis sample for the early impact study comprises the

[7] We omitted earnings in the quarter before the enrollment quarter from analysis models for RETAINWOR*KS* as the data were not available to the evaluation team.

[8] Each program's research sample comprises all enrollees randomly assigned to either the treatment or control group except a small number of exceptions (12 enrollees) who were enrolled in error, experienced contamination, or chose to withdraw from the evaluation. It excludes three wildcard enrollees who did not undergo random assignment.

subset of the research sample that responded to the early follow-up survey—that is, early follow-up survey respondents.

Exhibit II.3. RETAIN sample sizes, by program

	Kansas	Kentucky	Minnesota	Ohio	Vermont
Research sample (randomly assigned enrollees)					
Treatment group	509	1,654	1,598	2,264	450
Control group	454	1,499	1,601	2,261	348
Total	963	3,153	3,199	4,525	798
Analysis sample (early follow-up survey respondents)					
Treatment group	445	1,327	1,356	1,918	380
Control group	389	1,240	1,293	1,882	296
Total	834	2,567	2,649	3,800	676

Source: RETAIN enrollment data and early follow-up survey.

Note: The research sample comprises all enrollees who were randomly assigned except enrollees who were enrolled in error (n = 6), experienced contamination (n = 5), or chose to withdraw from the evaluation (n = 1). It excludes wildcard enrollees who did not undergo random assignment (n = 3). The analysis sample comprises research sample members who responded to the early follow-up survey. Enrollees who were not in the research sample were not eligible for the survey.

Each program differed in the eligibility criteria it used and its methods for recruiting enrollees and formally enrolling them in the evaluation. We summarize these processes in Chapters III through VII of this report and provide more details about them in the RETAIN process analysis report (Keith et al. 2024). For states that used individual random assignment, program staff entered data from the enrollment forms into the random assignment system, which then randomly assigned enrollees to a study group according to customized algorithms that accounted for stratification by enrollee characteristics. The state with clustered random assignment (Vermont) sent us lists of primary care practices, which we randomly assigned to the treatment or control group after stratifying by practice size.

D. Outcome measures

In this report, we focus on those outcomes the RETAIN programs could have affected in the months immediately following enrollment. We consider the following domains: use of SAW/RTW services and training, labor force attachment and employment, and health. The outcome measures we examine in this report differ from the ones we will examine in the final evaluation report due to the timing of each analysis. We will evaluate the primary outcomes (which we pre-specified in the evaluation design report; Berk et al. 2021) in the final evaluation report because we defined them as occurring over a longer follow-up period.[9]

For this report, we estimated impacts on 23 short-term outcomes. We focused on a narrow range of enrollees' outcomes related to service use and measures for which we might see early signs that the programs were supporting enrollees' ability to stay at or return to work. We also provide descriptive

[9] We differentiated 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. Based on RETAIN's theory of change, we selected three primary outcomes: 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.

statistics for four additional variables with the goal of providing context on the impact findings. Below we include a description of the outcomes organized by domain. (We also include detailed definitions in Appendix A.)

1. Use of services and training since enrollment in RETAIN

We examined whether RETAIN affected the share of enrollees who used services and trainings that could improve their employment outcomes during the two months before the follow-up survey. The measures include the share of enrollees who worked with a care or service coordinator, talked with healthcare providers about how their injury or illness affected their ability to work, used any employment-related support services, participated in any job-related training, and were enrolled in school or taking any classes at the time of the survey.

2. Labor force attachment and employment at the time of the survey

We examined whether RETAIN affected the share of enrollees attached to the labor force and their employment outcomes at the time of the early follow-up survey. The labor-force attachment measures included the shares of enrollees who were connected to an employer (either working or on medical leave), currently working, and not working but planning to return to work in the next 90 days. We also estimated whether the RETAIN programs affected average weekly hours worked, average weekly pay, and the shares of enrollees who were doing the following: working for an employer that offered health insurance, working for an employer that offered paid leave, working and had received advice about modifying their job or workplace, and working for an employer that offered the chance to return to work with needed accommodations. We defined each of the above-mentioned measures for all enrollees; that is, they were not defined conditional on being employed.

3. Health at the time of the survey

We examined whether RETAIN affected the share of enrollees who self-reported their health as very good or excellent, and the share covered by any type of health insurance. We also evaluated whether the programs affected the average reported number of poor physical health days in the month before the survey, the average number of poor mental health days during the month before the survey, and the average pain on a 0–10 scale during the seven days before the survey. In addition, we measured whether RETAIN affected the share of enrollees who reported that pain interfered with their ability to work most or all the time, and the share who had been prescribed opioid pain relievers.

4. Perceptions and experiences

We provide descriptive statistics for the treatment group on their short-term perceptions and experiences after enrollment in RETAIN. These statistics offer additional context to understand the early impacts of the RETAIN program. Specifically, we present the means and standard deviations of the reasons for not being connected to an employer among enrollees not working or on leave at the time of the survey; the types of accommodations employers offered; the perceived usefulness of the services that care or service coordinator provided; and the perceived helpfulness of services from healthcare providers to help them stay at or return to work.

E. Analytic considerations

1. Survey nonresponse

The high overall response rate and limited differences in response between the treatment and control groups in each program (shown in Exhibit II.2) mitigate concerns about potential nonresponse bias. Nevertheless, even with high response rates, it is possible that those who responded to the survey differed from those who did not. If respondents differ systematically from nonrespondents and we do not account for the differences, the estimated impacts might be biased and would not represent the experiences of all participants who enrolled in RETAIN.

We performed tests to compare the baseline characteristics of survey respondents with nonrespondents for each program (Appendix Exhibits A.4–A.8). We found some differences in the baseline characteristics of these two groups. For example, across all states, respondents were on average older and more likely to be female.

To account for any differences in baseline characteristics between respondents and nonrespondents, we constructed nonresponse weights. We then incorporated these weights into our analyses to make the respondent sample more representative of all enrollees and reduce the potential for nonresponse bias. We confirmed that the use of weighting worked as intended; the application of weights eliminated or substantially reduced the differences between survey respondents and nonrespondents (Appendix Exhibits A.4–A.8).

2. Missing data

The approach for addressing missing data differed depending on whether the missing data reflected information before enrollment in RETAIN (that is, baseline characteristics) or after (that is, outcomes).

Few enrollees had missing data on baseline characteristics; if they did, we replaced the missing data with imputed values to avoid excluding them from the analyses. For continuous and binary baseline measures with missing data, we replaced the missing values with the program-specific mean values of the measures calculated from the observations for which data were not missing. For categorical baseline measures, we added a category to indicate missing data.

We typically excluded enrollees with missing data on an outcome from the analysis of that outcome. For example, some outcome measures were missing for survey respondents due to item nonresponse. In the analysis of these outcomes, we excluded missing observations. However, for a handful of outcome measures, data were missing nonrandomly—that is, data were missing conditional on certain values of other outcome measures. For example, some enrollees reported that they were working at the time of the survey but did not respond to the question about their average weekly earnings. Because we asked this question only of people who were working at the time of the survey, evaluating the impact of RETAIN on weekly earnings by excluding missing observations would lead to biased estimates. We used multiple imputation to fill in values when the missing information depended on another variable and then evaluated the impact while dropping only truly missing observations. In the above example, this approach means that we imputed earnings if earnings were missing but the person was working, and we kept earnings as zero if the person was not working at the time of the survey.

F. Estimation approach

Our basic impact estimation approach was to compare the average outcomes of the treatment and control enrollees using a regression-based adjustment to account for random assignment design and baseline characteristics. Random assignment, when implemented correctly, should result in research groups that are, on average, similar in their characteristics at the time they enrolled in the evaluation. As a result, by design, a simple comparison of mean values of outcomes between the treatment and control groups should provide an unbiased estimate of program impacts. Nonetheless, we conducted regression adjustment to improve the statistical precision of the estimates and control for chance differences in baseline characteristics between treatment and control groups. Controlling for such differences was important for characteristics that could be correlated with outcomes.

Regression models. All regression models included three types of covariates that reflected enrollees' characteristics at the time of enrollment in RETAIN. The first type consisted of strata covariates, which reflected the stratified random assignment design.[10] The second type comprised enrollee characteristics for which we always controlled regardless of stratification, including enrollees' age, sex, race and ethnicity, past earnings, type of injury or illness, and time since last worked. Finally, a third type of covariate comprised enrollee characteristics for which we found a statistically significant difference between the treatment and control groups for a program. See Appendix Exhibit A.20 for a list of covariates for each program.

We used ordinary least squares regression models to estimate impacts, including linear probability models for binary outcomes.[11] We weighted all estimations using weights to account for survey nonresponse. For each impact estimate, we report whether it is statistically significantly different from zero. To test for statistical significance, we calculated a two-tailed *t*-statistic to test the null hypothesis that there is no difference between the regression-adjusted means for the treatment and control groups.[12] The associated *p*-value reflects the probability of obtaining the observed impact estimate when the null hypothesis of no effect is true. When discussing an impact estimate, we considered it to be statistically significantly different from zero if the *p*-value was smaller than 0.10 (Berk et al. 2021).

We produced heteroskedasticity-consistent standard errors using the method proposed by White (1980). In addition, for the program that used clustered random assignment (Vermont), we clustered standard errors at the practice level to account for the fact that outcomes for individuals in the same primary care practice might be correlated.

[10] For each program, we included the controls for strata in all regression models to avoid overly conservative standard errors (Bruhn and McKenzie 2009). The larger standard errors could increase the likelihood that we did not detect differences in baseline characteristics (that might be correlated with the outcomes) as being statistically significant. Similarly, the larger standard errors could increase the likelihood that we did not detect program impacts as statistically significant.

[11] When treatment status is binary, linear probability models yield estimates of impacts that are just as accurate as those estimated by logistic regression and are easier to interpret (Deke 2014).

[12] The evaluation design report (Berk et al. 2021) calculated minimum detectable effects using one-tailed *t*-tests for the primary outcomes. We opted to use two-tailed *t*-tests in the early impact analysis because we did not specify any primary outcomes for this analysis.

In the body of this report, we focus on findings from the main impact models. We discuss each program's impacts on all outcomes and present the impacts on selected outcomes using tables and figures. In Appendix B, we provide tables with details of the estimated impacts on all outcomes.

Sensitivity analyses. We conducted several checks to assess the sensitivity of our main impact findings to different modeling assumptions and approaches (Appendix C). We tested the sensitivity of the impact estimates to the use of survey weights, regression adjustment, and multiple imputation to fill in missing data. We found that for most of the outcomes, the impact estimates were robust with respect to the estimation approach.

Subgroup analyses. To understand whether engagement with RETAIN services varied across demographic groups, we estimated impacts on the use of SAW/RTW services and training since enrollment for key subgroups of enrollees. To minimize the risk of drawing spurious conclusions due to multiple comparisons, we analyzed only a selected set of subgroups defined by the baseline characteristics of enrollees: age at enrollment (younger than 50; 50 and older), primary diagnosis (musculoskeletal injuries; non-musculoskeletal injuries), and sex (female; male).

To estimate each set of subgroup impacts, we modified the main regression model to include an indicator for each subgroup, as well as interaction terms between the treatment status indicator and the indicator variable for each subgroup. We used two-sided *t*-tests to determine the statistical significance of the regression-adjusted impact estimate for each subgroup. We also conducted a joint Wald test to determine whether the differences in the impact estimates between the subgroups were statistically significant. Because we are interested in understanding the variation of program impacts, we discussed subgroup findings when we found statistically significant differences in a program's impacts across subgroups, regardless of the impacts for each individual subgroup.

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III. RETAINWOR*KS*

Key findings from the early impact analysis

- Enrollees in the treatment and control groups had similar characteristics, with three exceptions. Compared to the control group, treatment enrollees were less likely to be non-Hispanic White, more likely to have worked in production and construction jobs before enrollment, and more likely to have health insurance at enrollment.
- RETAINWOR*KS* increased the shares of enrollees who used SAW/RTW coordination services, employment-related services, and job-related training, as well as the share who had SAW/RTW conversations with their medical provider.
- RETAINWOR*KS* increased the share of enrollees who were connected to an employer or looking for work at the time of the early follow-up survey but had no impact on the share of enrollees who were working.
- RETAINWOR*KS* improved multiple measures of health at the time of the early follow-up survey and reduced the share of enrollees who received an opioid prescription. ◢

A. Program overview

In this section, we provide an overview of the Kansas RETAIN (RETAINWOR*KS*) program design and implementation as documented through Mathematica's independent evaluation. We draw on findings from Mathematica's process analysis (Keith et al. 2024), which covered program implementation and service delivery through June 2023, midway through the program's operation period under the Phase 2 grants. The program made changes to some implementation components over time, following a continuous quality improvement approach.

1. Program design

The Kansas Department of Commerce was the lead agency for RETAINWOR*KS*. The program service area was the entire state of Kansas, organized by the five local workforce development areas that cover the state's 105 counties. Each workforce development area had a healthcare partner that supported implementation. RETAINWOR*KS* enrolled adults who were employed or seeking employment and had a work- or non-work-related injury or illness, including (1) a musculoskeletal injury, (2) a mental health disorder, (3) a chronic disease, or (4) another newly diagnosed illness or injury affecting the individual's employment. RETAINWOR*KS* provided RTW coordination services to all treatment enrollees.

RETAINWOR*KS*'s program model included (1) training and compensation for medical providers to use occupational medicine best practices; (2) RTW coordination services that involved working with an enrollee to develop an individualized RTW plan; meeting regularly with the treatment enrollee; and communicating with the enrollee's medical provider, employer, and others as needed to coordinate the enrollee's staying at or returning to work; and (3) other services, including supporting workplace accommodations and referrals to retraining or rehabilitation services.

The evaluation of RETAINWOR*KS* used an individual random assignment design. The evaluation team randomly assigned enrollees to either the treatment or the control group; enrollees were provided a $50 incentive payment for enrollment. Enrollees in the treatment group could access RETAINWOR*KS* services, whereas those in the control group could not access program services but received a list of resources

available to the general public. In total, RETAINWOR*KS* enrolled 963 people in the RETAIN evaluation between January 2022 and May 2024.

2. Program implementation

RETAINWOR*KS* struggled with recruitment and enrollment, ultimately enrolling just 24 percent of its original target. RETAINWOR*KS* enrollments were primarily driven by referrals from medical providers employed by the healthcare partners. Referrals could also come from employers, local workforce development areas, or self-referrals, but RETAINWOR*KS* required all RETAIN enrollees to be seen and referred by a RETAINWOR*KS*-trained provider to complete the enrollment process. At the time of the process study, limited medical provider engagement was the primary reason for lower-than-expected patient referrals to RETAINWOR*KS*. To address this challenge, RETAINWOR*KS* tried numerous strategies, including in-person outreach to providers, outreach to specialists who might have more RETAIN-eligible patients, public relations campaigns to increase self-referrals, and reviewing electronic medical records (EMRs) and texting potentially eligible patients.

To be eligible to refer patients, providers needed to complete a four-hour, self-paced online training on RETAINWOR*KS* and its benefits, the COHE model, and the opioid crisis. Providers were eligible for financial incentives for successful referrals, completing activity assessments, making RETAIN-related phone calls, and completing RTW plans and 30-day risk assessments for treatment enrollees. However, program staff reported that most providers were not motivated by the financial incentives, perhaps because the payment model did not allow providers to keep all of the incentives (which the practice and providers shared). Program staff noted that incentives seemed more salient to advanced practice nurses and physician assistants. Because all providers who referred patients to RETAINWOR*KS* completed the required training, enrollees in both the treatment and control groups would be seen by trained providers.

Upon receiving a referral for RETAINWOR*KS*, recruitment staff contacted the potential enrollee to review eligibility. If the potential enrollee was eligible and interested, recruitment staff obtained the completed informed consent and alerted the potential enrollee that an employment counselor would contact them. If the referral did not originate with a provider, the recruitment staff contacted a medical provider for the referral, but the process of onboarding a new provider was lengthy. When they received a referral, the recruitment staff coordinated with the provider to ensure completion of the activity assessment. The healthcare recruitment staff (and at times, the employment counselor) worked with the enrollee to collect documentation confirming eligibility.

In general, RETAINWOR*KS* was able to deliver the services specified in its program model. Program data through June 2023 showed that almost all treatment enrollees (97 percent) used some RETAINWOR*KS* services after enrollment. Many treatment enrollees (71 percent) had an established RTW plan and, among those with an RTW plan, an average of 12 days elapsed between enrollment and establishing a plan. RTW coordination services involved regular contact between the RTW coordinator and enrollee to assess medical progress, identify potential accommodations, and conduct a 30-day risk assessment after enrollment. This risk assessment evaluated enrollees' abilities and needs to support an individualized RTW strategy. The program referred relatively few enrollees (2 percent) to services beyond RETAINWOR*KS* after the six-month enrollment period.

For almost all treatment enrollees, the RTW coordinator communicated with their medical provider and workforce professional at least once. This pattern of communication is consistent with the program model that required medical providers to sign off on all referrals and included workforce professionals (who provided employment-related and workforce development services) as part of the enrollment process. Communication between RTW coordinators and employers was much less common. RTW coordinators communicated with employers for only 7 percent of enrollees. Staff reported that some enrollees, especially those with a mental health diagnosis, did not permit RETAINWOR*KS* staff to communicate with their employer for fear of stigma or retaliation.

RTW coordinators also facilitated non-physical workplace-based interventions. Program service use data through June 2023 indicated that more than one-quarter of enrollees used a workplace intervention, which was likely facilitated by RTW coordinators' communication with employers. Eleven percent of enrollees used on-site job analysis, and 17 percent received support with a workplace accommodation.

The connection with employment counselors was particularly strong in the RETAINWOR*KS* model. About 69 percent of enrollees used the retraining or rehabilitation services that RETAINWOR*KS* offered. All those who used any such services used job search services. This service use was a key distinction from the control group—although control enrollees were offered standard workforce services, those services were not as individualized and frequent as those offered in RETAINWOR*KS*. If treatment enrollees required services after the six-month service period, program staff tried to connect them with Workforce Innovation and Opportunity Act services so they could continue receiving support beyond RETAINWOR*KS*.

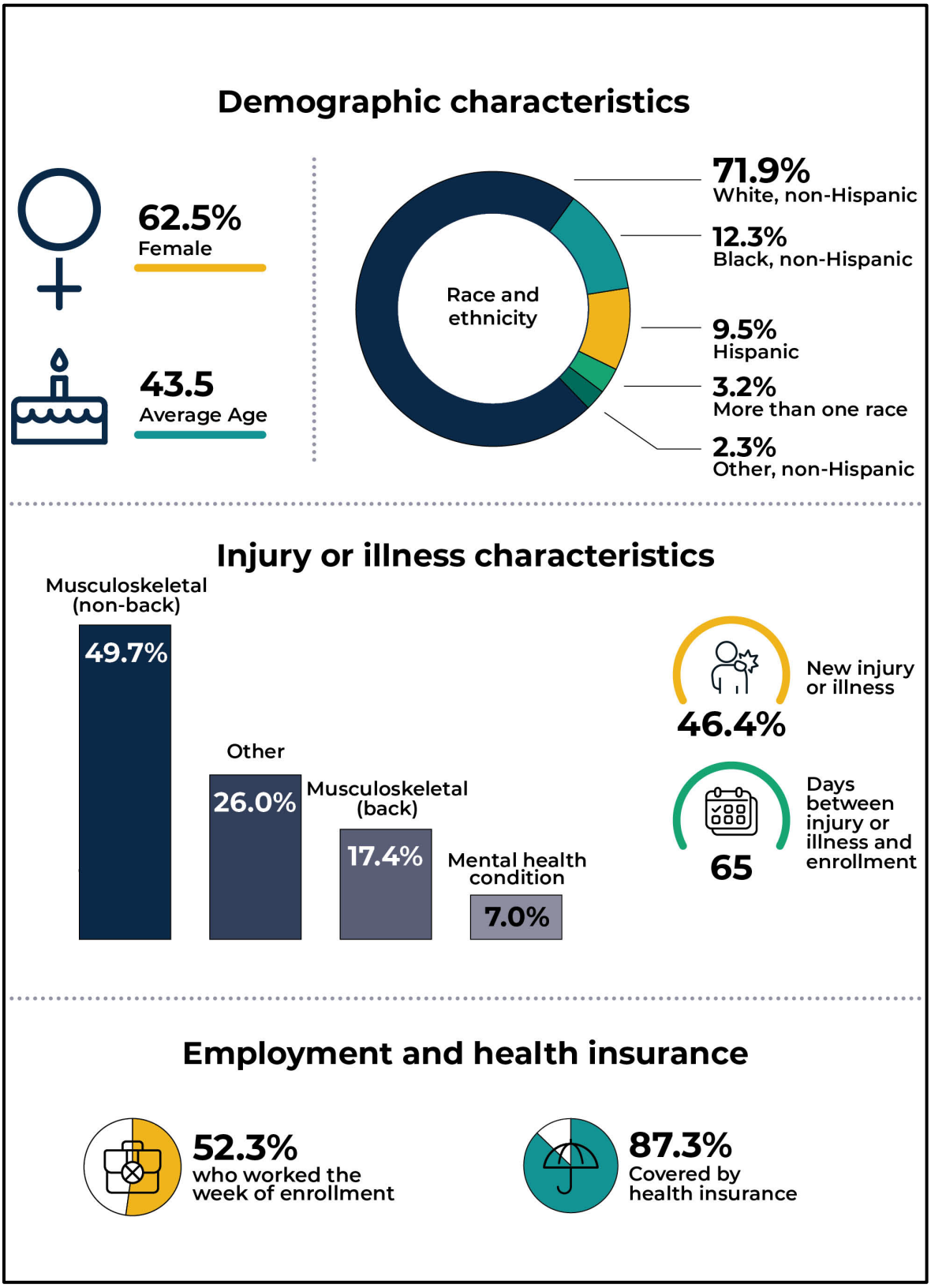
B. Baseline characteristics

During the RETAINWOR*KS* operation period under the Phase 2 grants, 963 people enrolled in the evaluation and were randomly assigned to either the treatment or control group. Because of a brief period when the probability of assignment to the treatment group exceeded 50 percent, a little more than half (53 percent) of the enrollees belonged to the treatment group.[13] The analysis sample for the early impact analysis comprised 834 enrollees who completed the early follow-up survey that Mathematica conducted. The median time between enrollment and survey completion was 11.1 weeks, with nearly all respondents completing the survey during the six-month period when they were eligible for services. In this section, we describe the characteristics of this sample at the time of enrollment in RETAIN and note any significant differences between the treatment and control groups. See Farid et al. (2023) for a comparison between RETAINWOR*KS* enrollees and comparison populations in the state (all workers and applicants for SSDI and SSI).

Demographic characteristics. Almost two-thirds of the RETAINWOR*KS* enrollees were female (63 percent), and the average age of enrollees was 44 (Exhibit III.1). Most enrollees were non-Hispanic White (72 percent), followed by non-Hispanic Black (12 percent), Hispanic (10 percent), more than one race (3 percent), non-Hispanic other race (2 percent), and non-Hispanic Asian (1 percent). Almost all enrollees cited English as their preferred language (99 percent). The most frequently reported educational

[13] In January 2023, we modified the probability of being assigned to the treatment group to 80 percent until April 2023, when it tapered to 60 percent; we eventually restored it to 50 percent in June 2023. During the program's Phase 2 operation period, we assigned 509 enrollees to the treatment group and 454 enrollees to the control group.

Exhibit III.1. RETAINWORK*S*: Baseline characteristics of early follow-up survey respondents



attainment was a high school diploma, GED, or certificate of completion (45 percent). About 21 percent of enrollees had a four-year college degree; 30 percent had an occupational certificate, license, or two-year college degree; and 5 percent had not completed high school.

Characteristics of primary injury or illness. The most common type of injury or illness among RETAINWOR*KS* enrollees was musculoskeletal (67 percent), including back (17 percent) and non-back (50 percent) musculoskeletal conditions. About 7 percent of enrollees had a mental health diagnosis, and 26 percent had an injury or illness that was not a musculoskeletal or a mental health condition. The primary injury or illness was a new condition, rather than a worsening of an existing condition for a little less than half of enrollees (46 percent). A similar share (47 percent) reported that their condition was a result of an accident or injury rather than an illness or a chronic condition. For 30 percent of enrollees, their primary illness or injury was work related; 18 percent of enrollees reported that their injury or illness was part of a workers' compensation claim. The average time between the onset or worsening of injury or illness and enrollment was about 65 days.

Recent work history. Most enrollees (81 percent) reported that they were employed at the time of enrollment (either self-employed or employed at a private company, nonprofit, or government), but only about 36 percent had worked during the week before enrollment, likely because of the onset or worsening of their injury or illness. About one-third of enrollees had not worked for at least one month before enrollment. Before their injury or illness, enrollees usually worked 40 hours per week on average. Enrollees varied considerably in their tenure at their current or most recent job: a large share (28 percent) had been at their job for more than five years, but a sizable share (22 percent) had worked at their job for less than six months. Enrollees most frequently worked in service occupations (34 percent); management, professional, or related occupations (30 percent); or production, transportation, or material moving (19 percent).

Economic well-being. Most enrollees (80 percent) reported that in the past 12 months, they had worked at a job that paid at least $1,000 a month before taxes and deductions. We are unable to report on enrollees' wage earnings in the quarter before enrollment because RETAINWOR*KS* was unable to supply administrative wage records for this period. At enrollment, relatively few enrollees reported receiving income from sources other than earnings, but the most common sources were employer-provided or other private disability insurance (8 percent) and workers' compensation (5 percent). Less than 2 percent received SSDI or veterans benefits, and only 3 percent reported income from other public programs. Five percent of enrollees reported that they had applied for or received SSI or SSDI during the three years before enrolling in RETAINWOR*KS*. Most enrollees (87 percent) had health insurance coverage at the time of enrollment.

Differences between the treatment and control groups. We compared the treatment and control groups across more than 20 baseline characteristics measured at the time of enrollment (see Appendix Exhibit A.11). Enrollees in the two groups had similar characteristics on average, as would be expected from the individual random assignment. We found three statistically significant differences. The distribution of race and ethnicity differed between the groups. Seventy percent of treatment enrollees were White, non-Hispanic compared with 75 percent of control group enrollees. A larger share of treatment enrollees were Black, non-Hispanic (14 percent) than control group enrollees (10 percent).

The pre-enrollment occupational distribution also differed between treatment and control enrollees. Compared with control group enrollees, treatment enrollees were more likely to be in production, transportation, material moving, natural resources, construction, or maintenance jobs before enrollment, and less likely to be in management, professional, sales, or office jobs. There was also a significant difference in the share of enrollees who had health insurance at enrollment, with higher rates of coverage among treatment enrollees (89 percent) than control enrollees (85 percent). To obtain unbiased estimates of program impacts, we accounted for the differences in race, ethnicity, occupation, and health insurance coverage at enrollment.

C. Early impacts on enrollees' service use, employment, and health outcomes

In this section, we discuss RETAINWOR*KS*'s early impacts on enrollees' use of SAW/RTW services, employment, and health, based on data from the early follow-up survey. The findings are based on Mathematica's independent evaluation of the program.

How we estimated the impacts of RETAINWOR*KS*

We estimated the program's impacts by comparing the outcomes of enrollees in the treatment group, who could access RETAINWOR*KS* services, to the outcomes of enrollees in the control group, who could not. We describe the program's impact on an outcome in terms of how the average outcome of treatment enrollees differed from that of control enrollees. ◢

RETAINWOR*KS* increased enrollees' use of SAW/RTW services during the two months before the early follow-up survey. The program increased the share of enrollees who were in the labor force but did not affect the share who were working at the time of the survey, relative to the control group. The program appeared to have a positive impact on enrollees' health at the time of the early follow-up survey, with significant decreases in the number of poor physical health days and the share of enrollees reporting that pain interfered with work most or all of the time. RETAINWOR*KS* reduced the likelihood that enrollees had been prescribed an opioid pain reliever.

We also estimated impacts of RETAINWOR*KS* on service use and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis. The program's impacts differed by sex and primary diagnosis for some of the service use and training outcomes. The final impact report will include subgroup analyses of employment outcomes.

RETAINWOR*KS* increased the share of enrollees who used SAW/RTW services. About 7 percent of control group enrollees reported that they had worked with a care or service coordinator in the two months before the early follow-up survey; RETAINWOR*KS* increased this share by 34 percentage points (an increase of more than 400 percent relative to the control group) (Exhibit III.2 and Appendix Exhibit B.1.1). Furthermore, 91 percent of treatment enrollees who worked with a care or service coordinator reported that they found these services to be very or somewhat useful (Appendix Exhibit B.1.2).

During the two months before the survey, about two-thirds of control group enrollees had talked with a healthcare provider about how their injury or illness affected their ability to work; RETAINWOR*KS* increased this share by 6 percentage points (a 9 percent increase relative to the control group). Treatment enrollees who had such conversations with their medical providers reported high levels of satisfaction

with these services, with more than 84 percent of treatment enrollees reporting that the conversations were extremely or somewhat helpful (Appendix Exhibit B.1.2).

RETAINWOR*KS* also had positive impacts on enrollees' use of employment-related support services and job-related training. About 10 percent of control group enrollees reported that they used employment-related support services during the two months before the survey; RETAINWOR*KS* increased this share by 22 percentage points (an increase of more than 200 percent relative to the control group). RETAINWOR*KS* also increased the share of enrollees who participated in job-related training; about 5 percent of control group enrollees reported that they had participated in job-related training during the two months before the survey; RETAINWOR*KS* increased this share by 4 percentage points.

RETAINWOR*KS* did not affect the share of enrollees who were enrolled in school or taking classes at the time of the survey, which was about 8 percent in both the treatment and control groups.

RETAINWOR*KS*'s impacts on use of SAW/RTW services differed by enrollees' sex and primary diagnosis. Although the impacts of RETAINWOR*KS* on service use did not differ by enrollee age (Appendix Exhibit B.1.3), the program had a larger impact on the use of care coordination services among female enrollees (41 percentage points) compared with male enrollees (21 percentage points) (Appendix Exhibit B.1.4). This finding may reflect that a smaller share (6 percent) of female control group enrollees reported worked with a care or service coordinator than did male control group enrollees (11 percent), leaving more room for the program to improve the outcome for that subgroup. The finding may also reflect differences between men and women in engagement with healthcare, as found in prior research (Thompson et al. 2016).

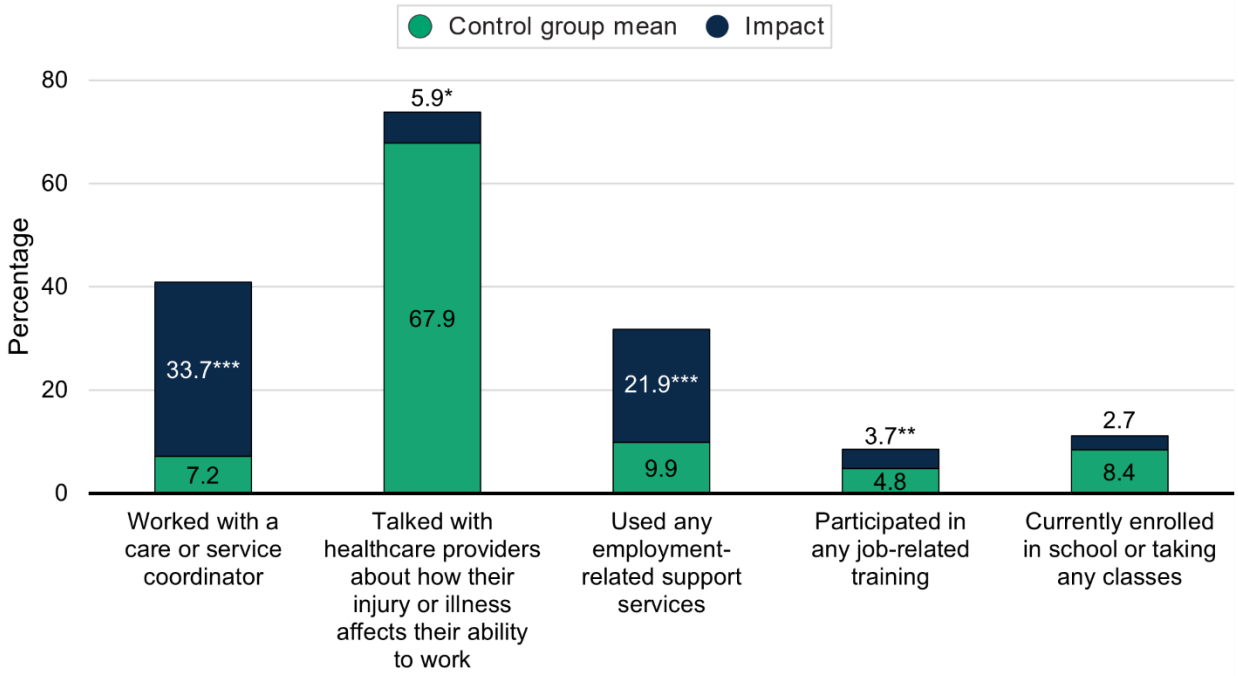
RETAINWOR*KS* also had a substantially larger impact on the use of employment services among enrollees with non-musculoskeletal conditions (32 percent) than among those with musculoskeletal conditions (17 percent) (Appendix Exhibit B.1.5). The program assigned every treatment enrollee to an employment counselor who was involved in RTW planning, so all treatment enrollees, regardless of diagnosis, had a means of accessing employment services. Thus, the difference in the impacts of RETAINWOR*KS* by primary diagnosis might reflect a greater need for or interest in employment services among those with non-musculoskeletal conditions, rather than any difference in access to services.

RETAINWOR*KS* increased the share of enrollees who were in the labor force at the time of the early follow-up survey but had no impact on the employment rate. Although 88 percent of control enrollees were in the labor force (that is, either connected to an employer or looking for work), RETAINWOR*KS* increased this share by 5 percentage points (Exhibit III.3 and Appendix Exhibit B.1.1). The pattern of impacts suggests this impact was primarily driven by an increase in the share of treatment enrollees looking for work because in both the treatment and control groups, about 76 percent of enrollees were connected to an employer. Approximately 61 percent of control group enrollees were working at the time of the survey and 27 percent were not working but planning to return to work in the next 90 days; RETAINWOR*KS* did not affect these shares.

RETAINWOR*KS* had no impact on employment characteristics, including the average number of hours worked per week, weekly pay, or employment benefits such as paid leave and health insurance. Control group enrollees reported an average of 23 hours worked per week and an average weekly pay of $504.

Almost half of the control group (48 percent) worked for an employer that offered health insurance; a similar share (47 percent) worked for an employer that offered paid leave.

Exhibit III.2. RETAINWOR*KS*'s early impacts on use of services and training



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

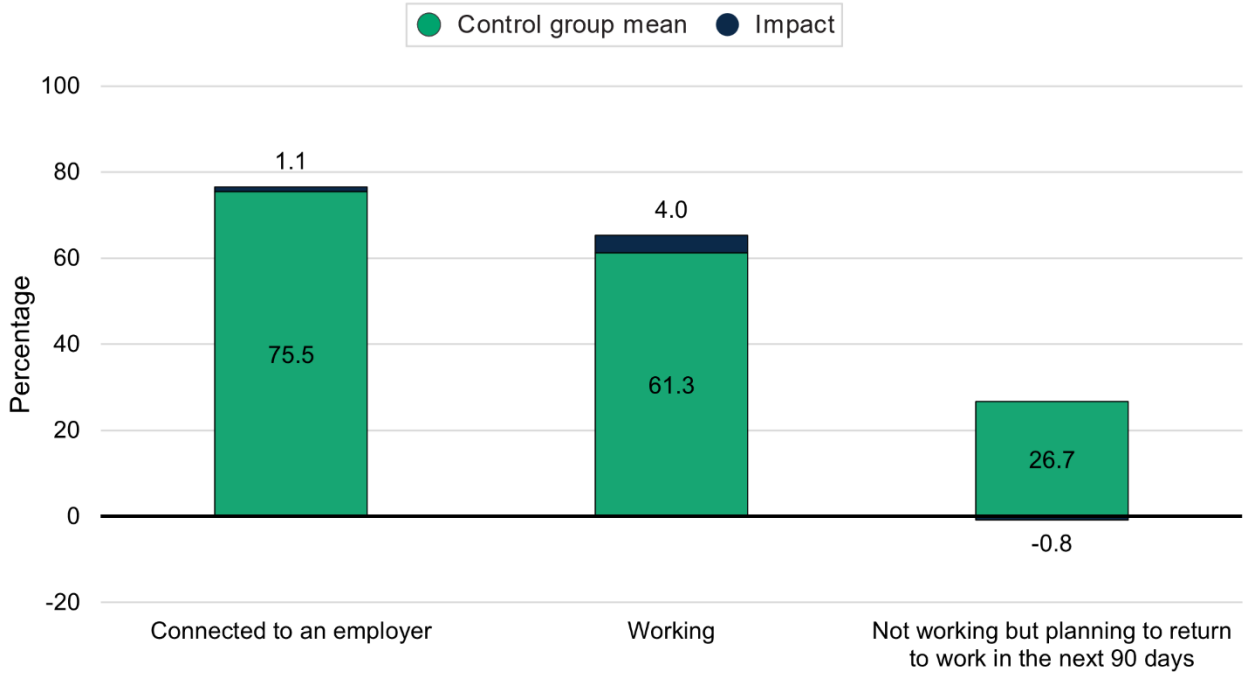
Note: See Appendix Exhibit B.1.1 for more details.

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

RETAINWOR*KS* helped enrollees return to work with accommodations. In the control group, 14 percent of enrollees were working and had received advice about modifying a job or workplace; RETAINWOR*KS* increased this share by 15 percentage points (a relative increase of 107 percent). Treatment enrollees were also more likely to report in the survey that they were working and their employer offered the chance to return to work with needed accommodations. Although 36 percent of control group enrollees reported this status, RETAINWOR*KS* increased the share by 6 percentage points. Among treatment enrollees who were working, the most common accommodations that employers offered included changes to the work environment (41 percent), a change in job duties (40 percent), additional breaks from work (35 percent), reduced work hours or work week (33 percent), and a telecommuting arrangement (19 percent) (Appendix Exhibit B.1.2).

At the time of the early follow-up survey, slightly more than one-quarter of enrollees were not working but planning to return to work in the next 90 days. Among treatment enrollees who were not employed, the most common reasons reported for not working included fearing their condition would worsen if they returned to work (64 percent), their injury or illness was too severe (60 percent), their doctor did not want them to return (32 percent), and employers would not make needed accommodations (31 percent). Treatment enrollees also reported not having a job to return to because they had been fired or terminated (33 percent), no work was available, or they had been laid off (21 percent) (Appendix Exhibit B.1.2).

Exhibit III.3. RETAINWOR*KS*'s early impacts on labor force attachment and employment

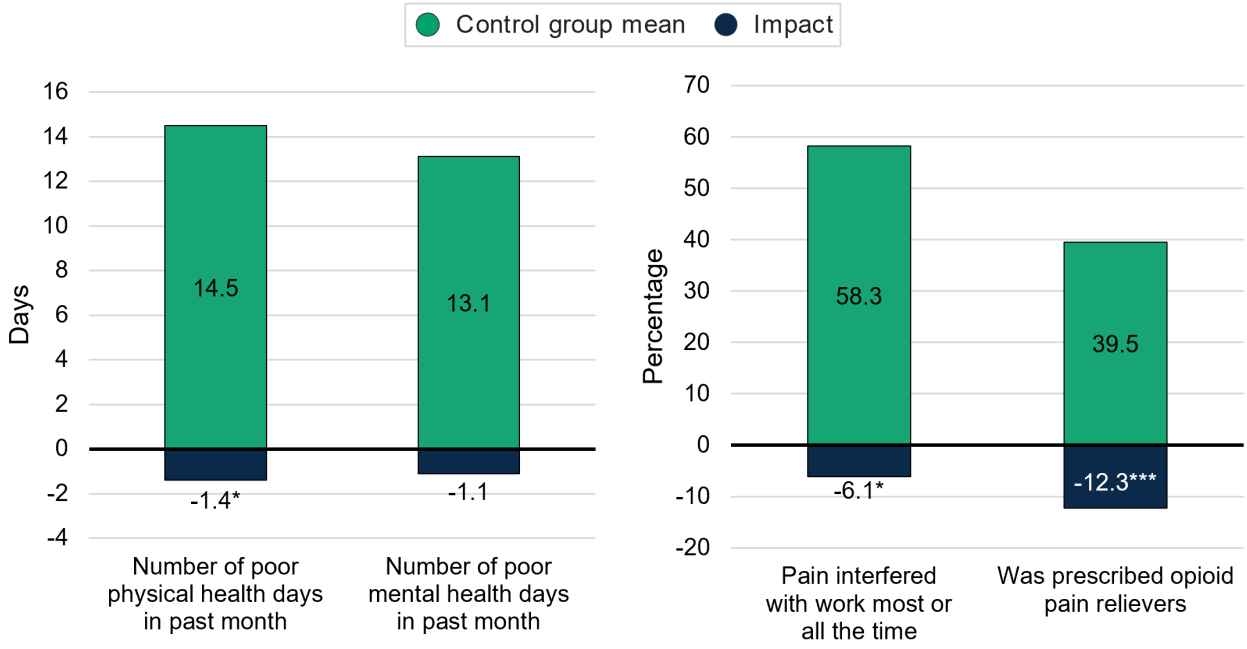


Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.1.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

RETAINWOR*KS* had a positive impact on multiple measures of enrollees' health at the time of the early follow-up survey. At the time of the early follow-up survey, 20 percent of control group enrollees reported that their health was very good or excellent (Exhibit III.4 and Appendix Exhibit B.1.1). Although RETAINWOR*KS* did not affect this measure, it reduced the number of reported poor physical health days in the past month by 1.4 days (or nearly 10 percent) compared with control group enrollees. RETAINWOR*KS* did not affect the average reported pain score, but it reduced the share of enrollees who indicated that pain interfered with work most or all of the time by 6.1 percentage points (a 10 percent reduction relative to the control group).

RETAINWOR*KS* also had a large impact on the share of enrollees who reported being prescribed opioid pain relievers. Although 40 percent of control group enrollees reported that they received a prescription for an opioid pain reliever; RETAINWOR*KS* reduced this share by 12 percentage points (a 31 percent decrease relative to the control group). RETAINWOR*KS* did not affect the number of poor mental health days or the share of enrollees who had health insurance.

Exhibit III.4. RETAINWOR*KS*'s early impacts on health



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.1.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

D. Discussion

RETAINWOR*KS* increased the likelihood that enrollees used RTW services, including care or service coordination and interactions with healthcare providers about work. It was rare for the control group to have used care or service coordination; only 7 percent reported having worked with a care or service coordinator in the two months before the survey. The program increased this share by almost five-fold among treatment enrollees. In contrast, conversations with healthcare providers about work were common among control group enrollees (68 percent); RETAINWOR*KS* still increased these conversations among treatment enrollees, but by a more modest 6 percentage points. RETAINWOR*KS*'s design and operations may have contributed to the high rate among the control group; all enrollees needed a referral from a RETAIN-trained provider, and these medical providers may have applied the training to all of their patients experiencing SAW/RTW challenges (regardless of random assignment group).

RETAINWOR*KS* also had sizable impacts on enrollees' use of employment-related support services and participation in job-related training. The fact that all RETAINWOR*KS* treatment enrollees met with an employment counselor during enrollment may have contributed to these impacts. The connection with an employment counselor added complexity to the enrollment process but also linked enrollees with potential SAW/RTW supports. The impact findings are consistent with program data on the use of retraining and rehabilitation services; for example, data through June 2023 indicate that nearly 70 percent of treatment enrollees had used job search services and 27 percent had used workplace-based services.

RETAINWOR*KS* treatment enrollees were more likely to be connected to an employer or looking for work relative to control group enrollees. However, the program did not affect the share of enrollees who were

working at the time of the survey. Other findings highlight ways RETAINWOR*KS* might have supported enrollees' ability to stay in the workforce. RETAINWOR*KS* increased the shares of enrollees who were working and received advice about modifying a job or workplace, as well as the share of enrollees working who reported that their employer offered the chance to return to work with needed accommodations. These positive impacts are consistent with program data reported above that more than one-quarter of enrollees received a workplace intervention, including on-site job analysis and support with a workplace accommodation. Analyses we conduct for the final impact report will indicate whether RETAINWOR*KS* improved employment outcomes one year later.

The early impact results indicate that RETAINWOR*KS* improved multiple measures of enrollees' self-reported health by the time of the early follow-up survey. Compared with the control group, treatment enrollees reported fewer poor physical health days and were less likely to report that pain regularly interfered with work and that they received prescriptions for opioid pain relievers. The mechanisms for the impacts on health outcomes are unclear. Because RETAINWOR*KS* provided training for medical providers of both treatment and control enrollees, medical provider training alone does not explain the differences in the receipt of opioid prescriptions between the two groups.

The implementation of RETAINWOR*KS* could plausibly explain the positive impacts on enrollees' health outcomes. The close coordination between RTW coordinators and medical providers might have contributed to the positive health impacts. For nearly all treatment enrollees (97 percent), the RTW coordinator communicated with the medical provider at least once (Keith et al. 2024). It is also possible that the RTW coordinator services had a direct impact on health outcomes. RETAINWOR*KS* RTW coordinators were nurses; the reassurance of their medical training, along with the information and support they provided enrollees, might have contributed to a reduction in anticipatory requests for opioid prescriptions.

Another explanation for the impacts on health outcomes is that they were due to underlying group differences before enrollment, rather than true program impacts. Health insurance coverage rates at the time of enrollment were higher among treatment enrollees than control enrollees (Exhibit III.1). For some other characteristics, such as time between injury/illness and enrollment or the type of injury or illness, the differences between the treatment and control groups were nontrivial in size even though they were not statistically significant. These differences could have contributed to group differences in health outcomes that would have existed even in the absence of RETAINWOR*KS*. In sensitivity checks (not shown) where we conservatively controlled for additional baseline characteristics as covariates, the point estimates of the impacts on health outcomes remained similar, although only the impact on opioid prescriptions remained statistically significant.

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IV. RETAIN Kentucky

Key findings from the early impact analysis

- Enrollees in the treatment and control groups had similar characteristics, with two exceptions. Relative to the control group, a larger share of treatment enrollees had an injury or illness that was part of a workers' compensation claim. The two groups also differed in their educational distributions.
- RETAIN Kentucky increased the share of enrollees who used care or service coordination and employment-related support services in the two months before the early follow-up survey.
- RETAIN Kentucky increased the share of enrollees who were working and received advice about modifying their job or workplace but had no other impacts on enrollees' labor force attachment and employment at the time of the early follow-up survey.
- On average, treatment and control enrollees had similar self-reported health outcomes at the time of the survey. ◢

A. Program overview

Here, we provide an overview of the RETAIN Kentucky (RETAIN KY) program design and implementation as documented through Mathematica's independent evaluation. We draw on key findings from Mathematica's process analysis (Keith et al. 2024), which covered program implementation and service delivery through June 2023, midway through the program's operation period under the Phase 2 grant. The program made changes to some implementation components over time, following a continuous quality improvement approach.

1. Program design

The Kentucky Office of Vocational Rehabilitation (OVR) was the lead agency for RETAIN KY. OVR's workforce partner, the University of Kentucky Human Development Institute, led the day-to-day implementation of the program, including enrollment and the provision of RTW and employment services. Two healthcare partners, University of Kentucky HealthCare and University of Louisville Health, supported enrollment. Midway through the enrollment period, RETAIN KY partnered with an online clinical research platform to increase referrals to the program. The program's service area included the entire state of Kentucky. RETAIN KY enrolled people who were employed or had been employed within the past 12 months and had an injury or illness that was not work related but affected their employment.

The RETAIN KY program used a vocational rehabilitation model, which considers employment as a contributing factor to a person's recovery process and health outcomes. RETAIN KY's model included the following:

- Training for medical providers covering best practices in supporting return to work and providing an overview of the RETAIN KY program
- RTW coordination services that involved developing an RTW plan; communicating with the enrollee weekly; and communicating with the enrollee's employer, medical provider, and others to coordinate their SAW/RTW services as needed, if permitted by the enrollee

- Other services, including retraining, rehabilitation, referrals within RETAIN KY to an assistive technology specialist or peer mentor, and referrals outside of RETAIN KY to local career centers and OVR

The evaluation of RETAIN KY used an individual random assignment design. We randomly assigned enrollees to the treatment or control group; they received a $100 incentive payment for enrolling. Enrollees in the treatment group could access the full set of RETAIN KY services for six months or until they returned to work with a completed RTW plan, whichever came first. Those in the control group could access a limited set of RETAIN KY services on an expedited basis, as well as the usual services available in their communities. In total, RETAIN KY enrolled 3,153 people in the evaluation from October 2021 to May 2024.

2. Program implementation

RETAIN KY initially experienced challenges with recruitment but was eventually able to come close to its original target of 3,200 enrollees. RETAIN KY staff conducted outreach to employers, career centers, local workforce innovation boards, medical providers, and other types of clinicians to increase awareness of RETAIN KY and prompt referrals. Initially, the primary sources of referrals for enrollment in RETAIN KY were from clinical support staff at University of Kentucky HealthCare and University of Louisville Health. In 2023, the program began using Build Clinical, an online clinical research recruitment platform, which quickly became the primary source of referrals, followed by OVR counselors and staff using a streamlined referral process. At that point, the pace of enrollment increased significantly.

Upon receiving a referral for RETAIN KY, intake staff reached out to potentially eligible people to confirm their eligibility and discuss the program. If eligible people were interested in enrolling, the intake coordinator obtained their informed consent and completed enrollment and random assignment.

During interviews conducted in April 2023, program leaders and staff reported delivering services as planned in the RETAIN KY program model. However, program data through June 2023 suggest that use of most services was lower than expected. Though program data through that month indicate that 77 percent of treatment enrollees used at least one RETAIN KY service, the most commonly used service was the establishment of an RTW plan, which 76 percent of treatment enrollees completed. Treatment enrollees who developed an RTW plan did so quickly, taking an average of six days from enrollment. Few treatment enrollees accessed other services. After the establishment of an RTW plan, the next most commonly used services were job search services (10 percent of treatment enrollees), workplace accommodations (7 percent), and other employment services (7 percent). No more than 3 percent of treatment enrollees used any of the remaining services. According to program staff, treatment enrollees' health-related social needs, mental health conditions, and lack of motivation to return to work contributed to low service use.

RTW coordinators interviewed in April 2023 cited coordination with others involved in enrollees' RTW plans as a challenge. Program data through June 2023 indicate that RTW coordinators communicated with the enrollees' medical providers, workforce professionals, and employers for 24 percent, 14 percent, and 3 percent of treatment enrollees, respectively. RTW coordinators attributed the coordination challenges to the need to obtain enrollees' permission to contact their medical providers and employers.

Enrollees' willingness to grant their permission varied; one RTW coordinator reported receiving permission from 90 percent of enrollees, whereas another RTW coordinator reported receiving permission from only 25 percent. Another factor that likely contributed to low levels of coordination with medical providers was that medical provider training did not begin until 2023, a delay caused by the closure of the accreditation organization from which RETAIN KY initially sought approval for continuing medical education credits.

Low rates of service use and a lack of coordination with medical providers and employers potentially limited the contrast between the treatment and control groups. For treatment enrollees who did not grant permission for RTW coordinators to communicate with other parties on their behalf, the services available to them resembled those available to the control group. However, the potential duration of service use differed between the treatment and control groups. Treatment enrollees could use services for up to six months, compared to only two weeks for the control group. Program data through June 2023 indicate that among treatment enrollees who had exited RETAIN KY by that month, the average duration of services was about two and a half months (78 days).

Unlike the other RETAIN programs, RETAIN KY offered enrollees in the control group access to some program services. The control group could access services generally available in the community and an expedited version of RTW coordination services that RETAIN KY provided within a two-week period, for up to three hours total. Expedited services consisted of two meetings that included a work experience survey, the development of an RTW plan, guidance on self-advocating with their employer, and referrals to other services. According to program data from the state through September 2024, more than 75 percent of both treatment and control enrollees established an RTW plan (not shown). Whereas treatment enrollees received a referral to OVR, control group enrollees received information on how to self-refer to OVR. Although only treatment enrollees were eligible to have RTW coordinators communicate with their medical providers or employers, this communication did not happen for most enrollees. Thus, the main distinction between the treatment and control groups is the treatment group's longer duration of services.

B. Baseline characteristics

During RETAIN KY's operation period under the Phase 2 grant, 3,153 people enrolled in the evaluation and were randomly assigned to either the treatment or control group. Because of a brief period when the probability of assignment to the treatment group exceeded 50 percent, a little over half (52 percent) of the enrollees belonged to the treatment group.[14] The analysis sample for the early impact analysis of RETAIN KY comprised 2,567 enrollees who completed the early follow-up survey that Mathematica conducted. Here we describe the baseline characteristics of this sample and note any significant differences between the treatment and control groups. See Farid et al. (2023) for a comparison between RETAIN KY enrollees and comparison populations in the state (all workers and applicants for SSDI and SSI).

Demographic characteristics. Almost two-thirds of RETAIN KY enrollees were female (62 percent), and the average age of enrollees was 42 (Exhibit IV.1). Most enrollees were non-Hispanic White (74 percent),

[14] In January 2023, the probability of being assigned to the treatment group was modified to 80 percent until April 2023 when it was restored to 50 percent. During the program's Phase 2 operation period, 1,654 enrollees were assigned to the treatment group and 1,499 enrollees to the control group.

followed by non-Hispanic Black (16 percent), more than one race (5 percent), Hispanic (3 percent), and non-Hispanic Asian (1 percent). Almost all enrollees cited English as their preferred language (99 percent) and had a high school diploma or further education (94 percent). The most frequently reported educational attainment was a high school diploma, GED, or certificate of completion (47 percent). About equal percentages of enrollees had a four-year college or postgraduate degree (25 percent) or an occupational certificate, license, or a two-year college degree (22 percent). Only 6 percent of enrollees had not completed high school.

Characteristics of primary injury or illness. About one-third of enrollees had a mental health condition (32 percent) as their primary diagnosis, and 17 percent had a non-back musculoskeletal injury or illness. About 41 percent of enrollees had a primary injury or illness that was neither musculoskeletal nor a mental health condition.[15] For about one-fifth of enrollees (18 percent), the primary injury or illness was a new condition rather than a worsening of an existing condition. A similar share (20 percent) had a condition resulting from an accident or injury rather than an illness or a chronic condition. Consistent with RETAIN KY's eligibility criteria, only 6 percent of enrollees reported that their primary injury or illness was work related, and only 1 percent reported that it was part of a workers' compensation claim. Enrollees tended not to enroll immediately after experiencing the onset or worsening of their primary illness or injury. The average time between the onset or worsening of their injury or illness and enrollment was about 266 days, or a little under nine months—substantially longer than the averages of the other four RETAIN programs.

Recent work history. About two-thirds of enrollees (66 percent) reported that they were employed at the time of enrollment. Although almost half of the enrollees (49 percent) had worked during the week before enrollment, about one-third (37 percent) had not worked for at least one month before enrollment. Before their injury or illness, enrollees usually worked 37 hours per week on average. Enrollees varied considerably in their tenure at their current or most recent job. The largest share (33 percent) had worked at their job for less than six months but the next largest share (21 percent) had been at their job for more than five years. Enrollees also varied in the occupational classification of their current or most recent job. The largest share of enrollees worked in a service occupation (40 percent), followed by management, professional, or related (29 percent); production, transportation, or materials moving (17 percent); sales and office (9 percent); and natural resources, construction, or maintenance (6 percent).

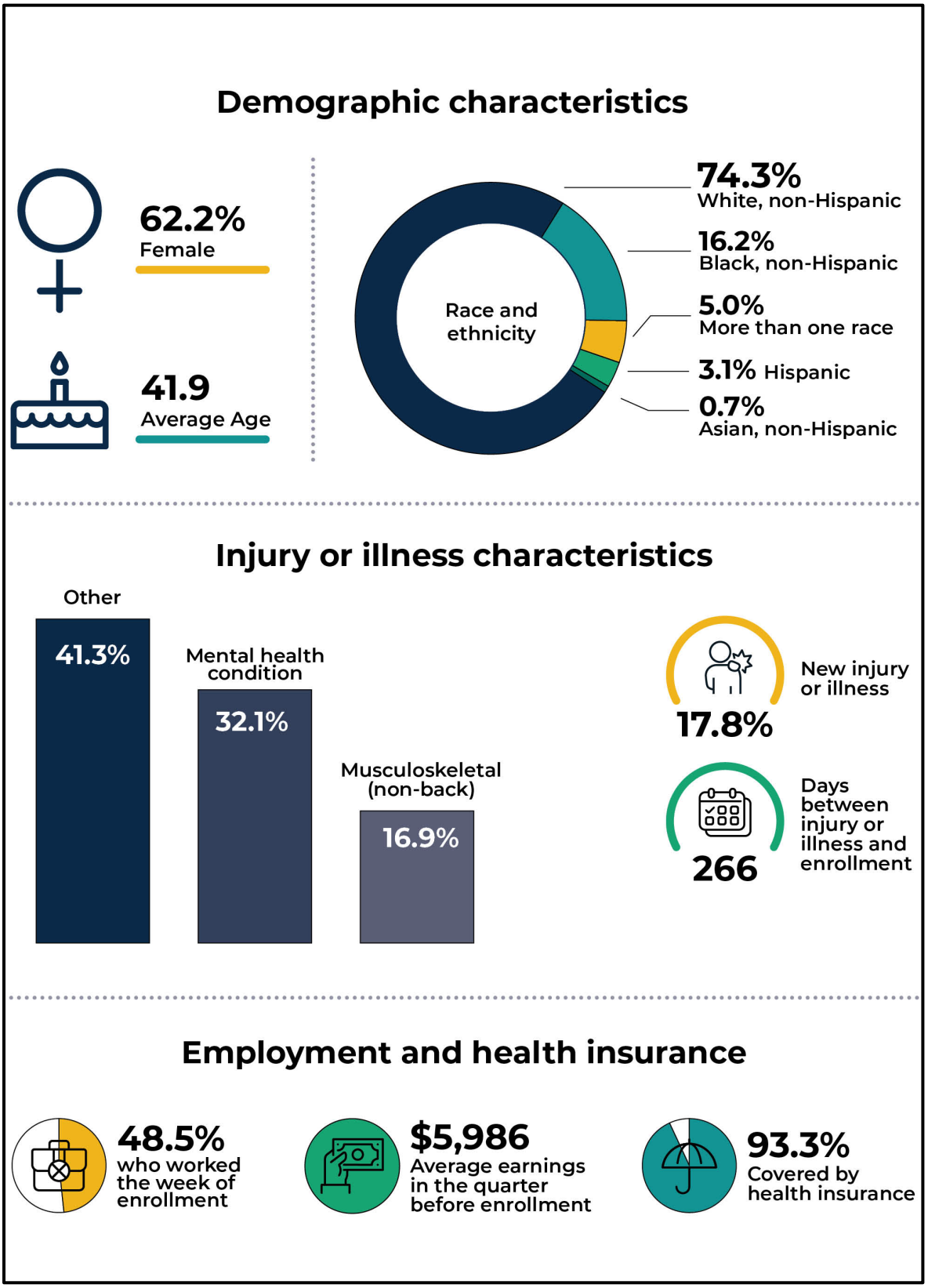
Economic well-being. Wage records indicated that enrollees earned $5,986 on average in the quarter before enrollment, and most enrollees (81 percent) reported that in the past 12 months, they had worked at a job that paid at least $1,000 a month before taxes and deductions. At enrollment, some enrollees reported receiving income from sources other than earnings. About 5 percent received employer-provided or other private disability insurance, 1 percent received veterans benefits, 1 percent received SSDI or SSI, almost none received workers' compensation, and 11 percent reported income from other public programs. Consistent with RETAIN's goal to intervene before people apply for federal disability

[15] Most of the remaining 10 percent of enrollees had a back musculoskeletal injury or illness, and the small remainder had missing data on their type of injury or illness. We do not provide precise estimates for these two groups because at least one category contained fewer than 4 people.

benefits, only 3 percent of enrollees reported that they had applied for or received SSI or SSDI in the three years before enrolling in RETAIN KY. Almost all enrollees (93 percent) had health insurance at enrollment.

Differences between the treatment and control groups. We compared the treatment and control groups across more than 20 baseline characteristics measured at the time of enrollment and found two statistically significant differences. Enrollees in the treatment group differed from those in the control group in their educational attainment, with a larger share of treatment enrollees having at least a high school diploma. Also, the share of enrollees for whom the injury or illness was part of a workers' compensation claim was slightly larger among the treatment group than the control group. To obtain unbiased estimates of program impacts, when comparing the average outcomes of the treatment and control groups, we accounted for the differences in educational attainment and the share of enrollees for whom their condition was part of a workers' compensation claim.

Exhibit IV.1. RETAIN Kentucky: Baseline characteristics of early follow-up survey respondents



C. Early impacts on enrollees' service use, employment, and health outcomes

In this section, we discuss the early impacts of RETAIN KY on enrollees' use of SAW/RTW services, employment, and health, based on data from the early follow-up survey. The findings are based on Mathematica's independent evaluation of the program.

How we estimated the impacts of RETAIN KY

We estimated the program's impacts by comparing the outcomes of enrollees in the treatment group, who could access the full set of RETAIN KY services, to the outcomes of enrollees in the control group, who could access a limited set of services on an expedited basis. We describe the program's impact on an outcome in terms of how the average outcome of treatment enrollees differed from that of control enrollees. ◢

RETAIN KY had positive impacts on two of five service use and training outcomes in the two months before the survey. Relative to the control group, it increased the shares of treatment enrollees who worked with a care or service coordinator and used any employment-related support services. RETAIN KY had no impacts on enrollees' labor force attachment, employment, and health at the time of the early follow-up survey.

We also estimated impacts of RETAIN KY on service use and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis. RETAIN KY had differential impacts on the share of enrollees who used certain types of services by age, sex, and primary diagnosis. The final impact report will include analyses of subgroup impacts on employment outcomes.

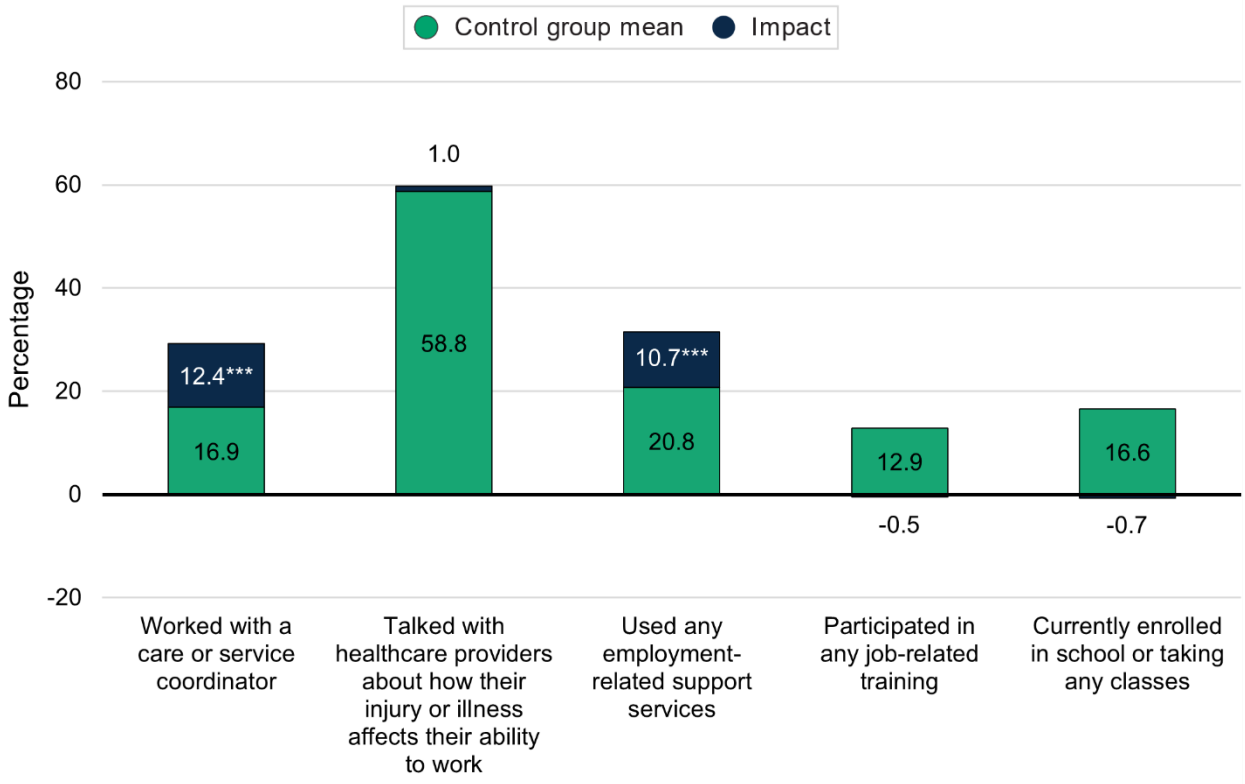
RETAIN KY increased the share of enrollees who used care or service coordination and employment-related support services. About one-fifth of control group enrollees reported that they had worked with a care or service coordinator (17 percent); RETAIN KY increased this share by 12 percentage points (or 73 percent relative to the control group) (Exhibit IV.2 and Appendix Exhibit B.2.1). Among treatment enrollees who worked with a care or service coordinator, almost all (89 percent) reported that they found the service somewhat or very useful (Appendix Exhibit B.2.2). RETAIN KY also increased the use of employment-related support services. About one-fifth of control group enrollees reported that they had used any employment-related support services (21 percent) during the two months before the survey; RETAIN KY increased this share by 11 percentage points (or 52 percent relative to the control group).

RETAIN KY had no impact on the other types of SAW/RTW services queried: talking with a healthcare provider about how their injury or illness affected their ability to work, participating in any subsequent job-related training, and current school or class attendance. Rates of participation in these services varied among the control group. A majority of control group enrollees (59 percent) reported talking with a healthcare provider about the ability to work, but fewer of them reported participating in job-related training (13 percent) or being enrolled in school or classes (17 percent).

RETAIN KY's impacts on use of SAW/RTW services differed by enrollees' age, sex, and primary diagnosis. RETAIN KY had a differential impact on treatment enrollees' use of employment-related support services by age (Appendix Exhibit B.2.3). The program had a larger impact for treatment enrollees younger than age 50 (13 percentage points, or 80 percent relative to the control group mean) than for those age 50 and older (5 percentage points, or 59 percent relative to the control group mean). This

finding could reflect a greater need for employment-related services among younger people; control group enrollees younger than age 50 had a higher rate of unemployment at enrollment (39 percent) than those age 50 or older (25 percent) (not shown). Indeed, RETAIN KY delivered employment-related services to treatment enrollees who were unemployed or seeking a job transition, so the higher rate of unemployment among younger enrollees probably made these enrollees more likely to use employment-related services than their older counterparts.

Exhibit IV.2. RETAIN Kentucky's early impacts on use of services and training



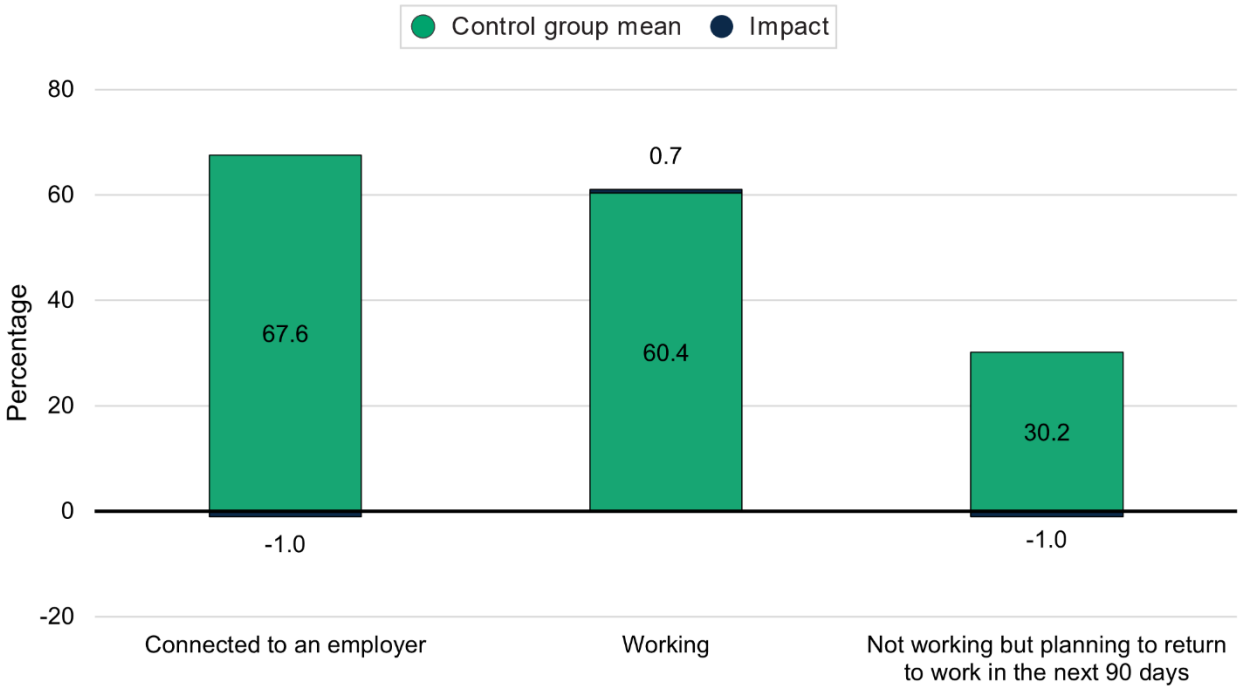
Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.2.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

The program's impacts on treatment enrollees' use of SAW/RTW services also differed by sex (Appendix Exhibit B.2.4). The program had a larger impact on the use of employment-related support services for female enrollees (13 percentage points, or 63 percent relative to the control group mean) than for male enrollees (7 percentage points, or 33 percent relative to the control group mean). Similarly, the program increased the share of female enrollees who talked with a healthcare provider about how injury or illness affected their ability to work (by 4 percentage points, or 7 percent relative to the control group mean) but had no impact on male enrollees. For both types of services, the share of control group enrollees who used the service was similar for male and female enrollees. The larger impacts among female enrollees is consistent with prior research that has documented women as engaging at higher rates than men in employment training services (Maxwell et al. 2012) and healthcare (Thompson et al. 2016). It is also consistent with program data from RETAIN KY that show a higher share of female treatment enrollees used any services beyond enrollment, compared to male treatment enrollees.

Additionally, RETAIN KY had a larger impact on use of care or service coordination among treatment enrollees with musculoskeletal injuries (21 percentage points, or 158 percent relative to the control group mean) than among those with non-musculoskeletal injuries (9 percentage points, or 52 percent relative to the control group mean) (Appendix Exhibit B.2.5). Enrollees with musculoskeletal injuries enrolled in RETAIN much sooner after their injury or illness (an average of 109 days) than those with non-musculoskeletal injuries (an average of 322 days) (not shown), when perhaps they had a greater need for coordination services. Many of the enrollees with non-musculoskeletal conditions had mental health conditions, which can make it especially challenging to engage with SAW/RTW services (Brouwers 2020; Charette-Dussault and Corbière 2019; Farid et al. 2024; Gould-Werth et al. 2018).

RETAIN KY had no impact on enrollees' labor force attachment at the time of the early follow-up survey, but it increased the share of enrollees who received advice about modifying their job or workplace. The program had no impact on the shares of enrollees who were connected to an employer (that is, working or on medical leave) or not working but planning to return to work in the next 90 days (Exhibit IV.3). In both the treatment and control groups, about 68 percent of enrollees were connected to an employer, 60 percent were working, and 30 percent were not working but planning to return to work in the next 90 days. About nine in every 10 enrollees (92 percent) were in the labor force—that is, either connected to an employer or looking for work.

Exhibit IV.3. RETAIN Kentucky's early impacts on labor force attachment and employment



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.2.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

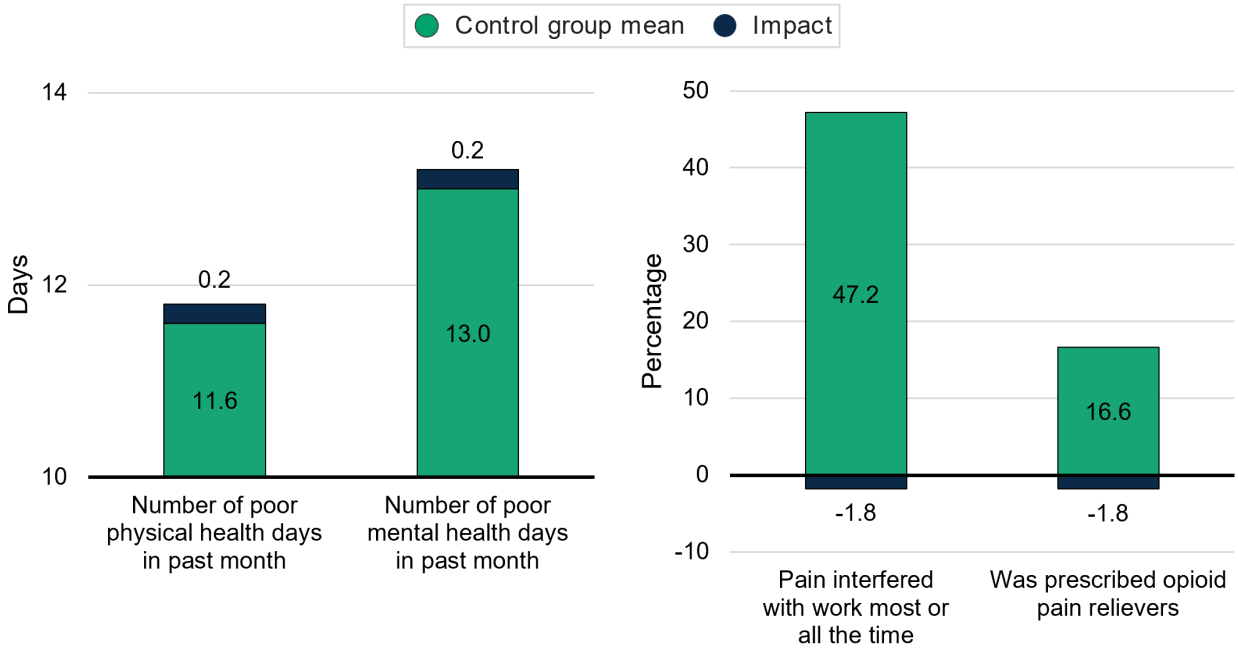
Among treatment enrollees who were employed but on medical leave, the most common reasons reported for not working included their doctor believing they were not ready for work (80 percent), their

injury or illness being too severe (73 percent), and fearing their condition would worsen if they returned to work (61 percent) (Appendix Exhibit B.2.2). Fears about a condition worsening and injury or illness severity were also the most comment concerns that treatment enrollees who were not employed cited, with 56 and 47 percent of enrollees reporting each concern, respectively.

RETAIN KY increased the share of enrollees who received advice about modifying their job or workplace. Among the control group, 17 percent of enrollees received advice about modifying their job or workplace, and RETAIN KY increased this share by 4 percentage points (or 24 percent relative to the control group). As the program had no impact on employment rates, it is reasonable to infer that this impact was driven by an increase in the receipt of such advice among working enrollees. The program had no impact on other employment characteristics. On average per week, enrollees worked 21 hours and earned $426. About 38 percent of enrollees were working for an employer that offered health insurance; the same share were working for an employer that offered paid leave. About one in three enrollees (30 percent) were working and their employer had offered the chance to return to work with needed accommodations.

RETAIN KY had no impact on self-reported health outcomes at the time of the early follow-up survey. The program had no impact on enrollees' self-reported health, health insurance coverage, or number of poor physical or mental health days in the month before the early follow-up survey (Exhibit IV.4). Across treatment and control groups, only about one in five enrollees (20 percent) reported their health was very good or excellent and, on average, enrollees reported 12 and 13 days of poor physical and mental health days in the past month, respectively. Most enrollees (94 percent) had health insurance at the time of the survey. RETAIN KY also had no impact on enrollees' self-reported pain or receipt of prescriptions for opioid pain relievers. In both the treatment and control groups, about 47 percent of enrollees said that pain interfered with work outside of the home and housework most or all of the time; about 17 percent of enrollees received a prescription for opioid pain relievers.

Exhibit IV.4. RETAIN Kentucky's early impacts on health



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Exhibit B.2.1 for more details.

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

D. Discussion

RETAIN KY had mixed impacts on the use of services and training—outputs associated with the program model. It increased the shares of treatment enrollees who worked with a care or service coordinator and used any employment-related support services but had no impact on the shares who talked with a healthcare provider about work, participated in job-related training, or attended school or took classes. Further, the program's positive impacts on the use of care or service coordination and employment-related support services were smaller than those of the other four RETAIN programs.

One factor that could explain the limited number and small size of RETAIN KY's impacts is that large shares of the control group used SAW/RTW services and training, limiting the contrast between the treatment and control groups and leaving less room for the program to have an impact. RETAIN KY delivered a limited set of services on an expedited basis to the control group, including the development of an SAW/RTW plan. Consistent with this approach, the share of control group enrollees who self-reported receiving care or service coordination was substantially higher in RETAIN KY (17 percent) than other programs (no more than 7 percent). In addition, RETAIN KY both relied heavily on referrals from OVR for recruitment of enrollees and provided the control group with information about how to self-refer to OVR. As a result, many control group members might already have used employment-related services and training from OVR at enrollment or gone on to use such services and training after enrollment. The limited contrast also could have resulted from the demographic characteristics of RETAIN KY's enrollees. Compared to the other RETAIN programs for which earnings data were available, RETAIN KY's enrollees had the lowest earnings in the quarter before enrollment. It is possible that control group members might have used employment and other services from means-tested programs such as Temporary Assistance for

Needy Families (TANF). In addition, if care or service coordination is a necessary precursor to receiving other types of SAW/RTW services, then the relatively low use of care or service coordination among RETAIN KY treatment enrollees might have led to muted impacts on the other types of services examined. The share of treatment enrollees who self-reported working with a care or service coordinator (29 percent) was smaller in RETAIN KY than most other RETAIN programs.

Additionally, respondents' interpretation of the survey question and the timing of the survey might have contributed to muted impacts on service use. First, treatment group members might not have interpreted relatively short interactions with RTW coordinators as care or service coordination, possibly explaining the discrepancy between survey data showing that 30 percent of RETAIN KY treatment enrollees reported working with a care or service coordinator in the two months before the survey, and program data showing that at least three-quarters of them worked with an RTW coordinator to develop an RTW plan (Keith et al. 2024). Second, treatment enrollees might not have recalled or counted the services they used from KY RETAIN when completing the survey because the services occurred before the survey's two-month lookback window. Program data through June 2023 indicate that treatment enrollees developed their RTW plans an average of six days after enrollment (Keith et al. 2024). Many enrollees completed the survey substantially later, with a median time between enrollment and survey completion of 11.3 weeks.

With one exception, RETAIN KY had no impact on treatment enrollees' labor force attachment or employment characteristics. The program substantially increased the share of treatment enrollees who worked and received advice about modifying their job or workplace. RTW coordinators referred treatment enrollees who experienced a loss of functioning to an assistive technology specialist, who facilitated feasible work accommodations (Keith et al. 2024). Given this report's focus on the period immediately after enrollment, the absence of impacts on labor force attachment and employment characteristics is not surprising. The final evaluation report will assess the extent to which RETAIN KY improved enrollees' longer-term employment outcomes one year after enrollment.

There are several potential explanations for why RETAIN KY did not have any impacts on health outcomes. First, the long average duration between the onset or exacerbation of the medical condition and RETAIN enrollment (nearly nine months) and the small share of enrollees whose injury or illness was new (18 percent) suggest that most enrollees had chronic conditions that might have been harder to treat and less likely to improve. Second, in both program design and implementation, RETAIN KY had weaker ties to medical providers than other RETAIN programs (for example, unlike the other RETAIN programs, it did not rely on medical systems as a primary source of referral), and RTW coordinators were able to communicate with medical providers of fewer than one-quarter of enrollees. Third, RTW coordinators struggled to secure permission from treatment enrollees to communicate with medical providers; such communication did not occur for most enrollees. These factors might have limited the potential for RETAIN KY to substantially impact health outcomes in the short term.

V. Minnesota RETAIN

Key findings from the early impact analysis

- There were no differences in the characteristics of treatment and control enrollees at the time of enrollment, on average.
- MN RETAIN increased the shares of enrollees in the treatment group who used care coordination, employment services, and job-related training, as well as the share who had talked with their healthcare provider about how their injury or illness affected their ability to work.
- MN RETAIN did not affect enrollees' labor force attachment at the time of the early follow-up survey. However, treatment enrollees were less likely to be working and more likely to be planning to return to work compared with control group enrollees.
- Treatment and control enrollees had similar self-reported health outcomes at the time of the survey. ◢

A. Program overview

Below we provide an overview of the Minnesota RETAIN (MN RETAIN) program design and implementation as documented through Mathematica's independent evaluation. We draw on key findings from Mathematica's process analysis (Keith et al. 2024), which covered program implementation and service delivery through June 2023, midway through the program's operation period under the Phase 2 grant. The program made changes to some implementation components over time, following a continuous quality improvement approach.

1. Program design

The Minnesota Department of Employment and Economic Development was the lead agency for MN RETAIN. The department worked closely with a lead healthcare partner, the Mayo Clinic; a lead workforce partner, Workforce Development, Inc.; and other partner organizations to implement MN RETAIN. MN RETAIN's service area included the entire state of Minnesota, which has 87 counties. The program aimed to serve adults age 18 and older who were currently in the workforce and had experienced the onset or worsening of a work-related or non-work-related injury or illness that affected their employment. Program eligibility criteria excluded people who had been out of the workforce for more than six months.

MN RETAIN's program model included the following:

- Training and incentives for medical providers to use best practices to support stay at work and return to work for their patients
- RTW coordination services that involved working with an enrollee to develop an employment plan and an RTW plan; meeting regularly with the treatment enrollee; and communicating with the enrollee's medical provider, employer, and others as needed to coordinate the enrollee's staying at or returning to work
- Other services, including supporting workplace accommodations and referrals to retraining or rehabilitation services

MN RETAIN could provide treatment enrollees services for up to six months.

The evaluation of MN RETAIN used an individual random assignment design. We randomly assigned enrollees to the treatment or control group; they received a $100 incentive payment for enrolling. Enrollees in the treatment group could access MN RETAIN services; those in the control group could not access program services but received a list of resources available to the general public. In total, MN RETAIN enrolled 3,199 people in the RETAIN evaluation from October 2021 to May 2024.

2. Program implementation

MN RETAIN met its enrollment target for Phase 2, primarily relying on the Mayo Clinic and four other healthcare partners as recruitment sources. The program received referrals from various sources, including the Mayo Clinic's EMRs, medical providers, and self-referrals. Throughout the process analysis, we found that MN RETAIN recruited most enrollees by identifying and reaching out to potential enrollees from a patient registry that the Mayo Clinic maintains in its EMR system. MN RETAIN relied on the EMR system's functionality to send mass emails to tens of thousands of patients, inviting them to complete a survey to determine their eligibility for MN RETAIN. Although MN RETAIN staff conducted outreach to medical providers, employers, and the general public to increase awareness of the program and prompt referrals, these outreach efforts generated few enrollments relative to their main method of recruitment.

On receiving a referral for MN RETAIN, recruitment staff reached out to potentially eligible people to confirm their eligibility and discuss the program. If they were eligible and interested in enrolling, the recruitment staff obtained their informed consent and completed the enrollment and random assignment processes. Enrollees were randomly assigned with equal probability to either the treatment or control group.

In general, MN RETAIN was able to deliver the services specified in its program model. The program leaders, staff, and partners we interviewed in May 2023 noted that they initially experienced challenges getting medical providers to complete the MN RETAIN training. They described overcoming these challenges with strategies such as individualized emails, in-person meetings, and reducing the length of the training.

Central to the RETAIN program model is the role of the RTW coordinator in prompting communication between the parties involved in a treatment enrollee's RTW plan, including the medical provider, employer, and workforce professional, to coordinate necessary services. Communication between RTW coordinators and medical providers improved over time as medical providers developed greater recognition of the value of the RTW coordinator role, trust in the RTW coordinators, and awareness of the MN RETAIN program. Yet employer engagement with MN RETAIN remained challenging. MN RETAIN staff needed permission from enrollees before they could contact employers, but enrollees were hesitant to provide permission for fear that their employer would react negatively to the RTW coordinator's recommendations for work accommodations.

Program data through June 2023 showed that all treatment enrollees used some MN RETAIN services after enrollment. Nearly all treatment enrollees (98 percent) established an RTW plan and did so quickly after enrollment (the average time elapsed was 1.4 days). RTW coordination services included regular communication between an RTW coordinator and the enrollee to support the enrollee's return to work, with RTW coordinators monitoring the treatment enrollee's progress through weekly or biweekly contacts

up to one month after they returned to work. For nearly all treatment enrollees (98 percent), the RTW coordinator communicated with the medical provider at least once, and for most treatment enrollees (70 percent), they also communicated with the workforce professional. It was less common for the RTW coordinator to communicate with the employer at least once (this occurred with 41 percent of treatment enrollees.) When treatment enrollees permitted, RTW coordinators reached out to their employers about supporting workplace-based interventions. When employers declined to engage with the RTW coordinator, the coordinator supported accommodations for the enrollee without the employer's involvement, for example helping them navigate paperwork related to the Americans with Disabilities Act accommodations.

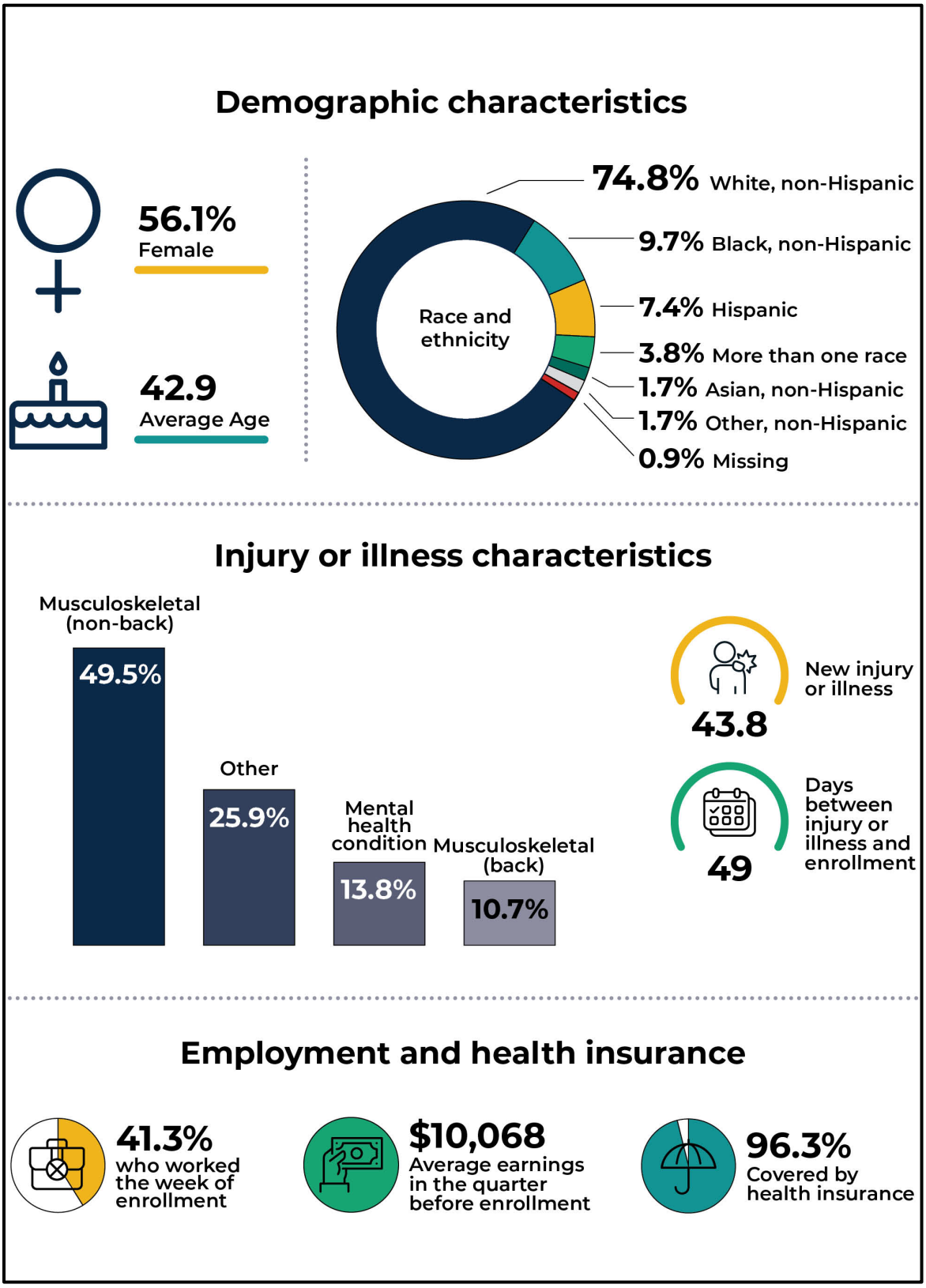
RTW coordinators made a referral for employment or financial support services if they identified a treatment enrollee as needing those services. Employment counselors at the lead workforce partner (Workforce Development, Inc.) and the subrecipient workforce partner (Goodwill-Easter Seals of Minnesota) provided employment services, including general job search services (such as resume review and mock interviews), access to training if the enrollee wanted to transition to a different career, access to paid transitional work opportunities that aligned with the enrollee's work accommodations, and financial support services. MN RETAIN staff reported that they referred 80 to 90 percent of treatment enrollees for employment services, but program service use data show that less than 2 percent of treatment enrollees used job search services, training, and transitional work opportunities. Almost all MN RETAIN treatment enrollees used "other employment services" according to the service use data, but the nature of these services is unclear.

B. Baseline characteristics

During MN RETAIN's operation period under its Phase 2 grant, 3,199 people enrolled in the evaluation and were randomly assigned to either the treatment or control group. The analysis sample for the early impact analysis of MN RETAIN comprised 2,623 randomly assigned enrollees who completed the early follow-up survey that Mathematica conducted. The median time between enrollment and survey completion was 11 weeks, with nearly all respondents completing the survey during the six months in which they were eligible for services. Here we describe the baseline characteristics of this sample and note any significant differences between the treatment and control groups. See Farid et al. (2023) for a comparison between MN RETAIN enrollees and comparison populations in the state (all workers and applicants for SSDI and SSI).

Demographic characteristics. Slightly more than half of the MN RETAIN enrollees were female (56 percent), and the average age of enrollees was 43 (Exhibit V.1). Most enrollees were non-Hispanic White (75 percent), followed by non-Hispanic Black (10 percent), Hispanic (8 percent), more than one race (4 percent), non-Hispanic Asian (2 percent), and non-Hispanic other race (2 percent). Almost all enrollees cited English as their preferred language (98 percent) and had a high school diploma or further education (97 percent). The most frequently reported educational attainment was a high school diploma, GED, or certificate of completion (37 percent). About 34 percent of enrollees had a four-year college or postgraduate degree, 26 percent had an occupational certificate or license or two-year college degree, and 3 percent had not completed high school.

Exhibit V.1. Minnesota RETAIN: Baseline characteristics of early follow-up survey respondents



Characteristics of primary injury or illness. The most common type of injury or illness among MN RETAIN enrollees was musculoskeletal, with about 11 and 50 percent of enrollees having a back or non-back musculoskeletal injury or illness, respectively, as their primary diagnosis. About 14 percent of enrollees had a mental health diagnosis, and about 26 percent had an injury or illness that was not musculoskeletal or a mental health condition. The primary injury or illness was a new condition rather than a worsening of an existing condition for a little less than half of enrollees (44 percent). About four in 10 enrollees reported their condition was a result of an accident or injury rather than an illness or a chronic condition. For most enrollees, their primary illness or injury was not work related; just 14 percent reported that it was caused, at least in part, by work-related factors. Similarly, few enrollees (5 percent) reported that their injury or illness was part of a workers' compensation claim. Most enrollees had enrolled in MN RETAIN shortly after experiencing the onset or worsening of their primary illness or injury; the average time between the onset or worsening of injury or illness and enrollment was 49 days.

Recent work history. Most enrollees (85 percent) reported that they were employed at the time of enrollment (either self-employed or employed at a private company, nonprofit, or government), but only about 41 percent had worked during the week before enrollment, likely because of the onset or worsening of their injury or illness. About one-third of enrollees had not worked for at least one month before enrollment. Before their injury or illness, enrollees usually worked 38 hours per week on average. Enrollees varied considerably in their tenure at their current or most recent job: a large share (33 percent) had been at their job for more than five years, but a sizable share (20 percent) had worked at their job for less than six months. Enrollees most frequently worked in management, professional, or related occupations (37 percent) or in service occupations (32 percent).

Economic well-being. Wage records indicated that enrollees earned $10,044 on average during the quarter before enrollment, and most enrollees (81 percent) reported that during the past 12 months, they had worked at a job that paid at least $1,000 per month before taxes and deductions. At enrollment, relatively few enrollees reported receiving income from sources other than earnings. Only 2 percent received employer-provided or other private disability insurance, and 1 percent received workers' compensation. Less than 1 percent received SSDI or veterans benefits, and 13 percent reported income from other public programs. Consistent with RETAIN's goal to intervene before people apply for federal disability benefits, less than 1 percent reported that they had applied for or received SSI or SSDI in the three years before enrolling in MN RETAIN. Almost all enrollees (96 percent) had health insurance coverage at the time of enrollment.

Differences between the treatment and control groups. We compared the treatment and control groups across more than 20 characteristics measured at the time of enrollment. Enrollees in the treatment and control groups had similar characteristics on average, as expected from the individual random assignment. Although the treatment and control groups appeared to be balanced on all measurable baseline characteristics, we included a core set of covariates in the impact models for all states to increase the precision of the estimates.

C. Early impacts on enrollees' service use, employment, and health outcomes

The findings in this section show whether MN RETAIN led to changes in enrollees' use of SAW/RTW services, employment, and health, based on data from the early follow-up survey. The findings are based on Mathematica's independent evaluation of the program.

MN RETAIN increased the share of enrollees in the treatment group who used services and training in the two months before the early follow-up survey relative to the control group. At the time of the early follow-up survey, MN RETAIN had no impact on the share of enrollees connected to an employer (whether working or on medical leave). Compared to the control group, MN RETAIN decreased the share of treatment enrollees working but increased the share of enrollees who were not working but planned to return to work within 90 days. MN RETAIN had no impact on enrollees' health or functioning at the time of the early follow-up survey.

We also estimated impacts of RETAIN on service and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis. MN RETAIN had differential impacts on one outcome by sex (work with a care or service coordinator) and another outcome by primary diagnosis (use of employment services). The final impact report will include subgroup analyses of impacts on employment outcomes.

How we estimated the impacts of MN RETAIN

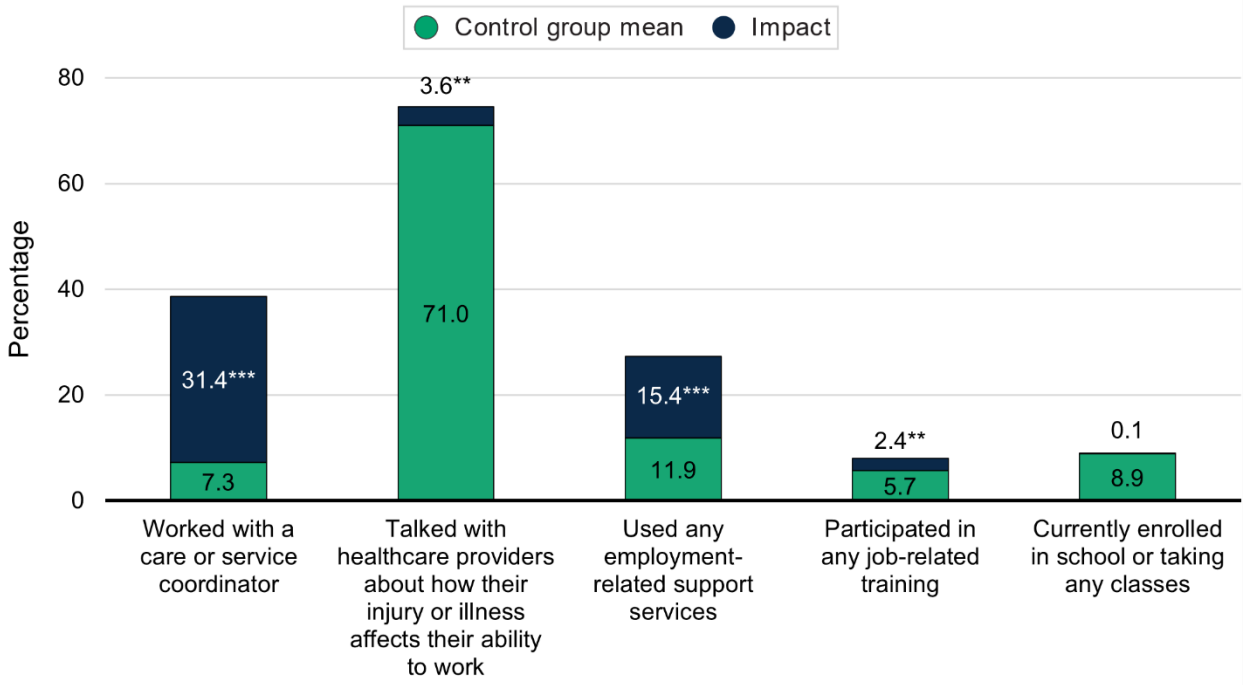
We estimated the program's impacts by comparing the outcomes of enrollees in the treatment group, who could access MN RETAIN services, to the outcomes of enrollees in the control group, who could not. We describe the program's impact on an outcome in terms of how the average outcome of treatment enrollees differed from that of control enrollees. ◢

MN RETAIN increased the share of enrollees who used SAW/RTW services. About 7 percent of control group enrollees reported that they had worked with a care or service coordinator during the two months before the survey; MN RETAIN increased this share by 32 percentage points (a 465 percent increase relative to the control group) (Exhibit V.2 and Appendix Exhibit B.3.1). Most treatment enrollees who worked with a care or service coordinator (85 percent) reported that they found these services to be somewhat or very useful (Appendix Exhibit B.3.2). Most control group enrollees (71 percent) had talked with a healthcare provider about how their injury or illness affected their ability to work; MN RETAIN increased this share by 4 percentage points (or 6 percent relative to the control group). Treatment enrollees who had conversations with providers about work reported high levels of satisfaction with these provider services, with less than 17 percent finding the conversations unhelpful (Appendix Exhibit B.3.2).

MN RETAIN also had positive impacts on enrollees' use of employment-related support services and participation in job-related training. The shares of control group enrollees who reported using these services during the two months before the survey were 12 and 6 percent, respectively. The program increased these shares by 16 and 3 percentage points, respectively. MN RETAIN had no impact on the share of enrollees who were enrolled in school or taking classes at the time of the survey, which was about 9 percent in both treatment and control groups.

MN RETAIN's impacts on use of SAW/RTW services differed by enrollees' sex and primary diagnosis. Although the program's impacts on service use did not differ by age (Appendix Exhibit B.3.3), MN RETAIN had a larger impact on the likelihood of working with a care or service coordinator among female enrollees (36 percentage points) than among male enrollees (27 percentage points) (Appendix Exhibit B.3.4). This finding might reflect that a smaller share (6 percent) of female control group enrollees worked with a care or service coordinator than did male control group enrollees (9 percent), leaving more room for the program to improve the outcome for female enrollees. It could also reflect differences between men and women in engagement with available healthcare, as has been found in past research (Thompson et al. 2016). MN RETAIN also had a larger impact on the use of employment services among enrollees with non-musculoskeletal injuries (22 percent) than among enrollees with musculoskeletal injuries (11 percent) (Appendix Exhibit B.3.5). The difference in the impact by injury might reflect differences in the need for employment services; MN RETAIN RTW coordinators made referrals only for employment services when they identified a specific need.

Exhibit V.2. Minnesota RETAIN's early impacts on use of services and training



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

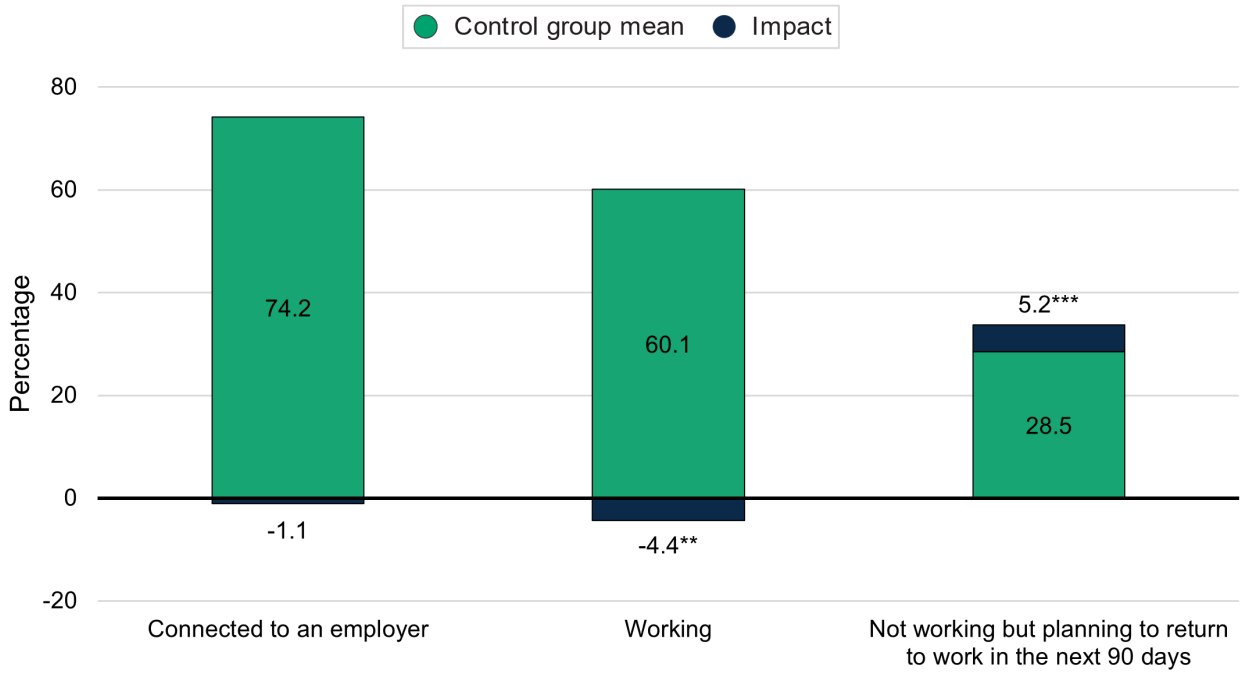
Note: See Appendix Exhibit B.3.1 for more details.

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

MN RETAIN had no impact on the likelihood that treatment enrollees were connected to an employer at the time of the early follow-up survey. In the treatment and control groups, about three in every four enrollees were connected to an employer (that is, working or on medical leave) at the time of the early follow-up survey (Exhibit V.3). More broadly, about nine in every 10 enrollees was in the labor force (that is, connected to an employer or looking for work) (Appendix Exhibit B.3.1). Although MN RETAIN did not affect these measures of labor force attachment, it reduced the share of enrollees who were working at the time of the survey by about 5 percentage points in the treatment group (a decrease

of 8 percent relative to the control group). Among treatment enrollees who were employed but still on medical leave, the most common reasons they reported for not working included their doctor not thinking they were ready to work (81 percent), their injury or illness being too severe (76 percent), and fearing that their condition would worsen if they returned to work (67 percent) (Appendix Exhibit B.3.2). In all, 28 percent of control group enrollees were not working but planning to return to work in the next 90 days; MN RETAIN increased this share by 6 percentage points among treatment enrollees. Treatment enrollees who were not employed reported many of the same concerns as those on medical leave but also reported barriers to employment such as being fired or terminated (32 percent) or laid off (26 percent). Another common reason for not working among treatment enrollees on medical leave and those not working was that the employer would not provide necessary supports, accommodations, or flexibility (27 percent of those on leave; 28 percent of those not working).

Exhibit V.3. Minnesota RETAIN's early impacts on labor force attachment and employment



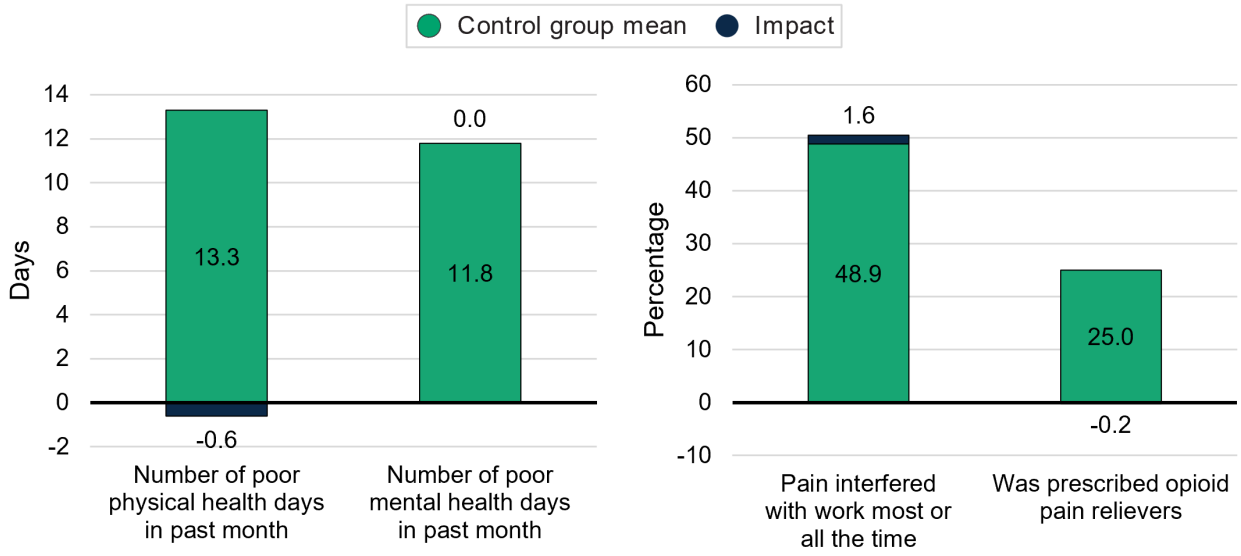
Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.3.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

We also examined supplementary labor market outcomes, including employment characteristics (Appendix Exhibit B.3.1). Consistent with the finding that MN RETAIN reduced the share of enrollees working, we found that it reduced usual hours worked, the share working for an employer who offered health insurance, and the share who were working for an employer who offered paid leave. However, MN RETAIN did not affect average weekly pay. Although MN RETAIN did not affect the share of enrollees who were working for an employer who offered a chance to return to work with needed accommodations, it increased the share of enrollees who were working and received advice about modifying their job or workplace. Specifically, although 15 percent of control group enrollees were working and received such advice, MN RETAIN increased this share by 2 percentage points (a 17 percent increase relative to the control group). Among working treatment enrollees, the most common types of accommodations

employers offered included reduced hours (43 percent), a change in job duties (40 percent), changes to the work environment (40 percent), additional breaks (39 percent), and a telecommuting arrangement (26 percent) (Appendix Exhibit B.3.2).

MN RETAIN had no impacts on measures of health at the time of the early follow-up survey. In the treatment and control groups, enrollees reported experiencing an average of about 13 and 12 days of poor physical and mental health, respectively, during the month before the survey (Exhibit V.4). Half of the enrollees said that over the past two months, pain interfered with normal work outside the home and housework most or all the time. About one-quarter of enrollees in each of the groups had been prescribed an opioid medication to manage their pain. Almost all control group enrollees (94 percent) had health insurance coverage. MN RETAIN increased the share of treatment enrollees with health insurance coverage by 1 percentage point (a 2 percent increase relative to the control group).

Exhibit V.4. Minnesota RETAIN's early impacts on health



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.3.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

D. Discussion

MN RETAIN improved several outcomes that can be considered either program services or outputs, including the use of care or service coordination. It was quite rare for control group enrollees to have used this service, with fewer than one in 10 enrollees reporting they had worked with a coordinator during the two months before the early follow-up survey. The program increased the share of treatment enrollees who used this service nearly five-fold. Despite this large positive impact, more than half of treatment enrollees reported they had not used care or service coordination in the prior two months. In contrast, according to MN RETAIN program data, 97 percent of treatment enrollees worked with an RTW coordinator to develop an RTW plan, usually within a few days of enrolling (Keith et al. 2024). One possible explanation for this difference is that treatment enrollees might not have interpreted relatively short interactions with RTW coordinators, such as developing an RTW plan, as care or service

coordination. Another possible explanation is that the development of the RTW plan (1.4 days after enrollment on average) occurred before the two-month lookback window of the survey.

The early impact findings for MN RETAIN reflect the program's design of offering SAW/RTW services to enrollees with an injury or illness who were engaged with the healthcare system. A large share of control group enrollees had talked with a healthcare provider about how their injury or illness affected their ability to work, consistent with MN RETAIN's recruitment strategy of relying heavily on referrals from healthcare partners, especially the Mayo Clinic.[16] Despite this finding, MN RETAIN increased this share among treatment enrollees. Several factors likely contributed to this positive impact. The Mayo Clinic was a highly engaged lead healthcare partner, providing expertise in occupational medicine and overseeing the recruitment, engagement, and training of medical providers. After the enrollment process, MN RETAIN RTW coordinators notified treatment enrollees' medical providers that their patients had enrolled in the MN RETAIN study. The process study findings indicate that the RTW coordinators communicated with the medical provider at least once for nearly all treatment enrollees and also coached treatment enrollees to communicate with their medical providers (Keith et al. 2024). All of these factors might have prompted and encouraged treatment enrollees and medical providers to discuss work-related topics during their interactions.

MN RETAIN also increased the share of treatment enrollees who used employment-related support services and participated in job-related training, during the two months before the survey. This finding is consistent with findings from the process study that RTW coordinators referred a treatment enrollee for employment or financial support services if they identified the enrollee as needing these services.

MN RETAIN had no impact on the share of enrollees connected to an employer at the time of the survey, but the program reduced the share of enrollees who were working at that time. MN RETAIN also increased the share of enrollees who were not working but planned to return to work in the next 90 days. One explanation for this pattern of findings is that MN RETAIN made it more likely for treatment enrollees to be on medical leave (that might or might not be job-protected or paid). As part of its program model, MN RETAIN trained RTW coordinators on topics such as the Family and Medical Leave Act (FMLA), which could equip them to help enrollees secure unpaid job-protected leave.[17] The implications of these findings for enrollees' employment in the long term are not yet known. On one hand, being on medical leave instead of at work could have negative long-term implications for enrollees, such as straining the relationship with the employer, attrition of skills, deteriorating mental health, and increasing the odds of being replaced at the workplace (in the case of leave that is not job-protected). On the other hand, medical leave could facilitate long-term labor force attachment by providing enrollees with the additional time they needed to heal from an injury or illness, identify and engage with resources that supported their long-term recovery (such as mental health counseling), and make necessary modifications to their employment plans (such as securing accommodations at their existing job or identifying a job more

[16] After sending mass emails inviting Mayo Clinic patients to complete a survey containing work-related questions, Mayo Clinic recruitment staff contacted patients who completed the survey and were potentially eligible (Keith et al. 2024). Most potential enrollees were identified because they indicated on this survey that they needed help returning to work. It is possible that some enrollees counted this initial survey as "talking to a healthcare provider about how their injury or illness impacted their ability to work."

[17] MN RETAIN described these training plans in their Phase 2 application.

compatible with their injury or illness). The final evaluation report will shed light on the extent to which MN RETAIN improved enrollees' longer-term employment outcomes (one year after enrollment).

MN RETAIN increased health insurance coverage rates but did not affect other measures of enrollees' self-reported health at the time of the early follow-up survey. It is notable that the program increased the share of treatment enrollees with health insurance coverage, whereas it decreased the share working for an employer that offered health insurance. This finding is likely driven by MN RETAIN's efforts to connect treatment enrollees to health insurance (mainly Medicaid) if they had none at the time of the program enrollment. The absence of impacts on other health outcomes might be because the injury or illness for most enrollees was relatively recent at the time of the survey (the average amount of time between injury or illness and enrollment was 49 days, and 8 percent actually enrolled before the onset or worsening of their condition). In addition, relative to other states in the demonstration, control group enrollees in MN RETAIN had relatively better self-reported health, thus offering less room for potential improvement. Enrollees in the treatment and control groups reported similar levels of pain and were similarly likely to have received an opioid prescription for pain management. Although MN RETAIN developed a medical provider training that included a focus on avoiding unnecessary or prolonged use of opioids in pain management, medical providers who completed the training could have treated patients enrolled in either the treatment or control group.

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VI. Ohio RETAIN

Key findings from the early impact analysis

- Enrollees in the treatment and control groups had similar characteristics at the time of enrollment. We identified two small differences: treatment enrollees had a smaller gap in time between injury or illness and enrollment and a smaller share of them had applied for or received SSDI or SSI in the past three years.
- OH RETAIN increased the shares of enrollees who used care or service coordination and had talked with medical providers about how their injury or illness affected their ability to work.
- OH RETAIN did not affect enrollees' labor force attachment at the time of the early follow-up survey. However, treatment enrollees were less likely to be working and more likely to be planning to return to work, compared with control group enrollees.
- On average, treatment and control enrollees had similar self-reported health outcomes at the time of the survey. ◢

A. Program overview

In this section, we provide an overview of the Ohio RETAIN (OH RETAIN) program design and implementation as documented through Mathematica's independent evaluation. We draw on key findings from Mathematica's process analysis (Keith et al. 2024), which covered program implementation and service delivery through June 2023, midway through the program's operation period under the Phase 2 grant. The program made changes to some implementation components over time, following a continuous quality improvement approach.

1. Program design

The Ohio Department of Job and Family Services (ODJFS) was the lead agency for OH RETAIN. The program service area was three regions in Ohio: Youngstown (Mahoning, Columbiana, and Trumbull Counties), Toledo (Lucas County), and Cincinnati (Butler, Clermont, Hamilton, and Warren Counties). The program sought to enroll people who had experienced the onset or worsening of a non-work-related musculoskeletal, cardiovascular, mental health, behavioral health, or select neurological condition or select abdominal surgery in the past three months. In addition, potential enrollees must have been receiving care from a medical provider employed by the lead healthcare partner (Mercy Health) who had completed OH RETAIN training. OH RETAIN offered RTW coordination services to all treatment enrollees.

OH RETAIN's program model included (1) training and compensation for medical providers to use occupational medicine best practices; (2) RTW coordination services that involved working with an enrollee to develop an individualized RTW plan; meeting regularly with the treatment enrollee; and communicating with the enrollee's medical provider, employer, and others as needed to coordinate the enrollee's staying at or returning to work; and (3) other services that included supporting workplace accommodations and referrals to retraining or rehabilitation services.

The evaluation of OH RETAIN used an individual random assignment design. We randomly assigned enrollees to either the treatment or control group; they received a $100 incentive payment for enrolling. Enrollees in the treatment group could access OH RETAIN services, whereas those in the control group

could not access program services but received a list of resources available to the general public. In total, OH RETAIN enrolled 4,525 people in the RETAIN evaluation between January 2022 and May 2024.

2. Program implementation

OH RETAIN met and then exceeded its enrollment target, using a recruitment approach that relied on EMR reports that Mercy Health, the lead healthcare partner, generated. Staff reviewed patients' age, medical condition, and timing of condition onset or worsening of condition relative to the eligibility criteria. About halfway through the enrollment period, OH RETAIN expanded its eligibility criteria to include more medical conditions, which increased the number of patients identified through EMR reports. Ultimately, nurses identified 95 percent of referrals by reviewing the EMR reports. OH RETAIN also changed its employer recruitment strategies, which resulted in more referrals. To promote recruitment and enrollment, program leaders planned local events and connected with community leaders. They also translated recruitment and enrollment materials into multiple languages and provided interpreter services. Despite these efforts, few enrollees (less than 1 percent) reported a preferred language other than English.

OH RETAIN offered training to medical providers on program services and occupational medicine best practices. Mercy Health required its medical providers to complete OH RETAIN online trainings after they enrolled in RETAIN and compensated them for doing so. Program staff also followed up with providers they identified as having patients who were eligible for OH RETAIN to engage those providers in training; once providers pledged to implement occupational medicine best practices and completed training, their patients could enroll in the program. The program leaders, staff, and partners we interviewed in May 2023 noted some challenges with having medical providers complete the training on occupational medicine best practices. They described addressing these challenges by conducting regular follow-ups with these providers. They noted that the monetary compensation appeared to do little to encourage providers to complete the training. In addition, the payment model under which some providers operated did not allow them to receive the compensation. The potential benefit to their patients appeared to be a stronger motivator for providers to participate in OH RETAIN. Medical providers who completed the training could treat patients enrolled in both the treatment and control groups.

Upon receiving a referral for OH RETAIN, recruitment staff reached out to potentially eligible patients to confirm their eligibility and interest in enrolling in the program. If the person was eligible and interested in enrolling, the recruitment staff obtained their informed consent and completed the enrollment and random assignment processes. As part of this enrollment process, the person was required to provide consent for their RTW coordinator to communicate with their employer and medical provider. Enrollees were randomly assigned with equal probability to either the treatment or control group.

In general, OH RETAIN was able to deliver the services specified in its program model. Program data through June 2023 show that all treatment enrollees used some OH RETAIN services after enrollment. About nine in 10 enrollees had used any services, and the same share had established an RTW plan. Among those with an RTW plan, the plan was developed within three weeks of enrollment on average. RTW coordination services involved regular contact between the RTW coordinators and enrollees to support enrollees in achieving goals documented in their RTW plan and assisting them with health-related social needs through referrals to appropriate social service providers within Mercy Health. RTW

coordinators referred few enrollees (10 percent) to services beyond OH RETAIN that they could use after the program's six-month service eligibility period if they had not yet returned to work.

For all treatment enrollees, the RTW coordinator communicated with medical providers at least once, because all providers worked for the lead healthcare partner and enrollees provided consent to this communication before enrolling in OH RETAIN. For most treatment enrollees (71 percent), the RTW coordinator communicated with the employer at least once.

RTW coordinators facilitated non-physical workplace-based interventions; program service use data through June 2023 indicated that almost one-third of enrollees used a workplace intervention service, which was likely facilitated by RTW coordinators' communication with employers. Few or no enrollees used other workplace-based services, such as on-site job analysis and ergonomic assessments, as measured in the OH RETAIN service use data. OH RETAIN might have considered these services as employer engagement and therefore not tracked them at the employee level.

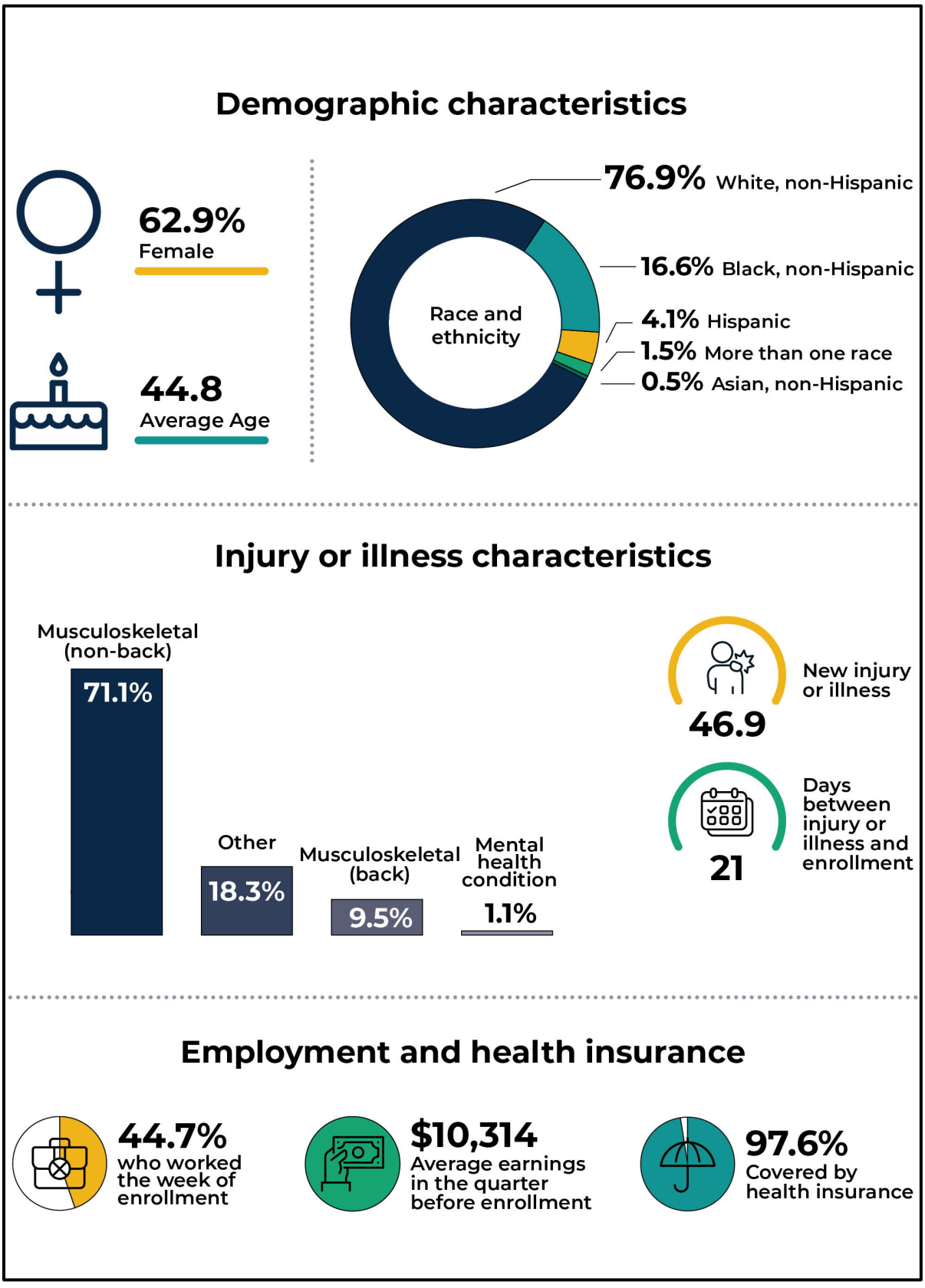
RTW coordinators referred treatment enrollees to local workforce development boards for retraining and rehabilitation services when enrollees could not return to their previous jobs. Fewer than 1 percent of treatment enrollees used job search services, training services, and transitional work opportunities. Program leaders reported that these data might underreport enrollees' use of retraining and rehabilitation services due to incompatibility challenges with a workforce case management system implemented in April 2022. In addition, program staff noted that many enrollees were ineligible for the employment services to which they were referred. For example, program staff reported that some enrollees did not meet the income-eligibility criteria that were required for services they could be referred to. For 9 percent of treatment enrollees, the RTW coordinator communicated with a workforce professional.

B. Baseline characteristics

During OH RETAIN's operation period under the Phase 2 grants, 4,525 people enrolled in the evaluation and were randomly assigned to either the treatment or control group. The analysis sample for the program's early impact analysis comprised 3,732 enrollees who completed the early follow-up survey that Mathematica conducted. The median time between enrollment and survey completion was 11 weeks, with nearly all respondents completing the survey during the six months when they were eligible for OH RETAIN services. In this section, we describe the characteristics of this sample at the time of enrollment in RETAIN and note any significant differences between the treatment and control groups. See Farid et al. (2023) for a comparison between OH RETAIN enrollees and comparison populations in the state (all workers and applicants for SSDI and SSI).

Demographic characteristics. Almost two-thirds of OH RETAIN enrollees were female (63 percent), and the average age of enrollees was 45 (Exhibit VI.1). Most enrollees were non-Hispanic White (77 percent), followed by non-Hispanic Black (17 percent), and Hispanic (4 percent). All but 0.4 percent of enrollees cited English as their preferred language. The most frequently reported educational attainment was a high school diploma, GED, or certificate of completion (38 percent). About 32 percent of enrollees had an occupational certificate or license or a two-year college degree, 26 percent had a four-year college or postgraduate degree, and 4 percent had not completed high school.

Exhibit VI.1. Ohio RETAIN: Baseline characteristics of early follow-up survey respondents



Characteristics of primary injury or illness. Musculoskeletal injuries or illnesses were the most common type of injury or illness among OH RETAIN enrollees, with 10 and 71 percent of enrollees having a back or non-back musculoskeletal injury or illness, respectively. Only 1 percent of enrollees had a mental health condition, and about 18 percent had an injury or illness that was not musculoskeletal or a mental health condition. A little less than half of enrollees (47 percent) reported that their injury or illness was new rather than a worsening of an existing condition. Almost six in 10 enrollees reported that their condition was a result of an accident or injury rather than an illness or a chronic condition. For the majority of enrollees, their primary illness or injury was not work related; just 4 percent reported that it was caused, at least in part, by work-related factors. No enrollees reported that their injury or illness was part of a workers' compensation claim, consistent with OH RETAIN's eligibility criteria excluding such cases. Most enrollees had enrolled in OH RETAIN shortly after experiencing the onset or worsening of their primary illness or injury; the average time between injury or illness and enrollment was about three weeks. The program's use of EMRs for identifying potential enrollees likely enabled the speed of recruitment after onset or exacerbation of injury or illness.

Recent work history. Almost nine in 10 enrollees reported that they were employed at the time of enrollment. However, less than half (45 percent) of them had worked during the week before enrollment, likely due to the onset or worsening of their injury or illness. About one-fifth of enrollees had not worked during the month before enrollment. Before their injury or illness, enrollees usually worked 39 hours per week on average. Almost six in 10 enrollees had worked at their current or most recent job for more than two years. However, a notable share (16 percent) had worked at their job for fewer than six months. Enrollees most frequently worked in service occupations (39 percent) or in management, professional, or related occupations (30 percent).

Economic well-being. Wage records indicated that enrollees earned $10,314 on average during the quarter before enrollment, and most enrollees (82 percent) reported that during the past 12 months, they had worked at a job that paid at least $1,000 a month. At enrollment, a sizable share of enrollees (25 percent) received employer-provided or other private disability insurance. Few enrollees (less than 1 percent) received income at enrollment from each of the following sources: SSDI or SSI, veterans benefits, workers' compensation, and income from other public programs. Consistent with RETAIN's aim to intervene before individuals apply for federal disability benefits, only about 1 percent of enrollees had applied for or received SSI or SSDI during the three years before enrolling in OH RETAIN. Almost all enrollees (98 percent) were covered by health insurance at the time of their enrollment.

Differences between the treatment and control groups. We compared the treatment and control groups across more than 20 characteristics measured at the time of enrollment. Enrollees in the treatment and control groups had similar characteristics on average—as expected, given the random assignment study design. We found two statistically significant differences. The treatment group had a slightly smaller gap in time between injury or illness and enrollment (20 days, compared with 23 days among the control group) and were less likely to have applied for or received SSDI or SSI during the past three years (the share was 0.6 percent in the treatment group and 1.2 percent in the control group). To obtain unbiased estimates of program impacts, we accounted for the difference in the time between injury or illness and enrollment, and in the share of enrollees reporting having applied for or received SSA disability benefits.

C. Early impacts on enrollees' service use, employment, and health outcomes

In this section, we discuss OH RETAIN's early impacts on enrollees' use of SAW/RTW services, employment, and health, based on data from the early follow-up survey. The findings are based on Mathematica's independent evaluation of the program.

OH RETAIN increased enrollees' use of SAW/RTW services during the two months before the early follow-up survey. The share of enrollees who were working at the time of the survey was lower among treatment than control enrollees. However, the share not working at enrollment but planning to return to work within the next 90 days was larger among treatment enrollees. The program did not affect enrollees' health at the time of the early follow-up survey.

We also estimated impacts of RETAIN on service use and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis. OH RETAIN did not differentially affect any service use and training outcomes by subgroup. The final impact report will include subgroup analyses of impacts on employment outcomes.

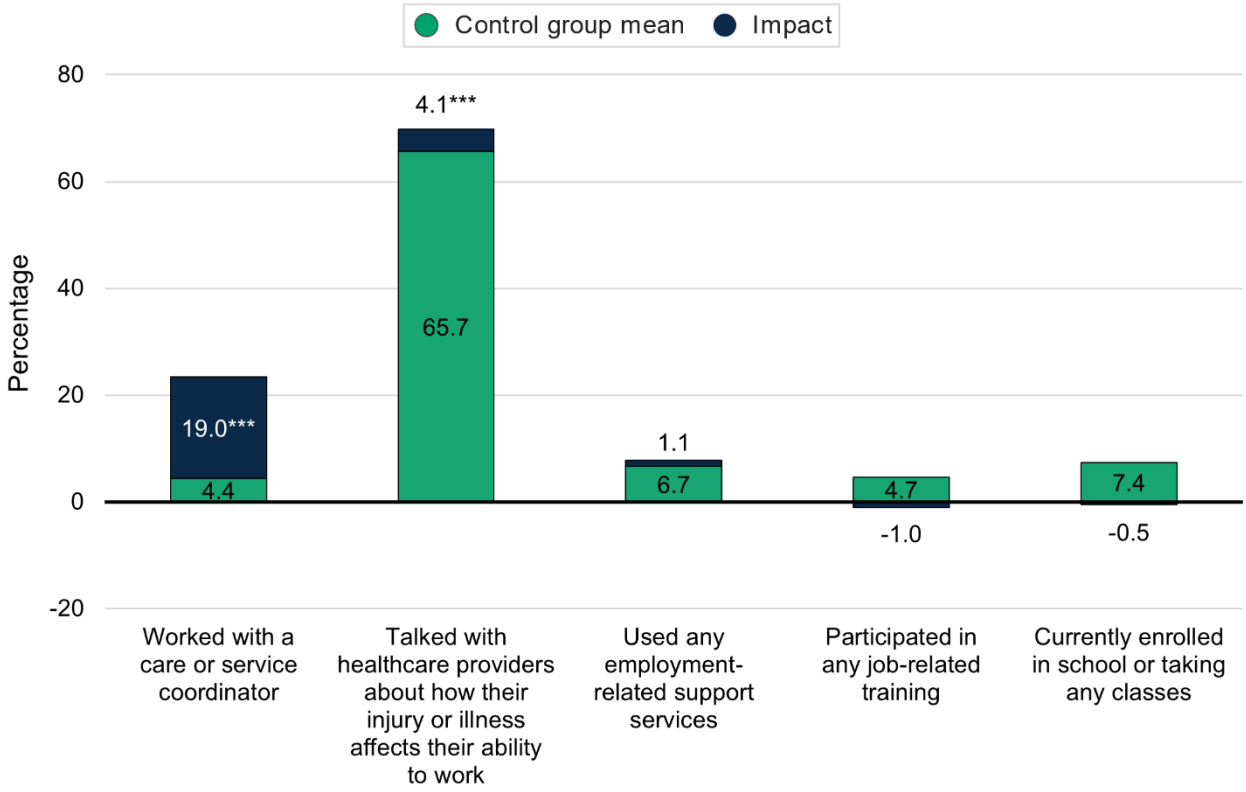
How we estimated the impacts of OH RETAIN

We estimated the program's impacts by comparing the outcomes of enrollees in the treatment group, who could access OH RETAIN services, to the outcomes of enrollees in the control group, who could not. We describe the program's impact on an outcome in terms of how the average outcome of treatment enrollees differed from that of control enrollees. ◢

OH RETAIN increased the share of enrollees who used SAW/RTW services. About 4 percent of control group enrollees reported that they had worked with a care or service coordinator during the two months before the early follow-up survey; OH RETAIN increased this share by 19 percentage points (an increase of 444 percent relative to the control group) (Exhibit VI.2 and Appendix Exhibit B.4.1). Almost nine in 10 treatment enrollees who worked with a care or service coordinator reported that they found these services to be very or somewhat useful (Appendix Exhibit B.4.2). During the two months before the survey, about two-thirds of control group enrollees had talked with a healthcare provider about how their injury or illness affected their ability to work, and OH RETAIN increased this share by 4 percentage points (an increase of 6 percent relative to the control group). Treatment enrollees who had such conversations with their medical providers reported high levels of satisfaction with these services, with more than nine in 10 enrollees reporting that the services were extremely or somewhat helpful.

OH RETAIN had no impacts on enrollees' use of employment-related support services and participation in job-related training. In the control group, about 7 and 5 percent of enrollees used these two types of services, respectively, during the two months before the survey. OH RETAIN also had no impact on the share of enrollees enrolled in school or taking classes at the time of the survey, which was about 7 percent in both the treatment and control groups.

Exhibit VI.2. Ohio RETAIN's early impacts on use of services and training



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.4.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

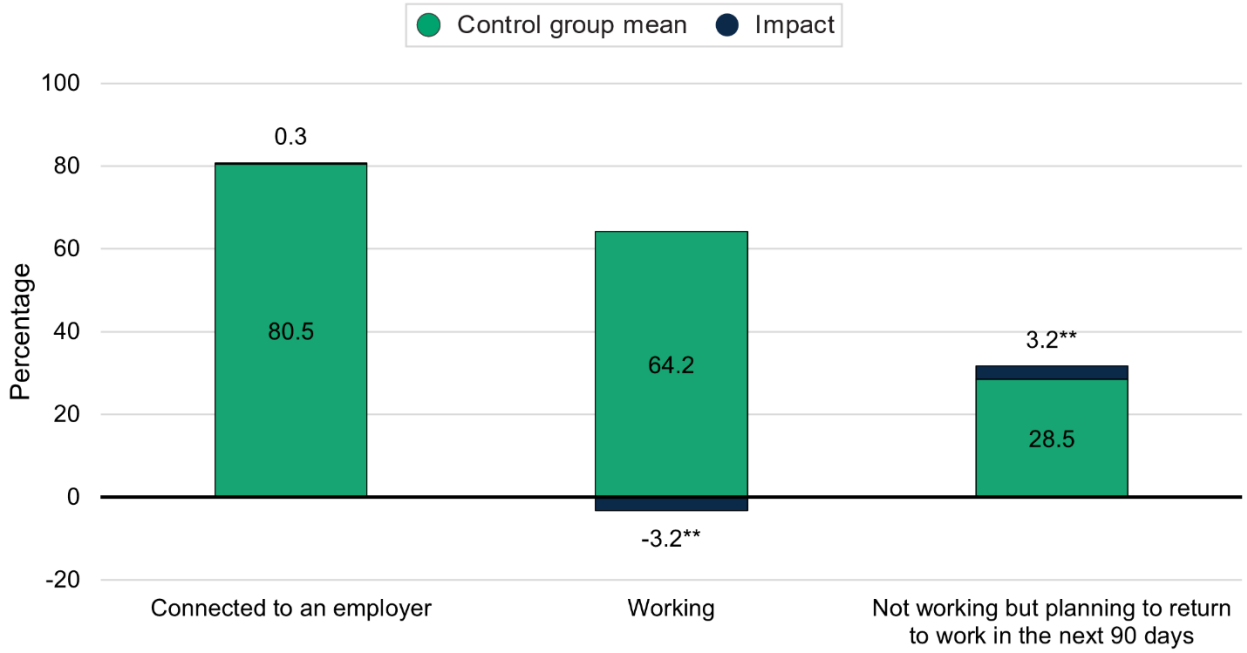
There were no differences in OH RETAIN's impacts on service use by age, sex, or primary diagnosis. We estimated impacts of RETAIN on service use and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis (Appendix Exhibits B.4.3–B.4.5). OH RETAIN had no differential impacts on any service use and training outcomes by these subgroups.

OH RETAIN had no impact on enrollees' labor force attachment at the time of the early follow-up survey. In both the treatment and control groups, about four in every five enrollees were connected to an employer (that is, either working or on medical leave) at the time of the survey (Exhibit VI.3 and Appendix Exhibit B.4.1). Further, in both groups, nine of every 10 enrollees were in the labor force; that is, either connected to an employer or looking for work. Treatment enrollees were less likely than control group enrollees to be working at the time of the survey but were more likely to be planning to return to work.

About 64 percent of control group enrollees were working at the time of the early follow-up survey; OH RETAIN reduced this share by about 3 percentage points among treatment enrollees (a 5 percent decrease relative to the control group). Consistent with this finding, OH RETAIN reduced the average number of hours worked per week and the average weekly pay among treatment enrollees. Treatment enrollees worked about two hours fewer and earned $43 less per week on average compared with the control group, who worked 25 hours and earned $663 per week on average. OH RETAIN also reduced the

share of enrollees who worked for an employer that offered paid leave by 3 percentage points. This finding likely is also driven, at least in part, by the reduction in the share of treatment enrollees who were working.

Exhibit VI.3. Ohio RETAIN's early impacts on labor force attachment and employment



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.4.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

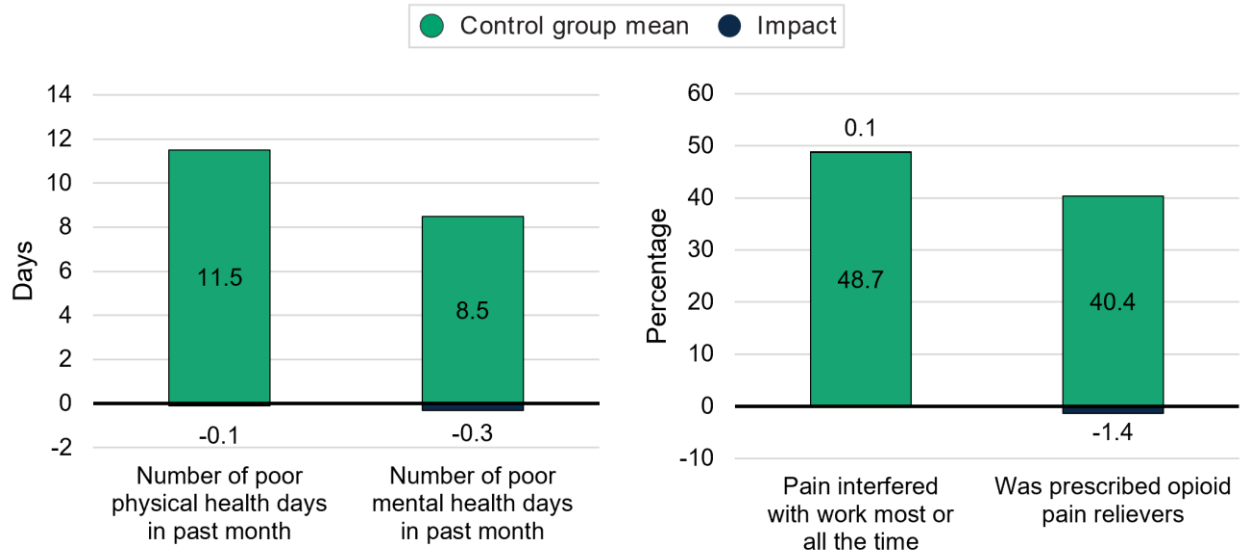
The share of enrollees working and whose employer offered a chance to return to work with needed accommodations was similar for the treatment and control groups (about 34 percent). However, OH RETAIN increased the share of treatment enrollees who were working and received advice about modifying their job or workplace by 2 percentage points, a 17 percent increase relative to the control group. Notably, OH RETAIN increased this share despite reducing the share of enrollees who were working. Among treatment enrollees who were working, the most common types of accommodations employers offered included changes to the work environment (38 percent), a change in job duties (35 percent), additional breaks from work (35 percent), reduced work hours or work week (32 percent), and a telecommuting arrangement (26 percent) (Appendix Exhibit B.4.2).

At the time of the early follow-up survey, about 29 percent of control group enrollees were not working but planning to return to work in the next 90 days. OH RETAIN increased this share by 3 percentage points (an 11 percent increase relative to the control group). This finding could be driven in part by the increase in the share of treatment enrollees who were not working but on medical leave. Among treatment enrollees who were employed but on medical leave, the most common reasons they reported for not working included their doctor not thinking they were ready to work (86 percent), their injury or illness being too severe (68 percent), and fearing their condition would worsen if they returned to work (64 percent) (Appendix Exhibit B.4.2). Treatment enrollees who were not employed reported many of the

same concerns but also reported barriers to employment, such as being fired or terminated (19 percent) or laid off (18 percent). Another common reason reported for not working among treatment enrollees on medical leave and those not working was that the employer would not provide needed support, accommodation, or flexibility (26 percent of those on leave; 23 percent of those not working). Roughly one-fifth of enrollees on medical leave or who were not employed reported a reason not listed for why they were not working (for example, caregiving responsibilities).

OH RETAIN had no impact on self-reported health outcomes at the time of the early follow-up survey. At the time of the early follow-up survey, 37 percent of enrollees in both groups reported that their health was very good or excellent (Exhibit VI.4). On average, enrollees reported experiencing about 12 days of poor physical health and nine days of poor mental health during the month before the survey. In both the treatment and control groups, about half of the enrollees indicated that pain interfered with work most or all the time, with the average reported pain score being 4 on a scale of 0–10 (with 0 being no pain and 10 being the worst pain imaginable). OH RETAIN had no impact on the likelihood of being prescribed an opioid medication; about four in 10 enrollees in both the treatment and control groups had been prescribed an opioid medication to manage their pain. OH RETAIN also had no statistically significant effect on enrollees' likelihood of being covered by health insurance. Both the treatment and control enrollees had high rates of health insurance coverage (about 97 percent)—the highest share across all the RETAIN states. The high insurance coverage rate may be due to OH RETAIN's use of EMR data to identify potential enrollees; those with health insurance coverage may be more likely to seek medical care for their conditions, especially through Mercy Health, and thus be identified by OH RETAIN as a potential enrollee.

Exhibit VI.4. Ohio RETAIN's early impacts on health



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Exhibit B.4.1 for more details.

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

D. Discussion

OH RETAIN increased the likelihood that enrollees used care or service coordination and had interactions with healthcare providers about how enrollees' injury or illness affected their ability to work. It was rare for the control group to have used care or service coordination; less than 5 percent reported having worked with a care or service coordinator two months after enrolling in OH RETAIN. The program increased this share more than four-fold among treatment enrollees. Despite this large effect, three-quarters of treatment enrollees reported that they had not used care or service coordination in the two months before the survey. There are a few possible explanations for this finding. First, treatment enrollees may not have interpreted relatively short interactions with RTW coordinators as care and service coordination, which would explain why survey data indicate low shares receiving service coordination; in contrast, program data showed that nine in 10 enrollees created an RTW plan with their RTW coordinator, and on average within three weeks of enrollment. Another explanation could be rooted in timing. OH RETAIN was quick to enroll people and establish an RTW plan but the survey was completed substantially later, with a median time between enrollment and survey completion of 11 weeks. It is possible that enrollees did not recall or count the RETAIN services they used because they occurred before the two-month lookback window of the survey.

OH RETAIN also increased the share of enrollees who talked with their healthcare provider about how their injury or illness affected their ability to work, but this impact was small relative to the large share of control group enrollees (66 percent) who had done so. Several features of OH RETAIN's design and operations may have contributed to the high prevalence of this outcome among the control group. First, to enroll in RETAIN, a person must have had a medical provider employed by Mercy Health who had completed OH RETAIN training, and these medical providers may have applied their training to all of their patients experiencing SAW/RTW challenges (regardless of random assignment group). Second, both treatment and control enrollees in OH RETAIN may have been particularly aware of communication between their RTW coordinator and medical provider. At the recruitment stage, if a medical provider referred a patient, RETAIN staff mentioned this referral to the potential enrollee, hoping they would be more receptive to a program endorsed by their medical provider (Keith et al. 2024). In addition, to be able to enroll in OH RETAIN, enrollees had to provide consent to communication between RTW coordinators and medical providers. Knowing that an RTW coordinator might communicate with their medical providers could have made it easier for enrollees to have conversations about work-related topics with the latter.

OH RETAIN did not affect enrollees' labor force attachment (the share of enrollees who were connected to an employer or looking for work). However, it decreased the share of enrollees who were working at the time of the survey and increased the share who were not working but planning to return to work in the next 90 days. One potential explanation for this pattern of findings is that OH RETAIN made it more likely for treatment enrollees to be on medical leave rather than working at the time of the survey. OH RETAIN RTW coordinators provided treatment enrollees with information related to the FMLA.[18] Further, OH RETAIN was the only state that required consent for RTW coordinators to communicate with the enrollee's employer as a condition for enrollment into RETAIN, and RTW coordinators communicated with

[18] OH RETAIN described these plans in their Phase 2 application.

employers for more than 70 percent of enrollees.[19] Communication with RTW coordinators may have enabled employers to better understand employees' needs and be more willing to grant leave.

OH RETAIN increased the share of enrollees who were working and received advice about modifying their job or workplace compared to the control group. This increase is notable, given that OH RETAIN reduced the share of enrollees who were working at the time of the survey. This pattern of findings suggests that OH RETAIN increased the likelihood of receiving such advice among those working, which more than offset the decrease in the share of people working. As noted above, it was common for RTW coordinators to communicate with enrollees' employers, and program staff indicated that RTW coordinators' conversations with employers involved discussing if and when an enrollee planned to return to work and potential work accommodations, while avoiding the disclosure of sensitive health information. The communications may have made RTW coordinators more attuned to enrollees' workplace environment and able to provide advice on accommodations.

OH RETAIN increased the share of enrollees who were not working but planned to return to work within the next 90 days. As is the case with the other programs having this impact, the implications for enrollees' employment in the long term are ambiguous. On the one hand, being on medical leave instead of at work could negatively affect the likelihood of returning to their prior job. On the other hand, taking a break from work might aid enrollees by providing the additional time they needed for healing and securing supports that could enable them to remain in the labor force in the long term. The final impact report will indicate whether OH RETAIN improved employment outcomes one year later.

OH RETAIN did not affect measures of enrollees' self-reported health at the time of the early follow-up survey. This might be because the average amount of time between injury or illness and enrollment in OH RETAIN was only 21 days (the smallest amount of time among all the RETAIN programs). Further, a majority of enrollees had a musculoskeletal injury (about 80 percent, a substantially higher share than in the other programs). Consistent with this finding, a large share of enrollees (four in every 10) had been prescribed an opioid medication, suggesting that their condition was acute and painful. The recency and acuteness of the enrollees' injuries or illnesses could have made it unlikely that OH RETAIN services would improve enrollees' health within a few months. Further, both treatment and control enrollees had medical providers who were affiliated with Mercy Health and had completed the training on occupational medicine best practices, which might have made it less likely that significant differences would emerge at the time of the early follow-up survey.

[19] The consent requirement could have influenced those who chose to enroll in OH RETAIN by discouraging enrollment among people with less accommodating employers. However, this would have affected both the treatment and control group.

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VII. Vermont RETAIN

Key findings from the early impact analysis

- Enrollees in the treatment and control groups had similar characteristics, with a few exceptions. Compared with the control group, treatment enrollees were younger, more likely to be female, and more likely to work in a service occupation and less likely to work in a sales or office occupation.
- Vermont RETAIN increased the shares of enrollees who used SAW/RTW coordination and employment-related services.
- Vermont RETAIN did not affect enrollees' labor force attachment and employment at the time of the early follow-up survey. However, it increased the share of enrollees in the treatment group who were working and received advice about modifying their job or workplace.
- Treatment and control enrollees had similar self-reported health outcomes at the time of the survey.

A. Program overview

Here, we provide an overview of the Vermont RETAIN (VT RETAIN) program design and implementation as documented through Mathematica's independent evaluation. We draw on findings from Mathematica's process analysis (Keith et al. 2024), which covered program implementation and service delivery through June 2023, midway through the program's operation period under the Phase 2 grants. The program made changes to some implementation components over time, following a continuous quality improvement approach.

1. Program design

The Vermont Department of Labor (VDOL) was the lead agency for VT RETAIN. VDOL partnered with OneCare Vermont, the state's accountable care organization, to recruit primary care practices to participate in RETAIN and pre-screen patients for enrollment. The program service area was the entire state of Vermont, including 14 counties. VT RETAIN sought to enroll adults who were in the labor force and experienced the onset or exacerbation of an injury or illness in the past six months that limited or could limit their ability to work, and who were living or working in Vermont or willing to include Vermont in a job search. Due to the clustered random assignment design, all individuals enrolled in VT RETAIN needed to be affiliated with a primary care practice that was participating in the evaluation. In total, VT enrolled 120 primary care practices in the RETAIN evaluation from March 2022 to May 2024. Primary care clinics in all Vermont health systems participated, and all Federally Qualified Health Centers in the state joined. VT RETAIN enrolled 798 people in the evaluation through these practices.

The evaluation of VT RETAIN used a clustered random assignment design. The evaluation team assigned participating primary care practices to either the treatment or control group. Enrollees associated with a primary care practice in the treatment group were able to use VT RETAIN's services, whereas those associated with a control group practice could not. Treatment services included an assessment of barriers to work and work goals, an RTW plan, referrals to external services, and communication between the RTW coordinator and other parties as needed. The program gave all enrollees a packet that included 10 tips for staying at work with an injury or illness and an SAW/RTW services resource inventory that documented a robust and interconnected system of social services available in the state. Access to coordination services

from an RTW coordinator was the most significant contrast between what was available to the treatment and control groups.

2. Program implementation

VT RETAIN enrolled only 39 percent of its original target by the end of the Phase 2 enrollment period. The original target was 2,040 enrollees, and VT RETAIN enrolled 798 people. Initially, its primary referral source was patients completing a self-screening tool at participating primary care practices. Later, program staff began engaging additional referral sources, such as grocery stores and libraries, and specialty clinical sites, such as urgent care, physical therapy, or chiropractors' offices, which enabled VT RETAIN to reach a larger population for self-screening and direct referrals. When potential enrollees were not affiliated with a participating primary care practice, program staff said they contacted potential enrollees' primary care providers to ask them to participate in VT RETAIN and undergo random assignment. Recruitment staff contacted potential enrollees who met the self-screening eligibility criteria to confirm their eligibility and interest in enrolling. If they were interested in enrolling, recruitment staff obtained their informed consent and completed their enrollment. Eligible individuals received up to $50 as an incentive for completing enrollment paperwork.

After enrollment, the RTW coordinators began offering services to treatment enrollees. An RTW coordinator assessed the treatment enrollee's barriers to staying at or returning to work and their work goals and then developed an RTW plan with the participant that covered goals, steps to follow, resources, and recommendations, among other items. Program data through June 2023 indicated that 76 percent of enrollees established an RTW plan, and on average the plan was established 40 days after enrollment.

VT RETAIN used a strength-based coaching model to help enrollees communicate directly with their employers, medical providers, and other parties as needed to support their SAW/RTW goals. For example, RTW coordinators encouraged and prepared enrollees to self-advocate and communicate directly with their employers about workplace accommodations. It was rare for RTW coordinators to communicate with enrollees' employers, medical providers, and others. Program staff reported that enrollees seemed more comfortable giving RTW coordinators permission to communicate with medical providers than employers. When a treatment enrollee gave consent, RTW coordinators sent the RTW plan to the enrollee's medical provider to coordinate care. Program staff reported that providers' limited availability was a barrier to providing input on the plan or confirming they had reviewed it, but that they encouraged enrollees to bring copies of their RTW plans to appointments with their clinicians for review and discussion. RTW coordinators also regularly met with the RTW expert team, which included ergonomists, substance use disorder counselors, and employment law professionals, to support complex cases.

VT RETAIN delivered an initial training to medical providers at all primary care practices participating in the program. At the time of clinic enrollment, VT RETAIN delivered training to increase awareness of VT RETAIN, emphasize the importance of work for health, and implement screening into practice workflows. In November 2024 (after the six-month service eligibility period for all treatment enrollees had concluded), VT RETAIN offered a one-time training video for medical providers as an enduring continuing education offering through the Dartmouth Health Medical Grand Rounds program. VT RETAIN did not provide financial incentives for using occupational medicine best practices or completing training. VT RETAIN offered a training program for employers (not specifically employers of RETAIN enrollees).

VT RETAIN leveraged existing plans for a multi-sector collaboration to develop a comprehensive Resilient Workplace Certification Program for employers. This program included best practice training on a wide range of topics that positively affect SAW/RTW, combined with individual assessment and benchmarking to support organizational change. The program was launched in September 2024 to a small number of employers.

B. Baseline characteristics

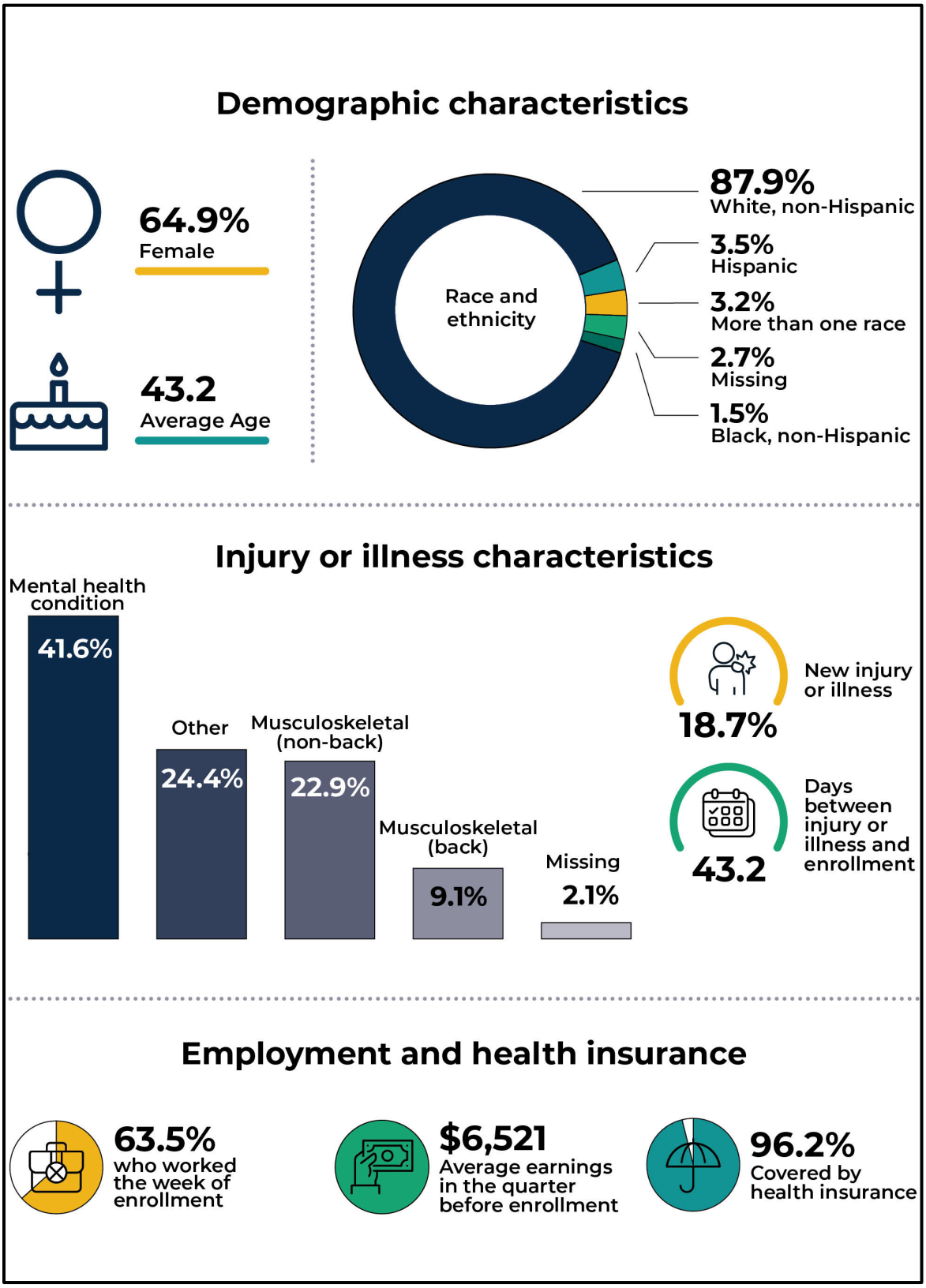
During VT RETAIN's operation period under its Phase 2 grant, 798 people enrolled in the evaluation through primary care practices that had been randomly assigned to either the treatment or control group. Because the study design involved random assignment of primary care practices rather than enrollees, the distribution of enrollees across the treatment and control groups was uneven, with a little over half (56 percent) belonging to the treatment group.[20] The sample for the early impact analysis of VT RETAIN comprised 676 enrollees who completed the early follow-up survey that Mathematica conducted. The median time between enrollment and survey completion was 11 weeks, with nearly all respondents completing the survey during the six-month period when they were eligible for services. In this section, we describe the characteristics of this sample at the time of enrollment in VT RETAIN and note any significant differences between the treatment and control groups. See Farid et al. (2023) for a comparison between VT RETAIN enrollees and comparison populations in the state (all workers and applicants for SSDI and SSI).

Demographic characteristics. Almost two-thirds of VT RETAIN enrollees were female (65 percent), and the average age of enrollees was 43 (Exhibit VII.1). Most enrollees were non-Hispanic White (88 percent), followed by Hispanic (4 percent). Smaller shares of enrollees were more than one race (3 percent), non-Hispanic Black (2 percent), or had missing information (3 percent). Nearly all enrollees (99.9 percent) cited English as their preferred language. Many enrollees were highly educated, with nearly half (47 percent) reporting they had a four-year college or postgraduate degree. Smaller shares of enrollees had a high school diploma, GED, or certificate of completion (32 percent), or occupational certificate or license or a two-year college degree (18 percent), and 3 percent had not completed high school.

Characteristics of primary injury or illness. Mental health conditions were the most common type of injury or illness among VT RETAIN enrollees, with four in every 10 enrollees reporting such a condition as their reason for enrolling in RETAIN. About 23 percent and 9 percent of enrollees had back and non-back musculoskeletal conditions, respectively, whereas one-quarter of all enrollees had an injury or illness that was not musculoskeletal or a mental health condition. A minority of enrollees (19 percent) reported that their injury or illness was new rather than a worsening of an existing condition. A similar share (20 percent) reported that their condition was a result of an accident or injury rather than an illness or a chronic condition. About one-quarter of enrollees (23 percent) reported that their primary illness or injury

[20] Mathematica stratified the random assignment of primary care practices by practice size, so practices of approximately the same size had an equal probability of assignment to the treatment or control group. Despite this stratification, more people associated with treatment group practices enrolled in RETAIN compared with those associated with control group practices, possibly because practice size is not a perfect proxy for the number of potential enrollees who come to a clinic. Moreover, practices assigned to the control group may have been less active in supporting recruitment for VT RETAIN.

Exhibit VII.1. Vermont RETAIN: Baseline characteristics of early follow-up survey respondents



was caused, at least in part, by work-related factors. Only 6 percent of enrollees reported that their injury or illness was part of a workers' compensation claim. On average, the duration between onset of the medical condition and enrollment in VT RETAIN was about 56 weeks (395 days).[21]

Recent work history. Three-quarters of enrollees (76 percent) reported that they were employed at the time of enrollment. About two-thirds of enrollees (64 percent) were working at the time of enrollment or had worked during the previous week. About one-quarter (26 percent) had not worked during the month before enrollment. Before their injury or illness, enrollees usually worked 38 hours per week on average. A majority of enrollees (56 percent) had worked at their current or most recent job for two years or less, and one-quarter (25 percent) had worked at their job for fewer than six months. Nearly half of the enrollees (46 percent) worked in management, professional, or related occupations, with the next most common occupations being service occupations (27 percent) and sales and office occupations (10 percent).

Economic well-being. Wage records indicate that enrollees earned $6,521 on average during the quarter before enrollment, and 78 percent reported that during the past 12 months they had worked at a job that paid at least $1,000 a month. At enrollment, most enrollees were not receiving income from sources other than earnings. About one in 10 enrollees (11 percent) was receiving assistance from other public programs such as TANF, whereas less than 3 percent received income from each of the following sources: SSDI or SSI, veterans benefits, workers' compensation, and private disability insurance. About 7 percent of enrollees had applied for or received SSI or SSDI during the three years before enrolling in VT RETAIN. Almost all enrollees (96 percent) were covered by health insurance at enrollment.

Differences between the treatment and control groups. We compared the treatment and control groups across more than 20 characteristics measured at the time of enrollment. We adjusted for the size of the primary care practice with which enrollees were associated, because practice size was a factor on which we had stratified random assignment of primary care practices. In general, enrollees in the treatment and control groups had similar characteristics on average—as expected, given the experimental study design. We found three statistically significant differences. First, the share of female enrollees was smaller in the treatment group than the control group (61 percent versus 71 percent). Second, enrollees in the treatment group were younger on average than those in the control group (42 years versus 45 years). Third, we saw differences in the occupational classification of enrollees' pre-injury or pre-illness job. Compared with the control group, a larger share of treatment enrollees worked in service occupations (30 versus 24 percent) and a smaller share worked in sales and office occupations (8 versus 13 percent).

Relative to the other RETAIN programs, VT RETAIN had more and larger differences in baseline characteristics between the treatment and control enrollees. This finding is likely due to the use of a clustered random assignment design, which did not allow us to stratify random assignment based on individual characteristics of enrollees. To the extent that the primary care practices differed in clientele characteristics, this design could have contributed to differences in the characteristics of the treatment

[21] VT RETAIN staff recorded the date of medical condition onset (rather than the date of onset or exacerbation, whichever was more recent). Due to this difference in data recording procedures across the five RETAIN programs, the duration between onset of the medical condition and enrollment is significantly longer in Vermont than the other programs.

and control groups. To obtain unbiased estimates of program impacts, we accounted for the differences in enrollees' sex, age, language, and occupation at their pre-injury or pre-illness job.

C. Early impacts on enrollees' service use, employment, and health outcomes

In this section, we discuss VT RETAIN's early impacts on enrollees' use of SAW/RTW services, employment, and health, based on data from the early follow-up survey. The findings are based on Mathematica's independent evaluation of the program.

How we estimated the impacts of VT RETAIN

We estimated the program's impacts by comparing the outcomes of enrollees who enrolled through primary care practices in the treatment group to the outcomes of enrollees who enrolled through primary care practices in the control group. Only people who enrolled through treatment group practices could access VT RETAIN services. We describe the program's impact on an outcome in terms of how the average outcome of treatment enrollees differed from that of control enrollees. ◢

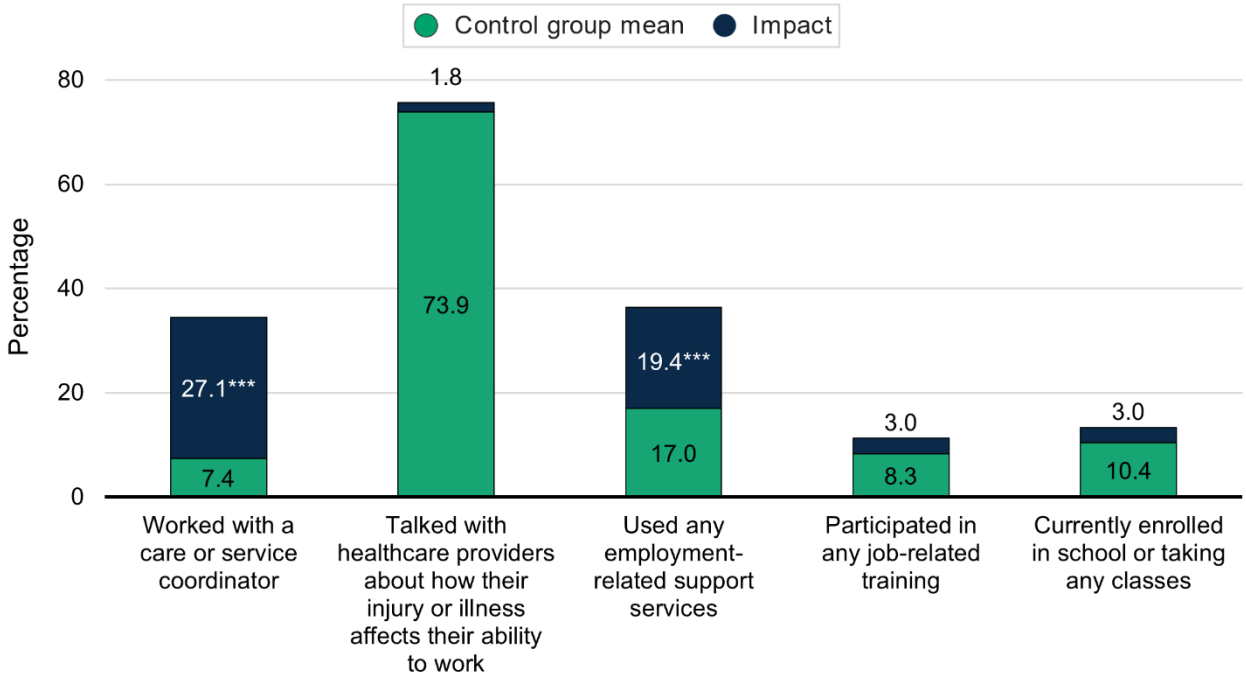
VT RETAIN increased the use of some SAW/RTW services. In the two months before the survey, a substantially larger share of treatment enrollees than control enrollees had used care and SAW/RTW service coordination and employment-related support services. The program did not affect labor force attachment and employment or enrollees' health at the time of the early follow-up survey.

We also estimated impacts of VT RETAIN on service use and training outcomes for subgroups of enrollees defined by their age, sex, and primary diagnosis. VT RETAIN had differential impacts by age on use of employment-related supports, and differential impacts by diagnosis on participation in job-related training, school, or classes. The final impact report will include subgroup analyses of impacts on employment outcomes.

VT RETAIN increased use of care coordination and employment-related support services. Few control group enrollees (about 7 percent) had worked with a care or service coordinator in the two months before the survey; VT RETAIN nearly quadrupled this share among treatment enrollees (Exhibit VII.2 and Appendix Exhibit B.5.1). Specifically, the program increased the share of treatment enrollees who used care or service coordination by 27 percentage points (an increase of more than 300 percent relative to the control group). Among enrollees who had worked with the care or service coordinator, a little less than 80 percent described it as somewhat or very useful (Appendix Exhibit B.5.2). VT RETAIN also doubled the share of enrollees who used any employment-related support services. Whereas 17 percent of control group enrollees used such services, the program increased this share by 19 percentage points (an increase of more than 100 percent relative to the control group) among treatment enrollees.

About three-quarters of enrollees (74 percent) reported they had talked with a medical provider about how their injury or illness affected their work during the past two months, and the program did not affect this outcome. Among enrollees who had talked with their medical providers, a little more than 70 percent said that it was somewhat or extremely helpful. Similar shares of enrollees in the treatment and control groups had participated in job-related training during the past two months (about 8 percent) and were enrolled in school or taking classes (10 percent).

Exhibit VII.2. Vermont RETAIN's early impacts on use of services and training



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.5.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

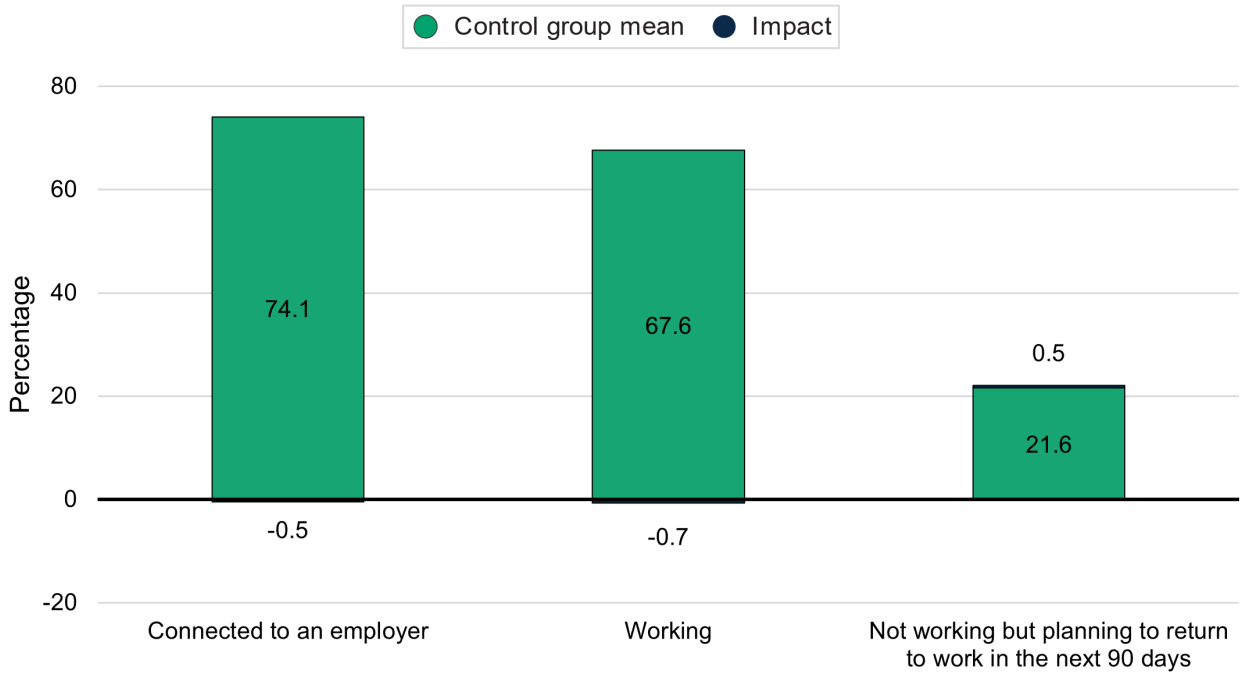
VT RETAIN's impacts on service use outcomes differed by age and type of diagnosis. VT RETAIN's impacts on the use of employment services differed by age (Appendix Exhibit B.5.3). The program had a larger impact on use of employment services for enrollees age 50 and older (27 percentage points, or 171 percent relative to the control group) than for those younger than age 50 (16 percentage points, or 87 percent relative to the control group). We found no differences in VT RETAIN's impacts on service use outcomes by sex (Appendix Exhibit B.5.4).

For several types of services, VT RETAIN had larger impacts for enrollees with musculoskeletal injuries compared to those with non-musculoskeletal injuries (most of whom had mental health conditions) (Appendix Exhibit B.5.5). We found significant differences by enrollee diagnosis in the program's impacts on three outcomes: working with a care or service coordinator, participating in job-related training, and enrolling in school or taking classes. For example, among enrollees with musculoskeletal conditions, 6 percent of the control group enrollees had worked with a care coordinator; the program increased this share by 35 percentage points (an increase of nearly 600 percent relative to the control group). Among enrollees with non-musculoskeletal conditions, 8 percent of the control group used these services; the program increased the share by 24 percentage points (an increase of nearly 300 percent relative to the control group). VT RETAIN had a statistically significant impact only on participation in job-related training and enrolling in school or classes among enrollees with musculoskeletal conditions.

VT RETAIN had no impact on labor force attachment or employment at the time of the early follow-up survey. About three-quarters (74 percent) of enrollees were connected to an employer (that is, either employed or on medical leave) at the time of the early follow-up survey (Exhibit VII.3). About 93

percent of enrollees were connected to an employer or looking for work. About 68 percent of enrollees were working at the time of the survey, whereas 76 percent were either working or engaged in occasional activities or side jobs. About 22 percent of enrollees were not working at the time of the survey but were planning to return to work in the next 90 days. VT RETAIN did not affect any of these outcomes. Among enrollees who were not working, the most common reasons for not working were that they were worried their illness or injury would get worse if they returned to work (cited by 67 percent of enrollees) or their injury or illness was too severe (cited by 63 percent of enrollees). These reasons were also the two most commonly cited reasons for being on medical leave, although 70 percent of enrollees on leave also cited the reason of their doctor not thinking they were ready for work.

Exhibit VII.3. Vermont RETAIN's early impacts on labor force attachment and employment



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.5.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

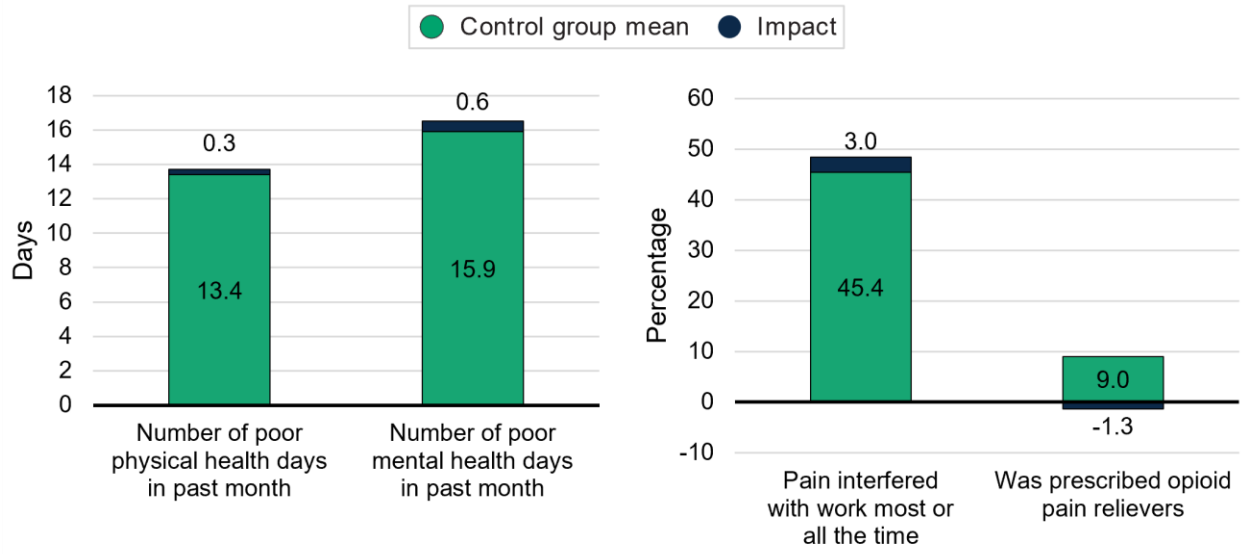
VT RETAIN increased the share of enrollees who were working and had received advice about modifying their job or workplace. This share was 18 percent among control group enrollees; the program increased this share by 8 percentage points among treatment enrollees. Among enrollees who were working, many reported that their employers had offered some type of accommodation. The most common types of accommodations that treatment enrollees reported were reduced work hours or work week (32 percent); additional breaks (31 percent); a change in job duties (13 percent); and changes to workspace equipment, work location, or work environment (13 percent). About one in three enrollees was working and their employer offered them the chance to return to work with accommodations; VT RETAIN did not affect this outcome.

Although the program did not affect employment status at the time of the survey, some evidence indicates that it affected the types of jobs held by those who were working. Among the control group, a

little less than half of the enrollees (44 percent) were working for an employer that offered health insurance; the program reduced the share by 8 percentage points. Similarly, among the control group, about half of the enrollees (51 percent) were working for an employer that offered paid leave; the program reduced that share by 8 percentage points. There were no significant differences between the treatment and control groups in other employment characteristics. On average, per week, enrollees in both groups worked approximately 23 hours and earned $595.

VT RETAIN had no impact on self-reported health outcomes at the time of the early follow-up survey. For multiple measures of health, treatment and control enrollees self-reported similar outcomes (Exhibit VII.4). Only a small share of enrollees (16 percent) reported that their health was very good or excellent. Nearly all enrollees (98 percent) were covered by health insurance. On average, enrollees reported that they had experienced 13 poor physical health days and 16 poor mental health days during the past month. For nearly half of the enrollees (45 percent) pain interfered with their ability to work outside and inside the home most or all of the time, and 9 percent had been prescribed opioid pain relievers. For all of these measures, we found no statistically significant differences between treatment and control enrollees at the time of the early follow-up survey.

Exhibit VII.4. Vermont RETAIN's early impacts on health



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.
Note: See Appendix Exhibit B.5.1 for more details.
*/**/*** Impact is significantly different from zero at the .10/.05/.01 level using a two-tailed *t*-test.

D. Discussion

VT RETAIN increased the likelihood that enrollees worked with care or service coordination and used employment-related services. It was rare for the control group to have used care or service coordination; only about 7 percent reported having worked with a care or service coordinator during the two months before the survey. The program increased this share nearly five-fold among treatment enrollees. This impact is consistent with the program's design: access to SAW/RTW coordination services from an RTW coordinator was the most significant contrast between what was available to the treatment and control

groups. However, despite the program's large impact on this outcome, nearly two-thirds of treatment enrollees reported they had not used care or service coordination in the two months before the survey. This finding might reflect the relatively small share of enrollees who used any VT RETAIN services after enrollment. According to program data through June 2023, at least one-quarter of VT RETAIN enrollees did not use any services after enrollment, whereas the shares in the other four RETAIN programs ranged from 0 percent to 23 percent (Keith et al. 2024). Some treatment enrollees might have interacted with their RTW coordinator at greater than two-month intervals based on their needs, which would not be captured by our measure.

Program design and implementation factors might have limited the program's impacts on use of care and service coordination. VT RETAIN's program model emphasized strengths-based coaching empowering participants to self-advocate and navigate SAW/RTW conversations with their healthcare team and employer. Therefore, by design, the program intended for enrollees to be more self-sufficient and rely less on care coordination. Because of the multi-step enrollment process, there was a delay between when enrollees self-screened for the program and eventually completed the final enrollment paperwork (according to the program, this took 13 days on average). Some enrollees might have experienced a change in the need for or motivation to use SAW/RTW services by the time they became available to them. We also heard from program staff about challenges delivering care coordination services. During interviews, program staff cited a lack of enrollee responsiveness as presenting challenges to delivering RTW coordination services, and they sometimes struggled to connect with enrollees after they had enrolled (Keith et al. 2024). They shared that some enrollees did not understand that they were enrolling in "an intensive program" or enrolled only to receive the financial incentive. Some enrollees were disappointed that VT RETAIN could not provide funding for job training or direct medical care, and some were too overwhelmed with health challenges and health-related social needs to engage with the program. In addition, program data indicate infrequent communication between RTW coordinators and others involved in a treatment enrollee's RTW plan, such as employers and medical providers. Finally, program staff also cited challenges with medical providers' responsiveness to their communication efforts, although over time they tried to increase provider responsiveness by working with clinical support staff.

A majority of control group enrollees (74 percent) had talked with their medical provider about how their injury or illness affected their ability to work, which might have limited the potential for VT RETAIN to improve this outcome among treatment enrollees. The prevalence of this outcome among control group enrollees was likely a result of the VT RETAIN program design. First, VT RETAIN conducted extensive statewide marketing to both workers and healthcare staff, which likely raised awareness of the topic of work as a health outcome and made it more likely for both patients and medical providers to initiate such conversations. Second, as part of the eligibility criteria, all individuals enrolled in RETAIN needed to be affiliated with a participating primary care practice, which meant they were connected to the healthcare system (and thus, presumably, would have greater access to a medical provider compared to people who were not engaged with healthcare). Third, due to the program's processes, medical providers of both treatment and control enrollees were likely aware of their interest in SAW/RTW services and thus may

have initiated these types of conversations.[22] These factors likely contributed to the large share of control group enrollees (74 percent) who had talked with their clinician about how their injury or illness affected their ability to work—the largest share across the five RETAIN programs.

VT RETAIN doubled the share of enrollees who used employment-related support services, which is notable given the program's design and previously reported service use. VT RETAIN did not directly provide employment services (such as job search assistance or training) to treatment enrollees but instead offered curated resources and made referrals to existing programs in the state. Both treatment and control enrollees had access to a robust system of publicly available services, such as HireAbility Vermont and the Career Services Center in Vermont, and both received a packet from VT RETAIN that included 10 tips for staying at work with an injury or illness and the SAW/RTW services resource inventory that the RTW coordinators continually updated. Also, program data through June 2023 indicated that less than 10 percent of treatment enrollees used job search, training, or other employment services (Keith et al. 2024). The program's large positive impact might stem from the personalized goal planning, strengths-based coaching to motivate and prepare enrollees for services, and statewide clinician awareness of work as a health outcome. It might also stem from the manner in which VT RETAIN connected treatment enrollees to existing employment services. Although all enrollees received the SAW/RTW service inventory, treatment enrollees might have benefited from the help of the RTW coordinators in the selection of and referrals to appropriate services and in navigating these service systems. In addition, some survey respondents might have interpreted employment-related services broadly and thus counted the strengths-based coaching from RTW coordinators about how to communicate with their employers.[23]

Subgroup analyses indicate that VT RETAIN's impacts on service use were larger for older enrollees than younger ones and those with musculoskeletal conditions compared with those with non-musculoskeletal conditions. One potential explanation might lie in differences in the share of enrollees with mental health conditions by age and diagnosis. This share was larger among younger enrollees compared with older enrollees (49 versus 27 percent) and among those with musculoskeletal conditions compared to those with non-musculoskeletal conditions (0 versus 61 percent). Studies suggest that the stigma, unpredictability, and invisible nature of mental health conditions can present challenges for the successful promotion and implementation of SAW/RTW strategies for people with such diagnoses (Brouwers 2020; Charette-Dussault and Corbière 2019; Gould-Werth et al. 2018). Consistent with this finding, a prior study of RETAIN (not specific to Vermont) found that enrollees with mental health challenges experienced heightened challenges in fully engaging with services provided by the RETAIN programs (Farid et al. 2024).

VT RETAIN did not affect enrollees' labor force attachment or employment at the time of the survey, but it increased the share of enrollees who were working and received advice about job or workplace

[22] Medical providers of control and treatment enrollees could have learned about patient enrollment by (1) receiving their patient's SAW/RTW plan (in the case of treatment enrollees), (2) receiving the monthly clinic report from VT RETAIN that cumulatively listed enrolled patients at their clinic, or (3) being told by their patient. Some people enrolled in VT RETAIN based on the suggestion of their medical provider.

[23] The survey prompted respondents that "Employment-related services can include help 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."

modifications. As part of the strengths-based coaching model, RTW coordinators encouraged and prepared enrollees to communicate directly with their employers and medical providers about workplace accommodations and staying at or returning to work. Curiously, there were sizable differences between the treatment and control groups in the shares of enrollees who were working for an employer that offered health insurance and paid leave. Although the prevalence of these outcomes was substantially lower in the treatment group than the control group, these differences should be interpreted with caution. Because we do not see any program impact on the shares of enrollees who were working, the differences appear to derive from differences in the types of employers for which treatment and control group employees worked. It is plausible but unlikely that treatment enrollees experienced more job churn in the period between enrollment and survey completion; even if they did, there is no obvious mechanism for why the program would have caused treatment enrollees to take lower-quality jobs. Further, we cannot rule out that the cluster random assignment design contributed to baseline differences between the two groups. People who have health insurance coverage through their employers might be more likely to seek medical care at some primary care practices than others. If practices that treated more people with employer-provided insurance were randomly assigned to the control group, that could also explain the difference we observed of treatment enrollees being less likely than control enrollees to be working for an employer that provides health insurance.

VT RETAIN had no impacts on multiple self-reported measures of enrollees' health at the time of the early follow-up survey. Because VT RETAIN provided training and educational materials to medical providers in both the treatment and control groups, these trainings would not have generated improvements in treatment enrollees' health relative to control enrollees. The absence of impacts on health outcomes might also reflect the composition of enrollees in terms of the nature and severity of their injury or illness. Compared with the other RETAIN programs, VT RETAIN had the largest share of enrollees with a primary mental health diagnosis—consistent with the fact that mental health was the most common reason for long-term work disability in Vermont (SSA 2024). The program also had a small share of enrollees whose injury or illness was new (18 percent), suggesting that most enrollees had chronic mental health conditions that might have been harder to treat and less likely to improve.

VIII. Conclusion

This report presents findings from analyses of the five RETAIN programs' early impacts on enrollee outcomes. The evaluation used experimental study designs for each program that involved random assignment of either individuals or primary care practices to a treatment group or control group. At each program, only individuals associated with a treatment group could access the full-service menu, whereas individuals associated with the control group could access limited or no services from the program. We estimated each RETAIN program's impacts by comparing the outcomes of enrollees in the two groups. For this report, we analyzed data from a follow-up survey of enrollees that Mathematica conducted approximately two months after they enrolled in the RETAIN programs. In the sections below, we summarize the findings of our analysis, discuss key themes, and note the key study considerations that are relevant to the interpretation of findings.

A. Summary of findings

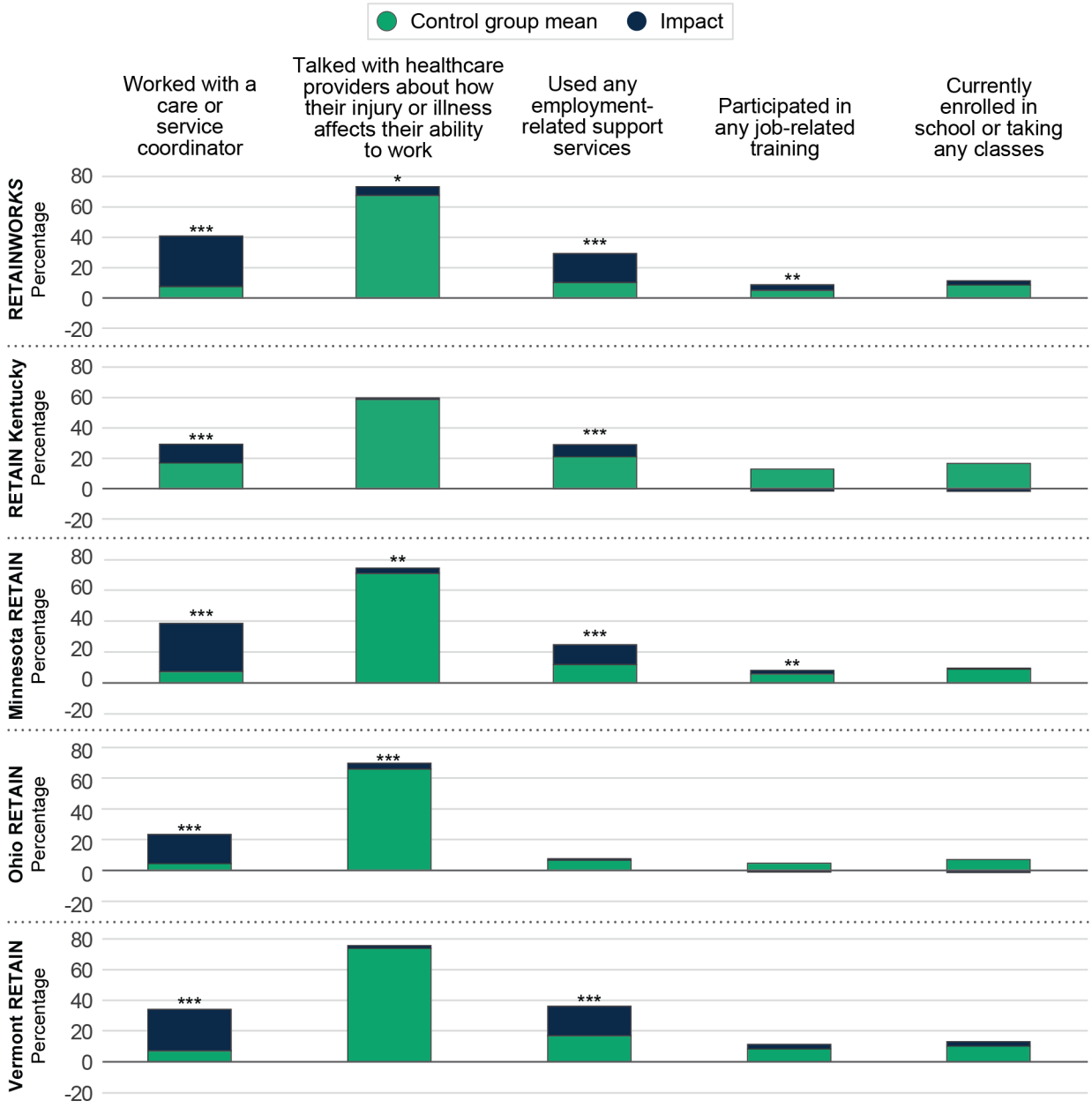
In this section, we provide a high-level summary of the findings from the early impact analyses while looking across the five RETAIN programs.

All of the RETAIN programs increased self-reported use of SAW/RTW services during the two months before the survey among treatment enrollees compared to control enrollees (Exhibit VIII.1). The most notable impacts were for use of care coordination and employment-related support services, which were central components of the RETAIN program model. For some programs, the impacts on use of SAW/RTW services differed by enrollee characteristics such as age, sex, and diagnosis type.

None of the programs had increased enrollees' employment rates or improved employment characteristics (such as work hours or weekly pay) at the time of the survey (Exhibit VIII.2). One program (RETAINWOR*KS*) increased the share of enrollees in the labor force (that is, either connected to an employer or looking for work). For two programs (MN RETAIN and OH RETAIN), we found evidence of negative impacts on employment rates. However, those programs increased the share of enrollees who were not working but intending to return to work in the next 90 days, which suggests that there was no difference between the treatment and control groups in their commitment to remaining in the workforce. Each RETAIN program increased the share of treatment enrollees who were working and had received advice related to workplace accommodations.

Limited evidence exists that the RETAIN programs generated substantial changes in treatment enrollees' health outcomes in the short term (Exhibit VIII.3). One program (RETAINWOR*KS*) improved some health-related measures, including reducing the average number of poor physical health days in the previous month, the likelihood that pain interfered with work most or all the time, and the likelihood of receiving opioid prescriptions. However, in the other four programs, we found no evidence of impacts on any measure of enrollees' health at the time of the early follow-up survey.

Exhibit VIII.1. RETAIN programs' impacts on the use of SAW/RTW services

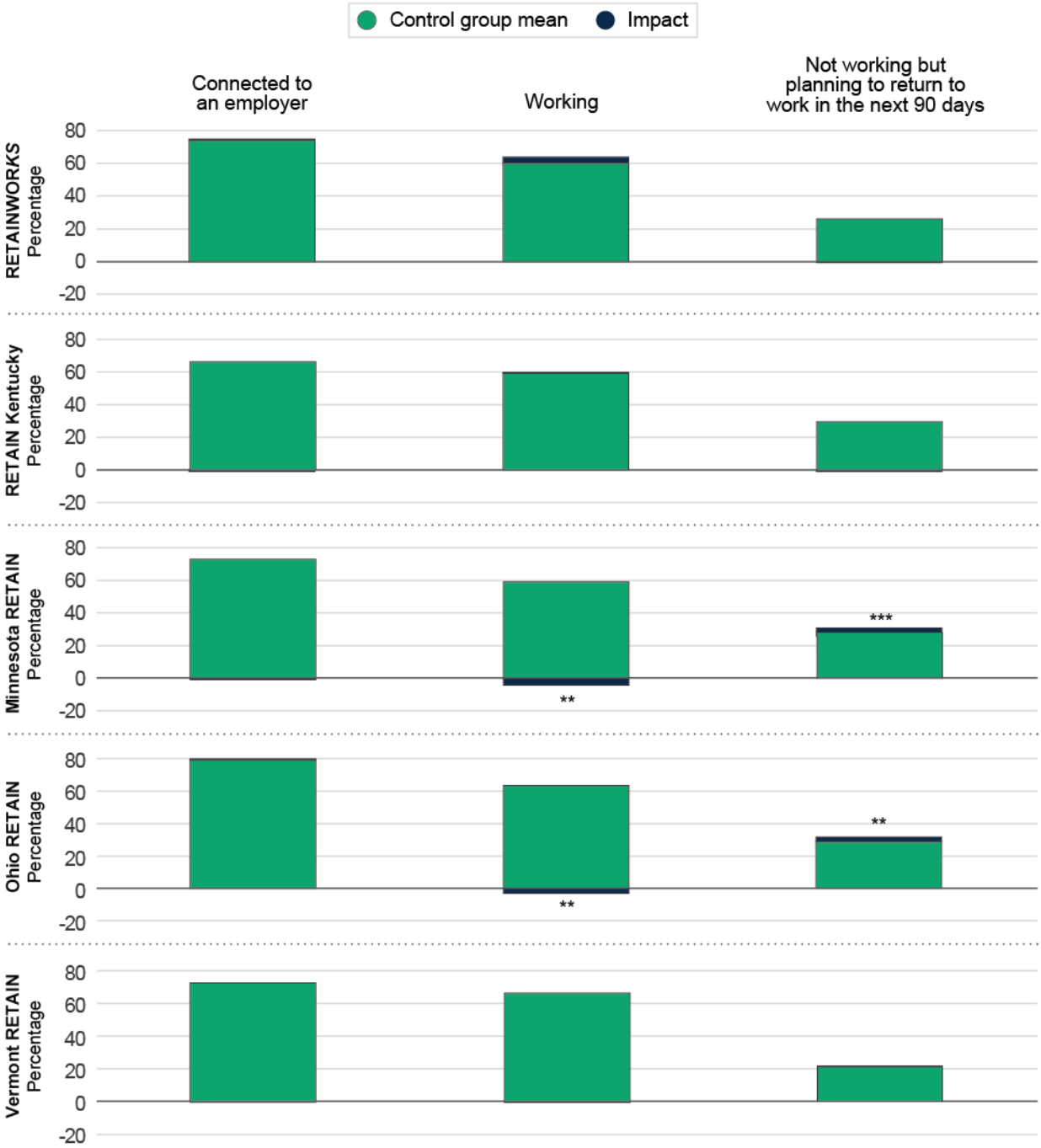


Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

Exhibit VIII.2. RETAIN programs' impacts on employment outcomes

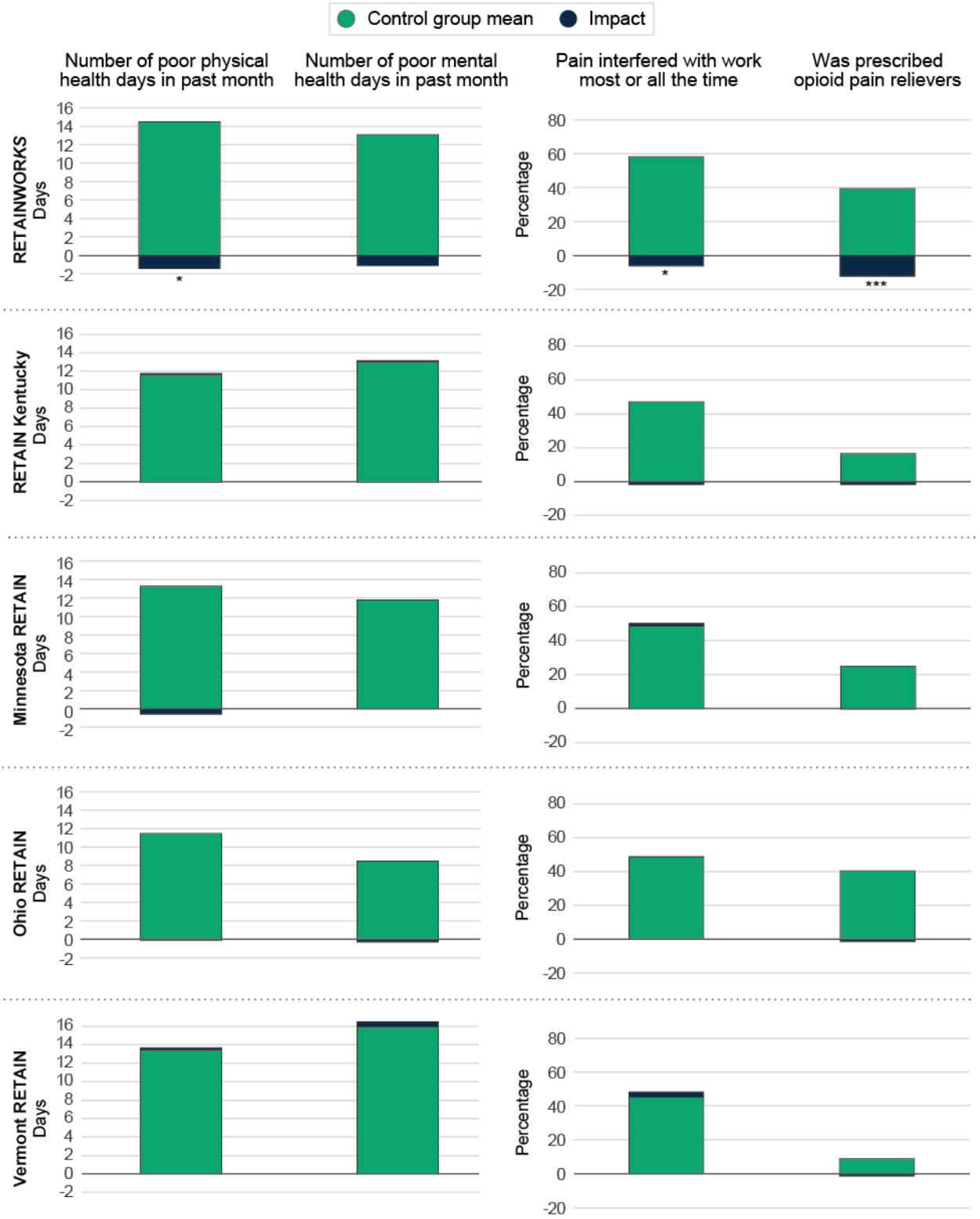


Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

Exhibit VIII.3. RETAIN programs' impacts on health outcomes



Source: Early follow-up survey; RETAIN enrollment data; State unemployment insurance wage records.

Note: See Appendix Tables B.1.1, B.2.1, B.3.1, B.4.1 and B.5.1 for more details.

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

B. Discussion of key themes

In this section, we highlight key patterns in the findings from the early impact analysis of the five RETAIN programs and discuss their significance and possible explanations.

1. Each RETAIN program increased the share of enrollees who self-reported using care and service coordination. However, these positive impacts were smaller than we might have expected, given the RETAIN program model and program data on service use.

Because care and service coordination was a central component of the RETAIN program model, it is encouraging that each of the programs had a positive impact on the share of enrollees who reported using this service in the two months before the survey. It was relatively rare for control group enrollees to use care coordination services, leaving room for the RETAIN programs to potentially improve this outcome. The size of the programs' impacts on this outcome ranged from 12 to 33 percentage points (and ranged from 73 percent to 468 percent of the control group mean). Further, a large majority of treatment enrollees who reported using care coordination found it to be helpful. Nonetheless, for each program, the share of treatment enrollees who reported using care and service coordination was substantially below 100 percent.

For all programs, the share of treatment enrollees who reported using care coordination in the two months before the survey was substantially smaller than the share recorded in program data as using any services after enrollment. One explanation may lie in the different time periods covered by these measures—the survey measure is limited to the two months before the survey, whereas program data captured services used at any point during the six-month eligibility period.[24] However, this explanation is unlikely because programs' data indicate that the most commonly recorded service was establishing an RTW plan, which was typically done within a few weeks of enrollment (Keith et al. 2024).

There may be alternative explanations for this pattern of findings, which is rooted in how enrollees interpreted the survey question or thought about care coordination when responding to this question. First, enrollees might not have realized they had participated in care coordination because it occurred behind the scenes, which would explain data patterns in programs such as RETAINWOR*KS*, where program data indicate that RTW coordinators communicated with other parties (such as medical providers) for nearly all enrollees. Second, because RTW plans were typically established soon after enrollment, these services might have occurred before the survey's lookback window of two months. The median time between enrollment and survey completion was about 2.5 months, so enrollees might not have counted services that occurred alongside or within a few days of enrollment in RETAIN.

Finally, enrollees might have expected care coordination to involve more intensive or different types of services than they used in the RETAIN programs, so they may not have counted light-touch services like developing an RTW plan as care coordination. For example, during interviews in 2023, many enrollees said that they would like clearer, more frequent, and proactive communication from RETAIN staff (Keith et al.

[24] The process study report used program data from October 2021 through June 2023. For enrollees who enrolled toward the end of this period, the data extract did not cover the full service eligibility period. The measures of service use reported in the process study report might have underestimated the shares of enrollees who eventually used services from the program.

2024). At the same time, enrollees might not have wanted or needed some of the help offered in terms of coordination. Although the survey question prompted that a coordinator "might coordinate medical services, work with employers/supervisors to develop alternative job duties or help people find temporary employment," other data suggest that enrollees had limited demand for some types of coordination services. For example, during interviews, program staff shared that many enrollees did not want RTW coordinators to communicate with their employers (Keith et al. 2024). Also, a majority of enrollees were still connected to their employer so might not have needed help finding temporary employment.

2. **Four of the five programs (RETAINWOR*KS*, RETAIN KY, MN RETAIN, and VT RETAIN) increased enrollees' use of employment-related support services, consistent with the goal of closer collaboration between medical and workforce systems.**

The RETAIN program model aimed for more coordination between healthcare and workforce systems, and the positive impacts on self-reported use of employment services at four of the five RETAIN programs (RETAINWOR*KS*, RETAIN KY, MN RETAIN, and VT RETAIN) suggest the model succeeded in this objective. Further, the greater use of employment-related support services is a potential mechanism through which the programs might have long-term impacts on enrollees' labor market outcomes. OH RETAIN did not increase enrollees' use of employment-related services, likely because the program had the weakest connection to the workforce system compared to the other programs (Keith et al. 2024).

Interestingly, the self-reported rates of using employment services were higher than those suggested by the programs' own data. This finding could reflect how the programs tracked and recorded use of workforce services through data provided by partners, or it could be that respondents interpreted employment-related support services liberally—for example, by including advice from RTW coordinators about workplace accommodations. Alternatively, treatment enrollees might have used employment services unrelated to RETAIN; in this case, the mechanism for the impact might be RETAIN programs helping enrollees be more motivated to work and seek out services to support them in working.

Only two programs (RETAINWOR*KS* and MN RETAIN) increased enrollees' participation in job-related training, and none of the programs had an impact on the share of enrollees who were in school or taking classes. This finding is not surprising, given that RETAIN was not focused on human capital development. Further, enrollees were likely preoccupied with their medical recovery and may have had limited bandwidth to pursue further education or credentialing.

3. **Most enrollees (in both the treatment and control groups) had talked with their medical provider about how injury/illness affects their ability to work; the programs had limited potential to have large impacts on this outcome.**

In each of the RETAIN programs, more than half the control group enrollees reported that they had talked with their medical provider about how injury/illness had an impact on their ability to work during the two months before the early follow-up survey. The high prevalence of this outcome among the control groups might be attributable in part to the programs' designs. For some programs, features of the program design could have limited the potential for differences in this outcome to emerge between the treatment and control groups. In three programs (RETAINWOR*KS*, OH RETAIN, and VT RETAIN), medical providers of enrollees in both the treatment and control groups were required to enroll in RETAIN, and the intent was that all providers would complete trainings on occupational health best practices. This requirement may

have boosted the likelihood of medical providers having conversations about SAW/RTW with all enrollees, regardless of their random assignment group.

Also, people who volunteered to enroll in RETAIN might have been especially motivated to work compared to others with similar injuries and illnesses. There is evidence from previous SSA demonstrations that people who choose to enroll in programs targeting employment outcomes tend to be more work oriented than other eligible people (Farid et al. 2022; Patnaik et al. 2022). If both treatment and control enrollees prioritized employment as a goal in their medical recovery, they may have initiated SAW/RTW conversations with their medical providers regardless of receiving RETAIN services.

Despite the high prevalence of this outcome among control enrollees, three programs (RETAINWOR*KS*, MN RETAIN, and OH RETAIN) increased the share of enrollees who had these types of conversations. The size of the positive impacts on this outcome ranged from 4 to 6 percentage points (or 5 to 9 percent relative to the control group mean). At all three programs, there was close coordination with a lead healthcare partner and program staff had access to enrollees' health records. These factors might have enabled program staff to better coach enrollees on having SAW/RTW conversations with their medical providers. OH RETAIN compensated medical providers for using occupational health best practices with treatment enrollees, which might have motivated them to initiate SAW/RTW conversations.

Importantly, the examined outcome measure focused on the extensive margin of communication—that is, whether any communication occurred between enrollees and their medical providers about SAW/RTW issues. It is possible that the RETAIN programs affected other aspects of the communications between treatment enrollees and their medical providers—for example, the frequency, content, or efficacy of conversations, which the survey data do not capture.

4. Some RETAIN programs were more effective at increasing use of SAW/RTW services among female than male enrollees; differences in service needs or preferences could explain this finding.

Subgroup analyses indicate that three programs (RETAINWOR*KS*, RETAIN KY, and VT RETAIN) had larger impacts on the use of SAW/RTW coordination among female enrollees compared to male enrollees. This finding might reflect differences between men and women in willingness to engage in services in general. Research has documented differences between men and women in engagement with employment training services (Maxwell et al. 2012) and healthcare (Thompson et al. 2016). Further, compared with men, women may be more interested in the specific types of services emphasized by RETAIN: care and service coordination and increased communication between relevant stakeholders. Research suggests that women place a higher value on continuity of care, psychosocial supports, and playing an active role in healthcare decision making than men do (Say et al. 2006; Wessels et al. 2010; Khan et al. 2022)—concepts consistent with the goals of RETAIN. An alternative explanation might be sex differences in recognizing the use of services that occurred behind the scenes—that is, male and female treatment enrollees used care coordination from RETAIN programs at similar rates but female enrollees were more likely to realize and report that they used it.

5. For several programs, the impacts on service use differed by type of diagnosis, although a clear pattern did not emerge.

Subgroup analyses indicate that for all programs except OH RETAIN, the impacts on service use differed by whether enrollees had a musculoskeletal or non-musculoskeletal condition. RETAINWOR*KS* and MN RETAIN had larger impacts on the use of employment services among enrollees with non-musculoskeletal conditions. RETAIN KY and VT RETAIN had larger impacts on use of care coordination among enrollees with musculoskeletal conditions. We discuss some possible explanations below.

The nature of enrollees' medical conditions might affect their need for and readiness to participate in different types of SAW/RTW services. Among RETAIN KY and VT RETAIN enrollees, many enrollees with non-musculoskeletal conditions had mental health conditions. Past research suggests that the stigma, unpredictability, and invisible nature of many mental health conditions present challenges for the successful promotion and implementation of SAW/RTW strategies for people with mental health diagnoses (Brouwers 2020; Charette-Dussault and Corbière 2019; Gould-Werth et al. 2018). This situation was also found to be true for RETAIN programs (Farid et al. 2024). Therefore, people with non-musculoskeletal conditions might have less interest in or ability to engage in care coordination services, which could explain differences by diagnosis type in the impacts of RETAIN KY and VT RETAIN for this outcome.

Enrollees with different types of health conditions might also have differed in other characteristics that can influence interest in or ability to engage with services. Among enrollees in RETAINWOR*KS* and MN RETAIN, the non-employment rate at the time of enrollment was substantially higher among enrollees with non-musculoskeletal conditions than among those with musculoskeletal conditions. This finding could have meant differences by primary diagnosis in enrollees' demand for employment services, so the programs had greater ability to affect use of employment services among people with non-musculoskeletal conditions than those with musculoskeletal conditions.

Although we do not definitively know the reasons for the differences in program impacts on service use by primary diagnosis, the findings suggest that the nature of medical conditions play an important role in enrollees' engagement with offered services. Future versions of SAW/RTW programs might need to consider offering different services or using different engagement strategies for enrollees with different types of medical conditions.

6. Only one program (RETAINWOR*KS*) improved enrollees' health; various reasons might explain the absence of impacts in the other programs.

The RETAIN program model and the five programs' designs made it unlikely for large differences in health to emerge between treatment and control groups within a few months of enrollment. The program model did not include directly providing medical services or addressing health needs—for example, by providing therapies or medications. Although the programs offered trainings to medical providers that could influence treatment practices and in turn improve patients' health, these trainings were offered to medical providers of both treatment and control enrollees and thus were unlikely to result in differences in health outcomes for the two groups. Although, in theory, programs could facilitate access to medical care by helping enrollees get health insurance, most enrollees had coverage when they enrolled in the programs. Furthermore, several of the RETAIN programs recruited enrollees through healthcare systems, which

means both treatment and control enrollees were already accessing medical care and sometimes even seeing the same medical providers. Finally, at the time of the survey, many enrollees were still in the midst of their medical recovery and potentially significant psychosocial change due to changed functional abilities. These factors might have limited the potential for the programs to substantially improve the health of treatment enrollees compared to control enrollees during the first few months after enrollment.

Impacts on enrollees' health outcomes may emerge in the long term. The programs increased enrollees' use of care coordination and, to a lesser extent, conversations between enrollees and medical providers about SAW/RTW issues. As time goes on, these short-term effects that treatment enrollees experienced could be associated with changes in treatment plans or quality of care, so their health or functioning might improve as a result. In addition, RETAIN programs might indirectly improve enrollee health by increasing employment in the long term. Research suggests that employment can have a protective effect on health by providing psychological benefits and the financial means to access health-enhancing items, such as nutritious food, safe housing, and healthcare (Goodman 2015). The final impact report will provide evidence on the extent to which treatment enrollees experienced better health compared to control group enrollees within one year after enrollment.

7. Although no program increased employment rates at the time of the early follow-up survey, several of them increased enrollees' receipt of advice or supports that could facilitate long-term workforce participation.

There were no early signs of improvement in enrollees' employment rates or characteristics as a result of RETAIN programs, which is not surprising, given the short follow-up period and enrollees' medical conditions. For many enrollees, the early follow-up survey occurred only a few months after the onset or worsening of their medical condition and while they were still recovering. Roughly half of all enrollees self-reported experiencing significant pain all or most of the time and, among enrollees who were not working, the most common reasons for not doing so were that they perceived their condition was too severe or worried it would get worse if they returned to work. This finding is consistent with qualitative findings from enrollee interviews, in which many enrollees indicated that they did not feel ready to return to work soon after enrollment (Keith et al. 2024).

However, the programs did have some early impacts on work-related outcomes, suggesting that positive impacts on employment and earnings could emerge in the future as enrollees make more progress with their medical recoveries. All five programs helped enrollees with workplace accommodations, which could make it easier to stay in the workforce over the long term.[25] Workplace accommodations can facilitate long-term employment and boost earnings by helping to prevent further injury or exacerbation, reduce absenteeism and employment gaps, enable adaptations to maintain productivity, and support motivation and morale. In addition, one program (RETAINWOR*KS*) increased labor force participation primarily by increasing the share of treatment enrollees who were looking for work. The final impact report will assess the extent to which the five RETAIN programs achieved their goals of increasing enrollees' employment and earnings one year after enrollment.

[25] All five programs had a significant positive impact on the share of enrollees who were working and received advice about accommodations. RETAINWOR*KS* also increased the share who were working and whose employer offered them the chance to return to work with needed accommodations.

C. Study considerations

Several study design features are crucial for interpreting the findings of the early impact study. In this section, we discuss these features and their potential influence on our conclusions.

Mathematica's process analysis of the programs' implementation covered the first half of their operating periods. This analysis forms the basis of the program implementation discussions in each chapter. Enrollment began at different times across states, ranging from November 2021 to March 2022. The analysis included program implementation and service delivery up to June 2023, halfway through the 48-month operations funded by Phase 2 grants. The COVID-19 public health emergency may have influenced the implementation and outcomes of the RETAIN programs during this early period. In addition, all programs made changes to various implementation components following a continuous quality improvement approach. When discussing the estimated impacts of each program, we suggest potential explanations based on Mathematica's process analysis and more recent information from Mathematica's evaluation technical assistance calls with RETAIN programs.

We did not examine all possible intermediate outcomes that could affect SAW/RTW outcomes in the long term. The early follow-up survey did not ask about subjective intermediate outcomes such as enrollees' confidence, motivations, or beliefs, which could be impacted by the programs and in turn influence SAW/RTW outcomes. The survey primarily asked about whether enrollees had used certain services rather than the nature or extent of these services. For example, even if similar shares of treatment and control enrollees used care coordination services, RETAIN programs might have provided treatment enrollees with more intensive or effective care coordination, which would not be captured in our measure of use of care coordination services. As another example, whether conversations between patients and medical providers about SAW/RTW topics lead to better long-term outcomes is likely to depend crucially on the content, nature, and frequency of those conversations, which our survey data did not capture.

The measures of enrollees' early outcomes are based on self-reported survey data. The outcomes for the early impact study are based on self-reported survey data, which can have limitations. The accuracy of self-reported measures depends on how respondents interpret survey questions, which might differ from the evaluators' intent. For example, for service use outcomes, respondents might have interpreted services differently than the definitions used by programs to record engagement. Respondents can also have difficulty remembering past behaviors or experiences. These factors could explain why program data indicated substantially higher shares of enrollees establishing RTW plans (with an RTW coordinator) than the share of enrollees who self-reported using care coordination services. Furthermore, a subset of enrollees did not complete the survey. Although we confirmed that respondents (once weighted) are similar to nonrespondents in their baseline characteristics, we cannot decisively rule out that the two groups differ in their early outcomes. The final evaluation report will draw on data from various sources, including administrative data from SSA and states, which should mitigate these issues in the measures of one-year outcomes.

We estimated impacts by comparing the outcomes of treatment and control enrollees, which might not capture systems change prompted by programs. Some RETAIN programs aimed to enact systems changes that could affect both control enrollees and non-enrollees. For instance, VT RETAIN conducted statewide marketing to raise awareness of work as a critical health outcome among workers and

healthcare providers, which was not targeted specifically at treatment enrollees. If a program prompted systems changes that affected both treatment and control groups similarly, such improvements would not be detected as program impacts.

During the two-month follow-up period, most enrollees were still recovering from their medical condition and unlikely to have experienced large changes in their employment or health outcomes. In the early impact study, we examined a period shortly after enrollment (approximately two months) when many enrollees were likely in the midst of their medical recoveries and could still be using SAW/RTW services. Treatment enrollees who had begun using RETAIN services might not have completed their service journeys, as they still had up to four months remaining in their potential service period. Roughly half of all enrollees self-reported experiencing significant pain all or most of the time, and the most common reasons for not working were that they perceived their condition was too severe or worried it would get worse if they returned to work. For outcomes such as employment and pain, program impacts are expected to emerge over a longer period than covered by the early impact study. Measures at the two-month mark could be early signals of a program's long-term success; however, the absence of early impacts on such outcomes should not be interpreted as ruling out long-term success. The final evaluation report, expected in 2026, will examine the RETAIN programs' impacts on enrollee outcomes in the first year after enrollment, when significant program impacts on employment and health are more likely to emerge.

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