

RETURN-TO-WORK OUTCOMES FOR FEDERAL EMPLOYEES IN THE OFFICE OF WORKERS' COMPENSATION DISABILITY MANAGEMENT PROGRAM

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EXECUTIVE SUMMARY

This study was prepared on behalf of the U.S. Department of Labor (DOL) Chief Evaluation Office (CEO) to conduct an in-depth descriptive and statistical analysis of data from the DOL Office of Workers' Compensation Programs (OWCP) Federal Employees' Compensation Act (FECA) case management system. The study aimed to understand what factors are associated with disabled workers returning to work and examine if the extent to which the current timing of disability management services is optimal for supporting positive outcomes for injured workers.

To answer these questions, the study explores the relationships among the claim, injury, and claimant characteristics of injured workers and the outcomes of individual disability management cases. To capture varying circumstances, the study focuses on a 17-year window of data (from 2001 to 2017) on injured workers and disability management services. The study focuses on injured workers in the disability management program and subpopulations of workers identified as important through previous research or current findings. The study is descriptive in nature, and thus does not support causal interpretation of relationships. However, the amount of historic data identifies stable patterns and associations that remain consistent over time.

This report provides descriptive statistics and associations between case characteristics (injury, claim, and claimant characteristics) and the outcomes of interest (return-to-work and disability management duration). Process diagrams and survival models complement the descriptive statistics. The report also assesses the similarities and differences in return-to-work rates and duration in disability management across case characteristics and timing and sequence of disability management services. Patterns among the data identify associations between the length of time workers remain in disability management and the return-to-work outcome at various levels of recovery of an injured worker.

After 12 months in disability management, 76% of injured workers returned to work. Overall, 82% of injured workers returned to work at some point during the disability management program. This study only considers the return-to-work outcome, and does not include other disability management resolutions that could be considered successful due to reduction in benefits paid. **Table ES-1** summarizes the findings for each research question addressed in the study.



Table ES-1: Key Findings by Research Question

Research Questions	Findings
1. Which characteristics of disability claims and claimants are more strongly associated with return-to-work outcomes?	Injury location, nature, and cause were associated with injured workers both returning and not returning to work. This finding is consistent across disability management subpopulations. See Section 3, Table 5
2. Which OWCP actions (claims examiner adjudication, second opinion examinations, nurse interventions, and vocational rehab) are more strongly associated with return-to-work outcomes (both early and late interventions)? Specifically, using the Disability Management intervention codes, which interventions and intervention patterns are associated with return-to-work outcomes?	Nurse services were the most common service offered to injured workers. More than 50% of injured workers returned to work after receiving nurse services without any additional disability management activities. See Section 4.
3. Which pre-claim characteristics (claimant and incident) are more strongly associated with prolonged disability periods?	Injury characteristics were associated with both longer and shorter durations of disability management. Type of injury (traumatic versus occupational) and employing agency correlated with intervals in disability management. Claimants took longer to return to work when there were delays in disability management adjudication and when there were extended periods between DOL's receipt and adjudication of a claim. See Section 3.
4. Is the current bifurcated case management threshold (i.e., 30 months) highly correlated with workers returning to work or are alternative cut-offs (e.g., 12 months, 24 months, 36 months, or other) more closely correlated with a return to work?	Disability management services were associated with injured workers returning to work during the first 12 months of a case across all subpopulations. Most injured workers returned to work within 18 to 24 months in disability management. Nurse services were highly associated with return-to-work events. See Section 5.

The initial findings prompted additional analysis of the most favorable disability management outcome: an injured worker who returned to work and had a short stay in disability management. Injury characteristics and time between adjudication and disability management had the strongest associations with a favorable outcome (up to 14% and 5%, respectively). There was also an association between disability management services and injured workers returning to work at full capacity. Nurse services consistently preceded many of these successful return-to-work instances.

A common theme in both the descriptive statistics and statistical analyses is that injured workers returned to full capacity (or close to) within the first 12 months of the disability management program. Injured workers with injuries resulting from occupational illness took longer to return to work. After 18 months, most injured workers either had returned to work or were unlikely to return in any capacity. Very few workers (less than 1%) returned to work between 24 and 30 months. These historic patterns suggest that changing the start of Periodic Roll Management from 30 to 24 months could achieve similar outcomes of return-to-work for injured workers.



INTRODUCTION

The Federal Employees' Compensation Act (FECA), a law enacted in 1916, ensures federal civilian workers receive pay when they cannot work because of work-related injuries. The U.S. Department of Labor (DOL) Office of Workers' Compensation Programs (OWCP) oversees these federal worker disability cases through the Federal Employees' Compensation Program. This project was prompted by DOL's interest in identifying factors associated with disabled workers recovering and returning to work faster.

To research this question, DOL's Chief Evaluation Office (CEO), in collaboration with OWCP, contracted with Summit Consulting, LLC (Summit) to analyze data from the case management system used to record and track federal worker disability cases. The analysis focused on administrative data (data collected for recordkeeping) to look for patterns in worker injuries, case management, and return-to-work outcomes.¹ This report summarizes these findings and shows the descriptive statistics and statistical models used to address the research questions below. This study is descriptive in nature. Therefore, study results do not mean that specific disability management services caused a specific outcome but instead show the correlations among services, injury characteristics, and outcomes.

The Return-to-Work Outcomes study uses data on injured workers who received disability management services between February 2001 and November 2017. This extended 17-year timeframe captures complete disability periods for recent disability cases and claimants with extended periods of disability. The report highlights subpopulations (i.e., smaller groups within the larger population that share a common set of characteristics) that previous research has shown to be important or prevalent in the data.^{2,3} The report includes the following sections:

1. **"Program Background and Research Questions"** describes the Federal Employees' Compensation Program, the disability management program, the processes involved, and research questions.
2. **"Who and What Are We Studying?"** describes the population, subpopulations, and outcomes of interest.
3. **"Who Returns to Work and How Long Does It Take?"** describes characteristics of claims, injured workers, and injuries associated with return-to-work and prolonged periods in disability management.
4. **"What disability management activities are provided to workers and are associated with return-to-work?"** describes disability management phases and examines which disability management services are associated with return-to-work.
5. **"What disability management approach and case management cut-offs are highly correlated with returning to work?"** describes the association of case characteristics with return-to-work,

¹ Return-to-work (hyphenated) is used as a modifier referring to the return-to-work event or outcome.

² ICF Consulting. "Federal Employees Compensation Act (FECA) Program Effectiveness Study." Prepared for the U.S. Department of Labor. March 31, 2004.

³ Maxwell, Nan, Albert Liu, Nathan Wozny, and Caroline Massad Francis. "Addressing Return-to-Work Issues in the Federal Employees' Compensation Act with Administrative Data." Prepared by Mathematica for the U.S. Department of Labor. April 26, 2013. https://www.dol.gov/asp/evaluation/completed-studies/Addressing_Return_to_Work_Issues/FINAL_REPORT_addressing_return_to_work_issues.pdf



controlling for various factors, and describes the potential impact of new transition points in the bifurcated disability management system.

This study only considers the return-to-work outcome, and does not include other disability management resolutions that could be considered successful due to reduction in benefits paid.



1 PROGRAM BACKGROUND AND RESEARCH QUESTIONS

1.1 PROGRAM BACKGROUND

1.1.1 What is the Federal Employees' Compensation Program and who administers it?

Disability occurs when a worker is injured on the job, their work conditions cause injury over time, or their work conditions worsen an existing injury. FECA provides workers' compensation coverage to civilian federal employees. FECA covers work-related traumatic injuries, occupational illnesses that develop over time, and existing conditions that the duties of employment accelerated or aggravated. FECA applies to all civilian federal workers, except those paid from non-appropriated funds, regardless of type of position held or tenure. These workers include those who are seasonal, part time, in temporary positions, or on probation.⁴ FECA also covers civilian workers within U.S. defense agencies but not those serving in the military segment of the defense workforce.

DOL OWCP administers FECA benefits through the Federal Employees' Compensation Program. Through this program, OWCP finances and manages medical treatment, vocational rehabilitation, wage replacement benefits, and other benefits to civilian federal workers who experience work-related injuries or occupational illness.⁵ OWCP administers the program through 12 district offices and its headquarters in Washington, DC. Initially, OWCP pays the costs of compensation and then charges the workers' employing agencies for these costs at the end of each year. In 2017, the program provided a total of \$2.9 billion to over 218,000 claimants, with \$2 billion going toward lost wages and death benefits and \$900 million toward medical and rehabilitation services.⁶

Terms 

claimant—an injured worker who files a claim for disability. Used interchangeably with “worker” in this report.

claims examiner—the OWCP staff responsible for reviewing claims and determining claimants' eligibility for FECA

adjudication—administrative process where OWCP determines whether a disability claim is FECA eligible

disability management—active management of case, with the goal of the claimant returning to work

1.1.2 What happens when an injured worker files a claim? What is the disability management process?

An injured worker files a claim with their employing agency (e.g., the U.S. Postal Service), which then forwards the claim to OWCP. Upon receiving the claim, OWCP assigns a claims examiner to manage the claim. The first claims examiner action is *adjudication*.⁷ During adjudication, the claims examiner reviews the medical evidence and supporting statements from the worker and/or employing agency to determine if the claim is eligible for FECA. From 2005 to 2010, claims examiners denied 10% of traumatic

⁴ “Division of Federal Employees' Compensation (DFEC) - Federal Employees' Compensation Act.” U.S. Department of Labor - Office of Workers' Compensation Programs (OWCP), www.dol.gov/owcp/dfec/regs/statutes/feca.htm.

⁵ “Division of Federal Employees' Compensation (DFEC) - About DFEC.” U.S. Department of Labor - Office of Workers' Compensation Programs (OWCP), www.dol.gov/owcp/dfec/about.htm.

⁶ “Division of Federal Employees' Compensation (DFEC) - About DFEC.” U.S. Department of Labor - Office of Workers' Compensation Programs (OWCP), www.dol.gov/owcp/dfec/about.htm.

⁷ Details about claim processing can be found in the OWCP Division of Federal Employees' Compensation here: <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT5/>



injury cases and 47% of occupational illnesses, according to previous research.⁸ After the claims examiner determines the claim is eligible under FECA, OWCP pays claimant benefits.

In some cases, the worker may be able to continue working and only need medical benefits. This is very common; 83% of traumatic injury cases and 38% of occupational illness cases were eligible for only medical benefits from 2005 to 2010.⁹ In other instances, the worker may be unable to return to work after initial medical treatment.

Workers unable to return to work enter the *disability management* program. Claimants who enter disability management receive active assistance in their recovery. The goal of disability management is to “ensure medical recovery and a sustainable return-to-work.”¹⁰ The employing agency is encouraged to offer accommodations to the worker such as light duty or part-time work during the recovery process, if feasible. In instances where reemployment at the employing agency is not feasible, OWCP helps the worker find employment in other agencies or the private sector.

Figure 1 illustrates the activities in the disability management program. Two phases have sequential activities. A claims examiner can exercise a third set of activities at any time during the disability management program including, during the Nurse and Vocational Rehabilitation Phases.

During the Nurse Phase, a nurse works with the injured worker and physician to ensure the worker receives proper medical care. The nurse also works with the employing agency to secure any necessary accommodations at the worker’s original employment location to help the worker return to work in some capacity. This phase lasts four months initially, but OWCP can grant extensions as necessary.

For those who do not return to work with the assistance of a nurse, the next phase is the *Vocational Rehabilitation Phase*, in which a rehabilitation counselor assists with a reemployment plan and arranges necessary services such as training, testing, or accommodations. During vocational rehabilitation, a claimant may take several different paths, which the bottom of **Figure 1** illustrates.

The claims examiner may take actions not related to nurse or vocational rehabilitation services, such as sending the injured worker letters about benefits ending or requesting a second opinion from a physician to assess the worker’s medical condition and accommodations needed. These actions can happen at any time in the disability management program, and OWCP categorizes these actions as *Other Disability Management Activities*.¹¹

Some workers’ injuries are too severe for them to return to work even with these services, and OWCP does not provide these services indefinitely. Workers who remain in the disability management system

⁸ Maxwell, Nan, Albert Liu, Nathan Wozny, and Caroline Massad Francis. “Addressing Return-to-Work Issues in the Federal Employees’ Compensation Act with Administrative Data.” Prepared by Mathematica for the U.S. Department of Labor. April 26, 2013. https://www.dol.gov/asp/evaluation/completed-studies/Addressing_Return_to_Work_Issues/FINAL_REPORT_addressing_return_to_work_issues.pdf. Page 28.

⁹ Maxwell, Nan, Albert Liu, Nathan Wozny, and Caroline Massad Francis. Page xiv.

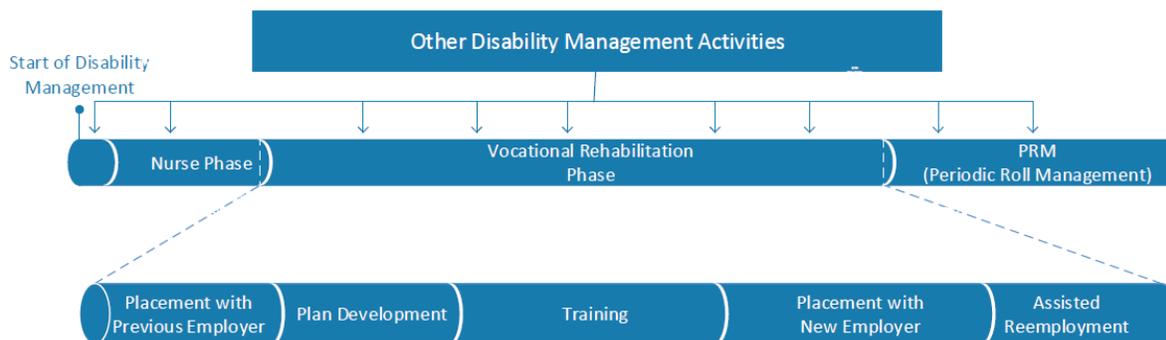
¹⁰ “Division of Federal Employees’ Compensation (DFEC) - Procedure Manual - Chapter 2–0600, Disability Management.” U.S. Department of Labor - Office of Workers’ Compensation Programs (OWCP), Sept. 2010, www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#206001.

¹¹ In October 1, 2012 OWCP implemented changes to their Operational Plan and disability management processes. OWCP mentioned these changes during a briefing on interim results but noted that they would not expect most of them to affect the issues explored in this study. Sensitivity analyses were conducted to determine whether the study findings differed for cases that opened before and after this date. However, the analysis did not reveal substantial differences in the outcomes of interest.



longer than 30 months transition to Periodic Roll Management. During Periodic Roll Management, OWCP monitors the claimants' disability status periodically but plays a less active role in providing targeted nurse or vocational rehabilitation services.

Figure 1: Disability Management Program: Nurse and Vocational Rehabilitation Phases and Other Disability Management Actions



1.2 RESEARCH QUESTIONS

This study focuses on *injured workers participating in the disability management program*. Compared to previous FECA research, this research focuses on injured workers with more severe injuries who required nurse or vocational rehabilitation services. Two previous studies, a 2004 study by ICF Consulting and a 2013 study by Mathematica Policy Research, analyzed the full range of injured workers with and without disability management services.

- ICF's study included all injured workers who submitted a FECA claim and included topics such as timeliness of payments, program design and management, and program cost effectiveness.¹²
- Mathematica's study included all injured workers who submitted a FECA claim and studied how certain case characteristics and management indicators varied over time, across different levels of injury severity, and with work outcomes. This study categorized workers' injury severity as follows: workers whose claims were denied, those who received medical benefits without missing work, those who received compensation for time lost from work without needing disability management services, and those who received disability management services.

This study differs from the previous studies in that workers' time in the disability management program and the study population's patterns of return-to-work differed and accounted for more serious injuries.

Table 1 lists the research questions this study addresses and briefly describes the questions and corresponding report section. The first and third questions both explore *who* experiences certain outcomes (positive and negative) from disability management (addressed together in Section 3).

¹² ICF Consulting. "Federal Employees Compensation Act (FECA) Program Effectiveness Study." Prepared for the U.S. Department of Labor. March 31, 2004. <https://www.dol.gov/owcp/OWCPFinalReport2004b.pdf>



Table 1: Return-to-Work Study Research Questions

Research Questions	Description
Which characteristics of disability claims and claimants are more strongly associated with return-to-work outcomes?	The study explores whether some injured workers were more likely to return to work (a positive outcome) than others. The study analyzes their personal characteristics as well as features of the injury and claim. See Section 3.
Which pre-claim characteristics (claimant and incident) are more strongly associated with prolonged disability periods?	The study explores whether some injured workers were more likely to experience prolonged disability (a negative outcome) than others were. The analysis includes their personal characteristics as well as features of the injury and claim. See Section 3.
Which OWCP (claims examiner, second opinion examinations, nurse interventions, and vocational rehab) actions are more strongly associated with return-to-work outcomes (both early and late interventions)? Specifically, using the Disability Management intervention codes, which interventions and intervention patterns are associated with return-to-work outcomes?	The study analyzed the services claimants receive, explored the path taken during disability management, and examined whether some services were more closely associated with return-to-work. See Section 4.
Is the current bifurcated (that is, divided in two branches) case management threshold (i.e., 30 months) highly correlated with workers returning to work? Are alternative cut-offs (e.g., 12 months, 24 months, 36 months) more closely correlated with a return-to-work?	The study examines whether there is a point in the disability management period in which claimants receiving OWCP services were less likely to return to work. See Section 5.

While exploring the OWCP’s disability management data, several secondary questions arose:

- How much variation was there in return-to-work quality, and how much nuance is lost by using a binary measure of return-to-work? (*See Section 2.2 and Appendix G*)
- What was the timing of disability management activities, and how many claimants return to work before certain services, such as vocational rehabilitation, became an option for them? (*See Section 4.2 and 5.2*)

This report includes descriptive analyses and results throughout, and none of the findings represent causal relationships. The analysis employed the following methods:

- **Descriptive statistics**—Percentages, medians, and averages describing the population of disabled workers, disability management services provided, and timing of key events
- **Association mining**—Machine learning method identifying relationships within a large number of variables
- **Survival plot**—Chart showing what percentage of the population remains over time
- **Transition matrices**—Visual display of the portion of the population that transition directly from one event to another
- **Sequence tree**—Visual display of multi-step sequences of events
- **Survival Models and Hazard Ratios**—Multivariate modeling approach examining how the fraction of injured workers achieving a given outcome (i.e., return-to-work) changes over time

These methods are detailed and highlighted with methods boxes throughout the report. Note that the study uses some of the methods for multiple questions (but the report only highlights the first instance).



2 WHO AND WHAT ARE WE STUDYING?

This section describes the study population of injured workers who received disability management services and discusses the outcomes studied. Specific outcomes include return-to-work and disability management duration, particularly prolonged disability management (cases open longer than 12 months).

The study focuses on data from 120,416 injured workers who received disability management services between February 5, 2001, and November 30, 2017.¹³ This 17-year timeframe captures complete disability periods for recent disability cases and for claimants with extended periods of disability. For more information about this data, please see **Appendix A**.

The following descriptive statistics and analyses focus on specific claim, injury, and claimant characteristics with the potential to affect return-to-work and disability management duration.

2.1 DESCRIBING THE POPULATION OF INJURED WORKERS ENTERING DISABILITY MANAGEMENT

Table 2 provides descriptive statistics of the injured workers in the disability management program.

Claimant Characteristics—The population of workers in disability management was equal in terms of gender. Nearly half (46%) of the population was age 50 or older.

Injury Location and Nature of Injury—About 60% of the injuries affected workers’ shoulders, knees, arms, or backs; the most frequent nature of injury was a sprain.

Received to Adjudication Time—OWCP adjudicated 71% of cases within 30 days of receiving the claim from the employing agency.

Type of Injury—The data included both traumatic injuries and occupational illnesses. Traumatic injuries were defined as injuries caused by exposure in one day or less, while occupational illnesses were caused by prolonged exposure (i.e., longer than one day). Approximately 79% of individuals in disability management experienced a traumatic injury.

Employing Agency—The United States Postal Service (USPS) employed 59% of the disability management population. The remaining 41% came from other employing agencies, with the Defense agencies (11%) and

Table 2: Selected Characteristics of Disability Management Population

Characteristics of Population	
Injury Location	16% Shoulder 16% Knee 12% Arm 12% Back, External
Nature of Injury	24% Sprain 15% Musculoskeletal 14% Pain
Received to Adjudication Time	71% adjudicated within 30 days of receipt
Claimant Characteristics	22% age <40 years 46% age 50 or older 51% male
Type of Injury	79% Traumatic 21% Occupational
Employing Agency	59% U.S. Postal Service (USPS) 11% Defense 9% Homeland Security

N = 120,416

¹³ The date of injury for these workers occurred between January 1, 2001, and October 16, 2017.



the Department of Homeland Security (9%) accounting for 20% of the injured workers.

Table 3 describes the characteristics of the subpopulation groups. The analysis included these subpopulations to be consistent with previous research that examined them separately.¹⁴ Few claim, injury, and claimant characteristics were overly represented in the subgroups. The exception was within the occupational illness subpopulation, which had 78% of injured workers from USPS and 70% of injured workers with a musculoskeletal condition. It is also noteworthy that OWCP adjudicated a large share (above 80%) of traumatic injury and non-USPS cases within 30 days of claim receipt.

Table 3: Selected Characteristics of Disability Management Subpopulations

Characteristic				
	Traumatic Injury	Occupational Illness	USPS	Non-USPS
% Disability Management Population	79%	21%	59%	41%
INJURY LOCATION	19% Knee 16% Shoulder 13% Back, External 13% Leg	20% Arm 19% Shoulder 19% Hand	14% Knee 18% Shoulder	20% Knee 15% Shoulder
NATURE OF INJURY	30% Sprain	70% Musculoskeletal	23% Sprain 20% Musculoskeletal	25% Sprain
CAUSE OF INJURY	27% Fall	27% Handling manual equipment	19% Fall	25% Fall
RECEIVED TO ADJUDICATION	84% adjudicated within 30 days of receipt	24% adjudicated within 30 days of receipt	66% adjudicated within 30 days of receipt	80% adjudicated within 30 days of receipt
ADJUDICATION TO DISABILITY	53% 2 months or less	34% 2 months or less	49% 2 months or less	49% 2 months or less
CLAIMANT CHARACTERISTIC	46% age 50 or older	50% age 50 or older	50% age 50 or older	41% age 50 or older
TYPE OF INJURY	NA	NA	72% Traumatic	89% Traumatic
EMPLOYING AGENCY	54% USPS 12% Defense 11% Homeland Security	78% USPS 7% Defense 4% Veterans Affairs		

Note: Percentages are relative to the total of injured workers in the corresponding subpopulation.

Traumatic Injury: N = 95,425, Occupational Illness: N = 24,931, cases with missing *Nature of Injury* excluded; USPS: N = 70,443, Non-USPS: N = 49,907, cases with missing *Department Agency* excluded.

The analysis in the following sections uses the disability management population and subpopulations to highlight trends and major differences by claim, injury, and claimant characteristics.

¹⁴ Maxwell, Nan, Albert Liu, Nathan Wozny, and Caroline Massad Francis.



2.2 DEFINING RETURN-TO-WORK

The first outcome of interest is whether injured workers returned to work. During the period of analysis, 82% of injured workers returned to work while in the disability management program. This report treats this result as a binary outcome: either a worker returned to work or they did not.

The disability management program helps workers return to work if able. Ideally, this means returning to work at full capacity—full time and with full duty responsibilities. However, for some workers, return-to-work occurs at a lower capacity: either part time, light duty, or both. In such cases, when a worker is unable to return to work at the same capacity they had at injury, they continue to receive compensation for their loss of wage earning capacity (LWEC). OWCP collects information that allows examination of the capacity at which an injured worker returned to work.

Range of Return-to-Work Outcomes—The study translates codes in the disability management system to indicate the capacity at which an injured worker returned to work, creating four categories of return-to-work. **Figure 2** illustrates the possible categories of return-to-work ordered from Least Recovered to Most Recovered.

Figure 2: The Range of Return-to-Work Outcomes



For many workers, return-to-work was not a singular event while they were in the disability management program, and returning to work did not necessarily mean that OWCP closed an injured worker’s management case. An injured worker may have experienced several return-to-work events at different capacities, described above. For those workers who experienced multiple return-to-work events, the median time between the first and last return-to-work event was two months.¹⁵

Workers with Multiple Return-to-Work Events—Workers who experienced multiple return-to-work events typically progressed from less recovered return-to-work states to fully recovered states. Among those who returned to work, 34% reached full recovery ([4] Full Time Full Duty No LWEC) with their first return-to-work event, and 80% reached full recovery by their last return-to-work event [4], and 93% reached their full wage earning capacity ([3] and [4]). These percentages apply to the population that ever returned to

Returning to Work in Stages



The median injured worker experienced two return-to-work categories. Among those with multiple return-to-work events, the median time between the first and last return to work was two months.

Terms



traumatic injury—injuries caused by exposure in one day or less

occupational illness—injuries caused by prolonged exposure (i.e., longer than one day)

¹⁵ The average time between return to work events was three months.



work. **Appendix G** illustrates these progressions.

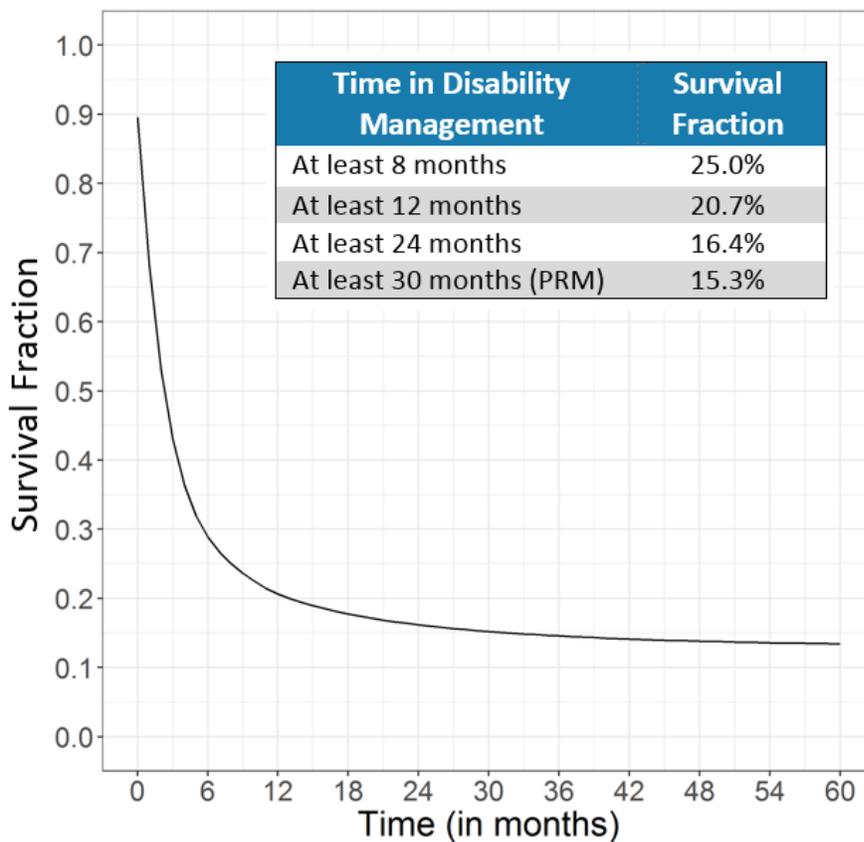
Survival Plot



Survival plots show what percentage of the population remains over time. These survival plots answer the question: *What percentage of the population remains in disability management after each month of disability management?* The results help define prolonged disability. The survival plots in this section are Kaplan-Meier curves.

Figure 3 displays the fraction of injured workers that did not return to work at each interval between 0, the time of entry into disability management, and 60 months. After 12 months, 21% of injured workers had not returned to work. By 30 months, the survival plot estimates 15% of workers had not returned to work. At 30 months, a critical point in the bifurcated management system, an additional 5.4% of the population had a first return-to-work event, relative to the 12-month statistics (i.e., the difference between 21% at 12 months and 15% at 30 months).

Figure 3: Time from Disability Management Entry to First Return-to-Work



N= 120,146

Notes: [1] Survival Fraction refers to the Kaplan-Meier estimate of the fraction of injured workers that had not returned to work at a certain point in time after entering disability management. [2] Censored cases, injured workers who did not return to work, were assigned the entire length of time the case was open.



2.3 DURATION OF DISABILITY MANAGEMENT

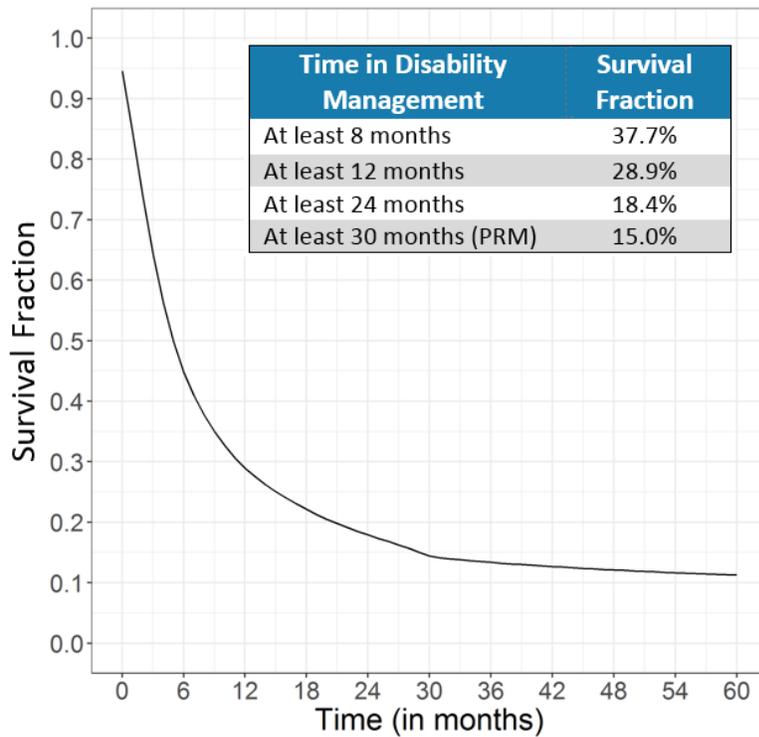
The second outcome of interest is the duration of the injured workers' time in disability management. Injured workers can remain in disability management and still return to work, as noted in Section 2.2. Thus, if the study only considers whether injured workers returned to work, different disability management conditions could have equal outcomes. For example, an injured worker in disability management returning to work after one month and one returning to work after two years had equally successful outcomes but different disability management durations. Considering disability management duration explains when injured workers left the disability management process and no longer required OWCP claim services.

Figure 4 estimates the fraction of injured workers whose cases had not yet closed from the time of entry into disability management to closing. This survival plot estimates that only 29% of the population remained in the program after 12 months, meaning over two thirds of injured workers closed their claims within the first 12 months of disability management. The study considers a case to be in prolonged disability management if it remained open past the 12-month mark.

The 12-month mark is a key threshold in the analysis, because an employing agency must offer the worker their original position or equivalent if they overcome the disability within *one year* from onset. Since the median time between injury and the start of disability management is close to four months, the eight-month mark in Figure 4 roughly aligns with the last point the employing agency must offer the worker their original position. At this point, an estimated 38% of workers remain in disability management.



Figure 4: Time to Closing Disability Management Case



N = 120,416.

Notes: [1] Survival Fraction refers to the Kaplan-Meier estimate of the fraction of injured workers that did not have their cases closed for a certain amount of time after entering disability management. [2] Censored cases, injured workers who had not yet had their cases closed, were assigned the entire length of time the case had been open.

The survival model shows that the fraction of injured workers that remained in disability management dropped dramatically between 12 and 24 months. The survival plot estimates only 15% of cases reached the 30-month Periodic Roll Management mark, the passive stage of the disability management program. There is a substantial change in the fraction of workers remaining in the disability management program at 24 months—18%, about a 65% reduction in the fraction remaining at 12 months (29%). There was minimal difference in the fraction of injured workers whose disability management cases closed between 24 months and 30 months, the start of Periodic Roll Management. In other words, this outcome suggests, OWCP could achieve a similar return-to-work outcome even if the start of Periodic Roll Management is changed from 30 to 24 months (and removing the last six months of Quality Case Management).



3 WHO RETURNS TO WORK AND HOW LONG DOES IT TAKE?

This section examines the relationship between injury, claim, and claimant characteristics and return-to-work (positive outcome) or prolonged disability management (negative outcome). The outcomes of interest are tabulated to one injury, claim, or claimant characteristic at a time. The results do not show causality, and the analysis design only allows for identifying frequencies and associations. Section 5 discusses multivariate analyses that account for multiple injury, claim, or claimant characteristics.

The results indicate no difference across subpopulations (occupational illness versus traumatic injury, and USPS versus non-USPS) in the return-to-work rate or disability management duration. The following factors drove these observed similarities:

- The magnitude of associations between case characteristics was similar for the different subpopulations. There were very few case characteristics with substantial associations.
- Injury characteristics were associated with the rate an injured worker would return to work *and* have a shorter disability management case.
- The disability management population and its subpopulations had similar patterns of returning to work, with 82% of injured workers returning to work and 72% of cases closing within 12 months.

3.1 RETURN-TO-WORK RATES AND DISABILITY DURATION

As discussed in Section 2.2, *82% of the claimants in our study returned to work in some capacity*. For the vast majority of these workers, returning to work meant achieving full time, full duty work capacity. In general, this high return-to-work rate applied across all subpopulations in our study (see **Table 4**). For example, 82% of USPS workers returned to work compared to 80% of non-USPS workers. Similarly, the gap in return-to-work rates between claimants who experienced traumatic injury and occupational illness was only three percentage points.

Table 4: Return-to-Work and Prolonged Disability Management Rates for Disability Management Population and Subpopulations of Interest

Outcome	Type of Injury		Agency Type	
	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Percentage of Population	79.2%	20.7%	58.5%	41.5%
Return-to-Work	82.2%	79.0%	82.4%	80.4%
Prolonged Disability Management	26.1%	35.2%	30.3%	24.8%

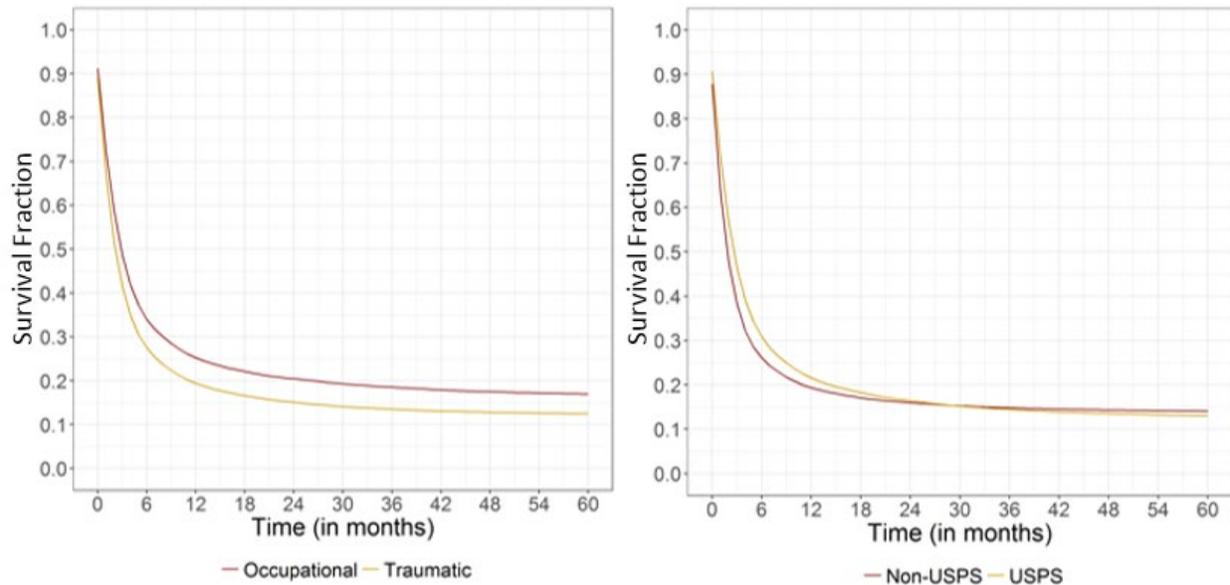
Note: The percentages in the first row are relative to the total population in disability management. The other percentages are relative to the corresponding subpopulations.

Traumatic Injury: N = 95,425, Occupational Illness: N = 24,931; USPS: N = 70,443, Non-USPS: N = 49,907

The study revealed similarities in the survival plots (Kaplan-Meier curves) of the return-to-work outcome for the general population and other subpopulations. **Figure 5** shows the rates of return-to-work across populations. Traumatic injuries and non-USPS subpopulations had slightly faster return-to-work rates, primarily between 6 and 12 months in disability management.



Figure 5: Time to First Return-to-Work for Subpopulations



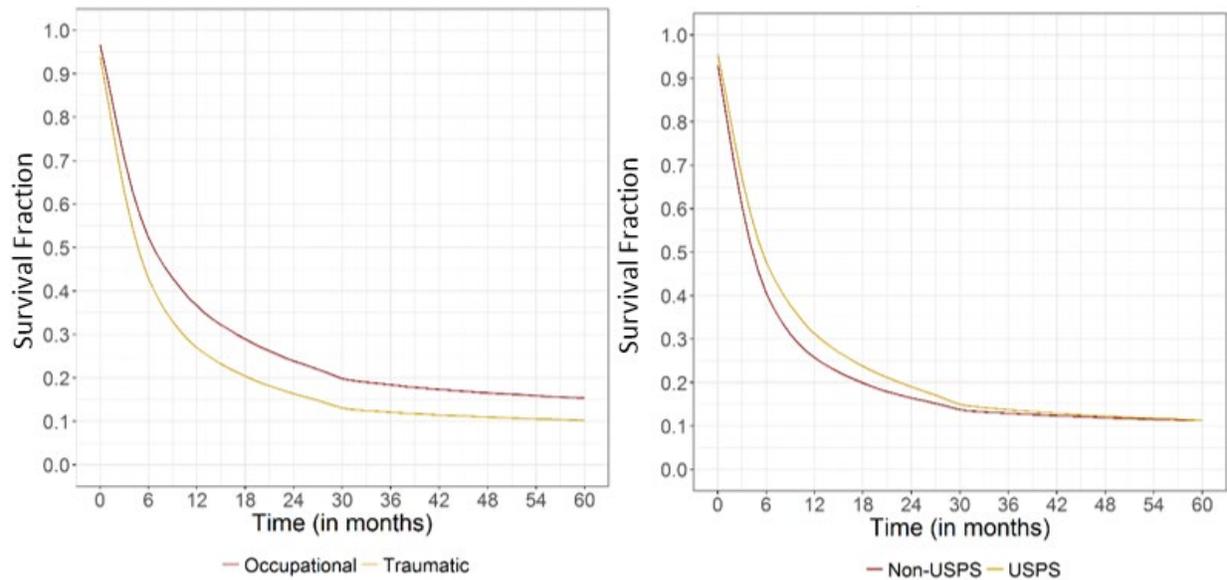
Traumatic Injury: N = 95,425, Occupational Illness: N = 24,931, cases with missing *Nature of Injury* excluded; USPS: N = 70,443, Non-USPS: N = 49,907, cases with missing *Department Agency* excluded.

Looking at disability management duration, the analysis showed distinct results by subpopulation. For example, the occupational illness and traumatic injury populations had different *levels* of return-to-work and diverged in the time it took injured workers to return to work: occupational illness cases took longer to close (See **Figure 6**). The difference in survival probability, 10 percentage points, remained the same after 6 months in disability management. There was a small difference in the patterns for USPS versus non-USPS employees between 6 months and 24 months; the odds of closing a disability management case were otherwise the same, as confirmed by the five-percentage-point difference (30% USPS versus 25% non-USPS) in **Table 4**.

As discussed earlier, the analysis of disability management duration included several time points. These results allowed for a comparison to OWCP’s current bifurcated system, which starts Periodic Roll Management at 30 months.



Figure 6: Time in Disability Management for Subpopulations



Traumatic Injury: N = 95,425, Occupational Illness: N = 24,931, Cases with missing *Nature of Injury* excluded; USPS: N = 70,443, Non-USPS: N = 49,907, cases with missing *Department Agency* excluded.

3.2 CHARACTERISTICS ASSOCIATED WITH RETURN-TO-WORK AND PROLONGED DISABILITY

Injury, claim, and claimant characteristics played an important role in the duration of disability management periods and in the ability of injured workers to return to work. To highlight the differences in outcomes among subpopulations, the study uses *association mining*, which identifies injury, claim, and claimant characteristics associated with higher rates of return-to-work or time spent in disability management. Data shows that 82% of claimants ultimately returned to work in some capacity, and 28% had a prolonged disability management period.

Association Mining and Lifts

Association mining is a machine learning technique used to uncover relationships hidden within a large number of variables. This study uses association rules to answer the question: *given that a characteristic or set of characteristics occurs, what is the probability that a claimant returns to work or is in disability management for an extended period?* The results help identify claimant and claim characteristics associated with higher probabilities of return-to-work outcomes or longer periods of disability. 

Lift indicates the percentage a characteristic was above (a positive lift) the return-to-work rate (outcome) relative to the baseline estimate in a population. For example, the baseline for returning to work in this study population was 82%. A lift of 8% for a knee injury implies the claimant had an 8% higher return-to-work rate relative to the baseline. In other words, the return-to-work rate following a knee injury was 89% (calculated as $82\% + 8\% \times 82\% = 89\%$).



Association mining detects “lifts” of specific injury, claim, and claimant characteristics on an outcome. A lift shows a better-than-average (or worse-than-average) likelihood of an outcome.¹⁶ For example, a positive lift identifies the characteristics associated with an injured worker having a greater-than-average likelihood of returning to work (or spending less than X months in disability management).

There is a distinct association between the location and nature of an injury and the disability management duration and return-to-work rate. Type of injury (traumatic and occupational illness) and employing agency substantially contributed to the length of a disability management. Delays between adjudication and disability management and extended periods between DOL receipt-of-claim and adjudication contributed to long disability management periods. Additionally, one of the best outcomes in the disability management program (an injured worker returning to work *and* staying in disability management for less than a year) was associated with hand and shoulder injuries, injuries due to fractures and sprains, and traumatic injuries.

3.2.1 What are the claimant and claim characteristics associated with return-to-work and prolonged disability?

Table 5 shows the injury, claim, and claimant characteristics associated with a positive or negative lift. The second and third columns show the specific characteristics with positive and negative lifts, respectively, on the return-to-work rate. The fourth and fifth columns show the specific characteristics with the positive and negative lifts, respectively, on the rate of injured workers with a short or prolonged disability management. For ease of reading, this report only includes lifts equal to or greater than 5%; that is, characteristics with an outcome rate above 87%, and individual characteristics that were prevalent in at least 5% of the population. The **bolded** characteristics emphasize lifts higher than 25% and characteristics that were present in over 20% of the population. Selection of both thresholds was ad hoc.¹⁷ This selection illustrates the magnitude of the lift and the prevalence in the population. A high lift on a prevalent characteristic drove the population outcomes.

The analysis indicates that none of the claim, claimant, and injury characteristics had a substantial (25% or more) positive or negative lift on the return-to-work baseline (82%). However, certain elements of the injury characteristics (location, nature, and cause) had both substantial (25% or more) positive and negative lifts on disability management duration (baseline 72% in short-term disability management). Of all worker characteristics, only injured workers under 30 years of age had substantial lifts on short disability cases. Occupational illness and a delay of one year between adjudication to start of disability management had substantial (25% or more) negative lifts on disability management; thus, an injured worker with this type of injury and claim characteristics had prolonged periods of disability management. Additionally, occupational illness was present in more than 20% of the population; thus, the negative lift and prevalence in the population had a substantial effect on the overall population’s length of disability management.

¹⁶ In Appendix B Lift and Proportions, we provide details of the lifts of each claim and claimants characteristics to return to work, and disability management duration. This appendix also includes the association estimates for each of the subpopulations.

¹⁷ Selection of thresholds of a lift at 15%, and prevalence at 10% had minimal repercussions on the analysis.



Table 5: Lift on Return-to-Work and Disability Management Length for the Disability Management Population

Characteristic	Return-to-Work		Disability Management Length	
	Most Likely to RTW	Least Likely to RTW	Short (<12 months)	Prolonged (>12 months)
Baseline in Population	81.5%	18.5%	72.0%	28.0%
NATURE OF INJURY	Fracture and Sprain*	Back	Fracture , Sprain, and Wound	Back , Musculoskeletal
CAUSE OF INJURY	Slip		Fall and Slip	Handling mail
TYPE OF INJURY			Traumatic*	Occupational*
TIME FROM DOL RECEIVED TO ADJUDICATION		75–90 days	15 days or less*	30–45 days, 75–90 days
TIME FROM ADJUDICATION TO DISABILITY MANAGEMENT	4–6 months	More than 1 year	2 months or less*	8–10 months, More than 1 year
AGE		Over 60 years	Under 30 , 30–39, over 60 years	40–49 years*
SEX			Male*	Female*
AGENCY			Defense Agencies, Homeland Security	USPS*, Veterans Administration

Note: *Lift* indicates the percentage a claimant characteristic was more likely to return to work (or other outcome) relative to the baseline return-to-work rate in the population.

Bolded items indicate characteristic with lifts over 25%. An asterisk (*) indicates characteristic present in over 20% of the corresponding population.

Traumatic: N = 95,425, Occupational: N = 24,931, USPS: N = 70,443, Non-USPS: N = 49,907

3.2.2 What claimant and claim characteristics are associated with return-to-work and disability management under 12-months across subpopulations?

The study calculates the lifts of injury, claim, and claimant characteristics on what is considered the best outcome of the disability management program: an injured worker that returned to work *and* had a short disability case. **Figure 6** (versus **Table 5**) shows fewer injury, claim, and claimant characteristics contributing to the best outcome. A key finding is that none of the injury, claim, and claimant characteristics had lifts above 25% (bolded items) relative to what **Table 5** shows.

For the general population, injured workers with hand and knee injuries, injuries due to fractures and sprains, and injuries caused by a slip were associated with the best outcome (second column of **Table 6**). Another finding was that the type of injury (occupational illness or traumatic injury) and employing agency (USPS versus non-USPS) did not have a lift above the baseline in the population (65%). The estimates that each of the subpopulations had similar baselines ranging from 59% to 67% (second row of **Table 6**) confirm this finding.

With the *exception* of injured workers with occupational illness, specific injury characteristics (location, nature, and cause) were consistently associated with the most favorable outcome. The third through fifth rows of **Table 6** show this finding. Sprains, a prevalent characteristic in the general population and



the employing agencies, had positive lifts in the general population, and across both USPS and non-USPS populations.

Table 6: Lift on Characteristics Associated with More Favorable Disability Management Outcome

Characteristic	General Population	Type of Injury		Employing Agency	
		Traumatic Injury	Occupational Illness	USPS	Non-USPS
Baseline in (Sub)Population	65.0%	66.6%	59.0%	63.7%	67.0%
LOCATION OF INJURY	Hand, Knee	Knee	Arm, Hand	Hand, Knee	Knee*, Shoulder
NATURE OF INJURY	Fracture and Sprain*	Fracture		Fracture and Sprain*	Fracture, Sprain*
CAUSE OF INJURY	Slip	Slip		Slip	Slip
TYPE OF INJURY					
TIME FROM DOL RECEIVED TO ADJUDICATION			15 days or less, 15–30 days		
TIME FROM ADJUDICATION TO DISABILITY MANAGEMENT			2–4 Months, 4–6 Months		
AGE					
SEX					
AGENCY		Justice			

Note: A lift equal or larger than 10% and population share larger than 5%. **Bolded** items indicate characteristic with lifts over 25%. An asterisk (*) indicates characteristics present in over 20% of the corresponding subpopulation
Population: 120,416, Traumatic Injury: N = 95,425, Occupational Illness: N = 24,931; USPS: N= 70,443, Non-USPS: N= 49,907



4 WHAT DISABILITY MANAGEMENT ACTIVITIES ARE PROVIDED TO WORKERS AND ARE ASSOCIATED WITH RETURN-TO-WORK?

This section examines the timing of disability management phases, the path claimants took in disability management, and the association between OWCP’s disability management activities and patterns of return-to-work. Additionally, the section discusses whether OWCP’s disability management activities had the same association with return-to-work across subpopulations of workers, such as those with occupational illnesses versus traumatic injuries and USPS versus non-USPS employees.

A return-to-work outcome is defined as the first return-to-work, regardless of whether the claimant was working at full capacity (full time, full duty) at that time or reached full capacity later.

Overall, the results indicate 88% of injured workers received nurse services (either immediately or shortly after entering disability management). Sixty-one percent returned to work after receiving nurse services, and only 13% of cases received vocational rehabilitation services. Of those that received nurse services, 85% returned to work at some point. Of those that received vocational rehabilitation services, 60% returned to work at some point. Cases generally closed soon after the worker’s first observed return-to-work (within 40 days). Subpopulations of injured workers (traumatic injury versus occupational illness, USPS versus non-USPS) had similar paths through disability management and similar outcomes.

4.1 DISABILITY MANAGEMENT ACTIVITIES

Injured workers receive a variety of case management services in disability management, and they typically follow a somewhat linear path. Injured workers who return to work and leave disability management quickly receive fewer services. They also never become eligible for some services reserved for injured workers with extended periods of disability (e.g., vocational rehabilitation services). This section describes the disability management activities included in the study and provides context for how these activities fit within the disability management process as a whole.

The disability management process encompasses a wide range of activities from administrative actions to services designed to help workers return to work. Services include assignment of a nurse, extensions of nurse services, vocational rehabilitation services, and requests for second and third opinions, among others. The analysis excluded the following types of disability management activities because they were uncommon or because they are process milestones rather than services delivered to injured workers:

1. Services received by less than 1% of cases (e.g., assisted reemployment)
2. Administrative actions (e.g., job offer made, job offer withdrawn)
3. Legacy activities that only occurred for the earliest years of our study period

In most instances, the study used OWCP’s disability management activity codes directly. Occasionally, “similar” codes were re-categorized into a single new code to be parsimonious. For example, the category “Letter Sent” encompassed several disability management activities intended to remind injured workers of important deadlines or warn them of an upcoming reduction in benefits. The tables below note these activities as “similar activities grouped under one code.” **Appendix A** (Table A-4 specifically) provides further details on the disability management codes combined for this analysis, and **Appendix C** provides detailed definitions of activities.



Most workers (88%) received nurse services, and for most, the Nurse Phase began immediately or shortly after entering disability management. The objectives of the Nurse Phase were to coordinate medical care in a timely manner, identify work tolerance limitations, assist the worker and employing agency in the return-to-work process, and recommend referrals for cases that may benefit from vocational rehabilitation.¹⁸ Among workers who entered the Nurse Phase, most (77%) returned to work without ever entering the Vocational Rehabilitation phase. After return-to-work, nurses may also perform site visits or follow-up calls to monitor the success of the return-to-work effort.¹⁹ **Table 7** shows activities in the Nurse Phase.

Table 7: Nurse Phase Activities and Definitions

Nurse Phase	Definition
Start of Nurse Phase [NSN]	Assignment of a staff nurse with multiple assignments.
30-day Extension [NF3*]	Claims Examiner could grant a 30-day extension to the Nurse Phase.
60-day Extension [NF6]	Claims Examiner could grant a 60-day extension to the Nurse Phase.

* Similar activities grouped under one code. For details on groupings, see **Appendix A**. For detailed definitions of these activities, see **Appendix C**.

The purpose of vocational rehabilitation is to “minimize the injured worker’s disability and assist with a return to gainful work.”²⁰ This phase is for cases requiring extra attention, and only 13% of cases in the data entered the Vocational Rehabilitation Phase. To qualify for full vocational rehabilitation services, the worker must “have sustained a permanent disability due to a work-related injury or illness; be receiving, or eligible for, compensation benefits; and, due to the work-related condition, be prevented from performing the usual and customary job duties.”²¹ **Table 8** shows activities in the Vocational Rehabilitation Phase.

Table 8: Vocational Rehabilitation Phase Activities and Definitions

Disability Management Activity—Rehabilitation	Definitions
Start of Vocational Rehabilitation Phase [RHR]	Assignment of a rehabilitation specialist.
Placement with Previous Employer [RHH*]	Vocational rehabilitation counselor assisted in placing the worker with the previous employer.
Plan Development [RHD]	Counselor developed a customized plan for services focused on placement with a new employer.
Placement with New Employer [RHP]	Counselor assisted in placing the worker with a new employer if placement with a previous employer had failed.
In Approved Training [RHT]	Counselor coordinated training for the workers who needed to “develop job skills that enhance employability for target jobs that enhance wage restoration.”
Medical Rehabilitation [RHM]	Medical rehabilitation services appropriate for the impairment that enhanced the worker’s employability.

* Similar activities grouped under one code. For details on groupings, see **Appendix A**. For detailed definitions of these activities, see **Appendix C**.

¹⁸ Division of Federal Employees’ Compensation Field Nurse Handbook: Objectives of the Nurse Intervention Program (NIP). <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FNHB-PT2/#002002>.

¹⁹ Division of Federal Employees’ Compensation Field Nurse Handbook: Objectives of the Nurse Intervention Program (NIP). <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FNHB-PT2/#002002>.

²⁰ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT8/#801002>.

²¹ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part2.htm#002004>.



Other Disability Management Activities—These disability management events can occur at any point in the disability management program (See **Table 9**). For example, the claims examiner can request a narrative report that “poses written questions to the attending physician about the extent and duration of disability, work tolerance limitations or the claimant’s ability to work, current treatment plan to facilitate medical recovery” as needed [*Narrative Report Requested*].

Table 9: Other Disability Management Activities and Definitions

Activity [Code]	Definition
Other Intervention by CE [OIC]	CE contacted the worker or previous employer to discuss a return-to-work date and/or the availability of limited duty once work limitations and a release to work had been obtained.
Nurse or Rehabilitation Intervention via CE [INV*]	CE contacted the field nurse or rehabilitation counselor and directed them on further actions on the case.
Letter Sent [LET*]	CE sent a letter to the injured worker.
Second Opinion Report Scheduled [MSI]	Documentation received from the first opinion was insufficient or clarification was required regarding the worker’s medical status.
Referee Report Scheduled [MRI]	Referee examination when the primary physician and the physician giving the second opinion had conflicting medical opinions.
Interruption [INT*]	Services interrupted by external or medical events.
Non-Cooperation [ZZZ*]	Injured worker failed to engage in the disability management process.

* Similar activities grouped under one code. For details on groupings, see **Appendix A**. For detailed definitions of these activities, see **Appendix C**.

Table 10 shows the percentage of injured workers who received each service at any point during their disability management case, regardless of whether the action occurred at month 1 or month 12. Most workers (88%) entered the Nurse Phase [NSN] at some point (usually as the first event), and only 13% entered the Vocational Rehabilitation Phase [RHR].



Table 10: Disability Management Activities and Percent of Injured Workers Who Experienced Them

Phase Disability Management Activity [Code]	Percent of Cases of Total Population
Nurse Phase	
Start of Nurse Phase [NSN]	88.1%
30-day Extension Granted [NF3*]	11.9%
60-day Extension Granted [NF6]	12.8%
Vocational Rehabilitation Phase	
Start of Vocational Rehabilitation Phase [RHR]	13.0%
Placement with Previous Employer [RHH*]	6.0%
Plan Development [RHD]	7.6%
Placement with New Employer [RHP]	3.8%
In Approved Training [RHT]	2.6%
Medical Rehabilitation [RHM]	1.8%
Other Disability Management Activities	
Other Intervention by CE [OIC]	34.9%
Nurse or Rehabilitation Intervention via CE [INV*]	3.9%
Letter Sent [LET*]	22.5%
Second Opinion Report Scheduled [MSI]	26.3%
Referee Report Scheduled [MRI]	5.8%
Interruption [INT*]	10.9%
Non-Cooperation [ZZZ*]	2.0%
Outcome	
Return-to-Work	81.8%

Notes: [1] N = 120,029. [2] There were an additional 387 cases included in other analyses that had none of the codes listed above. [3] The study considered including “Referred to COP Nurse” [NCP] but did not because this service was introduced in the later years of our study. [4] An asterisk (*) indicates this code did not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.

When all disability management activities are complete, OWCP closes the disability management case. This usually indicates the worker has made a full recovery. There were a small number of cases where the injury was so severe that OWCP closed the case because recovery was not possible. Cases generally closed soon after the worker returned to work: the median time between first return-to-work and case closing was 40 days. When OWCP recorded a worker’s last return-to-work in the disability management system, they usually closed the disability management case the same day.

4.2 DISABILITY MANAGEMENT ACTIVITY SEQUENCES

The analysis of these disability management activities includes which actions follow others, the sequence of actions, and the association of these activities with return-to-work. In general, disability management is a linear process where almost all workers began disability management with nurse services. However, the analysis shows some workers’ disability management processes began with other activities, such as the claims examiner requesting a narrative report from their physician.

This section discusses how frequently each disability management activity occurred and examines which disability management events typically followed earlier events in the sequence. Two tools illustrate the sequences of events. First, a transition matrix show which events were most likely to immediately follow others and the events most likely to have occurred directly before a worker returned to work for the first time. Then, a sequence diagram shows multi-step series of events. These sequences illustrate the most common paths that injured workers took.



4.2.1 Which disability management activities typically follow other disability management activities?

An overwhelming majority of disability management cases (88%) received nurse services. Most injured workers who entered the Nurse Phase transitioned directly to return-to-work. Approximately half of claimants who received a 30-day or 60-day nurse extension returned to work as the next step. Vocational rehabilitation actions directly followed less than 5% of any event in the Nurse Phase. Workers who experienced both nurse events and rehabilitation actions typically experienced other disability management activities in the interim, such as Other Claims Examiner Interventions [OIC], Notification Letters [LET*], or Medical Opinions [MSI and MRI]. **Table 11** shows the transition matrix for events in the Nurse Phase. The first column shows the percent of workers who experienced each event. Each row identifies the last service a worker received, such as assignment of a staff nurse, and shows how often that worker experienced other disability management activities next, such as a 60-day nurse extension or return-to-work.

The study also analyzed similar Nurse Phase transition matrices for key subpopulations, such as USPS versus non-USPS workers and injured workers with occupational illness versus traumatic injuries. However, the analysis did not show significant differences. Among these subpopulations, the transitions between disability management services were consistent with differences in transition probabilities of less than five percentage points.

Among workers who entered the Nurse Phase, most (77%) returned to work during the Nurse Phase, so the Vocational Rehabilitation Phase represented a much smaller proportion of cases in the data: only 13% of the study population entered the Vocational Rehabilitation Phase. Workers with less severe injuries returned to work earlier in the process, while workers with more severe injuries remained in disability management longer and received additional services. Of those that entered the Nurse Phase, 85% returned to work at some point. Of those that entered the Vocational Rehabilitation Phase, 60% returned to work at some point.

Transition Matrices



Transition matrices show the probability of an individual who experiences *Event A* today experiencing *Event B* next. Down the left side and across the top row of the grid are the full list of events analyzed. The list on the left represents the individual's current state. The percentages show which events these individuals experienced next. If a worker experienced *Event A* multiple times, then that event was counted multiple times.

For ease of reading, the transition matrices do not show events with percentages less than 5%. Consequently, each row will not sum to 100%. The diagonal of outlined boxes is empty because the analysis only included changes from one disability management service to another.

Table 12 shows the transition matrix for disability management events in the Vocational Rehabilitation Phase. Approximately a third of cases that entered the Vocational Rehabilitation Phase experienced Placement with Previous Employer [RHH] as the next step, and a third experienced Plan Development [RHD] as the next step. Only 6% of entries into vocational rehabilitation were followed by Return-to-Work as the next step. After attempts to place the worker with their previous employer, approximately a quarter returned to work, and 32% progressed to Plan Development. Placement with New Employer followed Training 46% of the time. Not shown in the graphic is that 8% of the cases that entered



the Vocational Rehabilitation Phase went to Medical Rehabilitation [RHM]. This was the only instance where an activity in vocational rehabilitation preceded Medical Rehabilitation.

Table 13 shows transition matrices for events that could occur in any phase. It illustrates the fact that workers who just received one of these services (identified by row labels) could experience any of the other disability management activities next (identified by the columns): Nurse Phase services, Vocational Rehabilitation Phase services, or other activities. Thirty-seven percent of the time, the start of the Nurse Phase [NSN] followed Other Claims Examiner Interventions [OIC]. Notification Letters [LET*] could also occur before the start of the Nurse Phase (16% of these instances in our data). The other actions that were not specific to a phase more frequently occurred later in the process.



Table 11: Transition Matrix for Nurse Phase

% Total Cases with Code	Nurse Phase Activity [Code]	Nurse Phase			Other Disability Management Activities				Return to Work
		Start of Nurse Phase [NSN]	30-day Nurse Extension Granted [NF3]	60-day Nurse Extension Granted [NF6]	Other Intervention by CE [OIC]	Letter Sent [LET*]	Second Opinion Report Schedules [MSI]	Interruption [INT*]	
88.1%	Start of Nurse Phase [NSN]			5.2%	10.9%		7.1%	5.9%	56.0%
11.9%	30-day Extension Granted [NF3]	5.3%		5.5%	7.2%	9.8%	12.5%		48.6%
12.8%	60-day Extension Granted [NF6]		6.0%		5.7%	13.1%	10.2%		51.8%

N = 106,086

Notes: % Total Cases with Code is the percent among the entire universe of disability management cases (120,416). For all codes in the Nurse Phase, less than 5% of occurrences were followed by a rehabilitation action. Therefore, these codes are not included in this transition table. An asterisk (*) indicates this code does not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.



Table 12: Transition Matrix for Vocational Rehabilitation Phase

% Total Cases with Code	Vocational Rehabilitation Phase Activity [Code]	Vocational Rehabilitation Phase					Other				Return to Work
		Start of Vocational Rehabilitation Phase [RHR]	Placement with Previous Employer [RHH]	Plan Development [RHD]	Placement with New Employer [RHP]	In Approved Training [RHT]	Other Intervention by CE [OIC]	Letter Sent [LET*]	Second Opinion Report Schedules [MSI]	Interruption [INT*]	
13.0%	Start of Vocational Rehabilitation [RHR]		33.5%	35.1%				5.5%			5.6%
6.0%	Placement with Previous Employer [RHH]	7.9%		31.9%				6.6%	5.1%	9.2%	25.3%
7.6%	Plan Development [RHD]	6.6%			18.7%	22.0%		9.0%		12.5%	9.4%
3.8%	Placement with New Employer [RHP]						6.2%	40.3%	9.9%	8.2%	22.3%
2.6%	Approved Training [RHT]				46.1%		5.4%	13.7%		8.5%	11.2%
1.8%	Medical Rehabilitation [RHM]	9.5%	11.6%	14.4%			6.5%	8.5%	12.1%	10.1%	15.8%

N = 15,654

Notes: % Total Cases with Code is the percent among the entire universe of disability management cases (120,416). For all codes in the Vocational Rehabilitation Phase, less than 5% of occurrences were followed by a nurse action or INV, MRI, or ZZZ*. Therefore, these codes are not included in this transition table. An asterisk (*) indicates this code does not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.



Table 13: Transition Matrix for Other Activities

% Total Cases with Code	Other Activity [Code]	Nurse Phase			Vocational Rehab Phase Start of Vocational Rehabilitation [RHR]	Other Disability Management Activities					Return to Work	
		Nurse Phase [NSN]	30-day Extension Granted [NF3]	60-day Extension Granted [NF6]		Other Intervention by CE [OIC]	Letter Sent [LET*]	Second Opinion Report [MSI]	Referee Report Scheduled [MRI]	Interruption [INT*]		
34.9%	Other Intervention by CE [OIC]	37.6%						9.8%			33.9%	
3.9%	Nurse or Rehabilitation via CE [INV]		10.2%	13.7%			11.5%	12.3%	7.8%		34.8%	
22.5%	Letter Sent [LET*]	16.3%			6.6%		8.2%		30.3%		21.2%	
26.3%	Second Opinion Report [MSI]	5.7%			16.6%		13.6%	19.9%		12.9%	21.8%	
5.8%	Referee Report Schedule [MRI]				21.1%		12.4%	26.3%	13.0%		17.5%	
10.9%	Interruption [INT*]		6.1%	7.2%			5.4%	8.0%	20.3%		33.4%	
2.0%	Non-Cooperation [ZZZ*]	5.3%			8.2%		7.7%	10.4%	20.8%		6.0%	24.1%

N = 120,029.

Notes: % Total Cases with Code shows the entire universe of disability management cases (120,416). For all codes that could occur in any phase, less than 5% of occurrences were followed by RHH, RHD, RHP, RHT, or RHM. Therefore, these codes are not included in this transition table. An asterisk (*) indicates this code does not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.



The study also included Vocational Rehabilitation Phase transition matrices for key subpopulations, such as USPS versus non-USPS workers and injured workers with occupational illness versus traumatic injuries (see **Appendix D**). In this analysis, there were significant differences between the USPS workers and non-USPS workers. USPS workers experienced Placement with Previous Employer as the first step in the Vocational Rehabilitation Phase more frequently than non-USPS workers by 10 percentage points, while non-USPS workers more frequently experienced Plan Development. Among workers who experienced Plan Development, USPS workers more frequently received training as the next step (6%), while non-USPS workers more frequently experienced attempts for Placement with New Employer (8%). The following section further discusses these differences.

4.2.2 Disability Management Paths Associated with Return-to-Work

This section discusses the paths taken by claimants in disability management. The transition matrices in the previous section show us the pairs of events that occur together, but the sequence diagrams in this section show multi-step series of events. These sequence diagrams also provide information on the paths taken by USPS and non-USPS subpopulations of workers. The report emphasizes these subpopulations because they were the only ones with notable differences. This section also discusses the association between these paths and return-to-work outcomes.

Sequence Diagrams



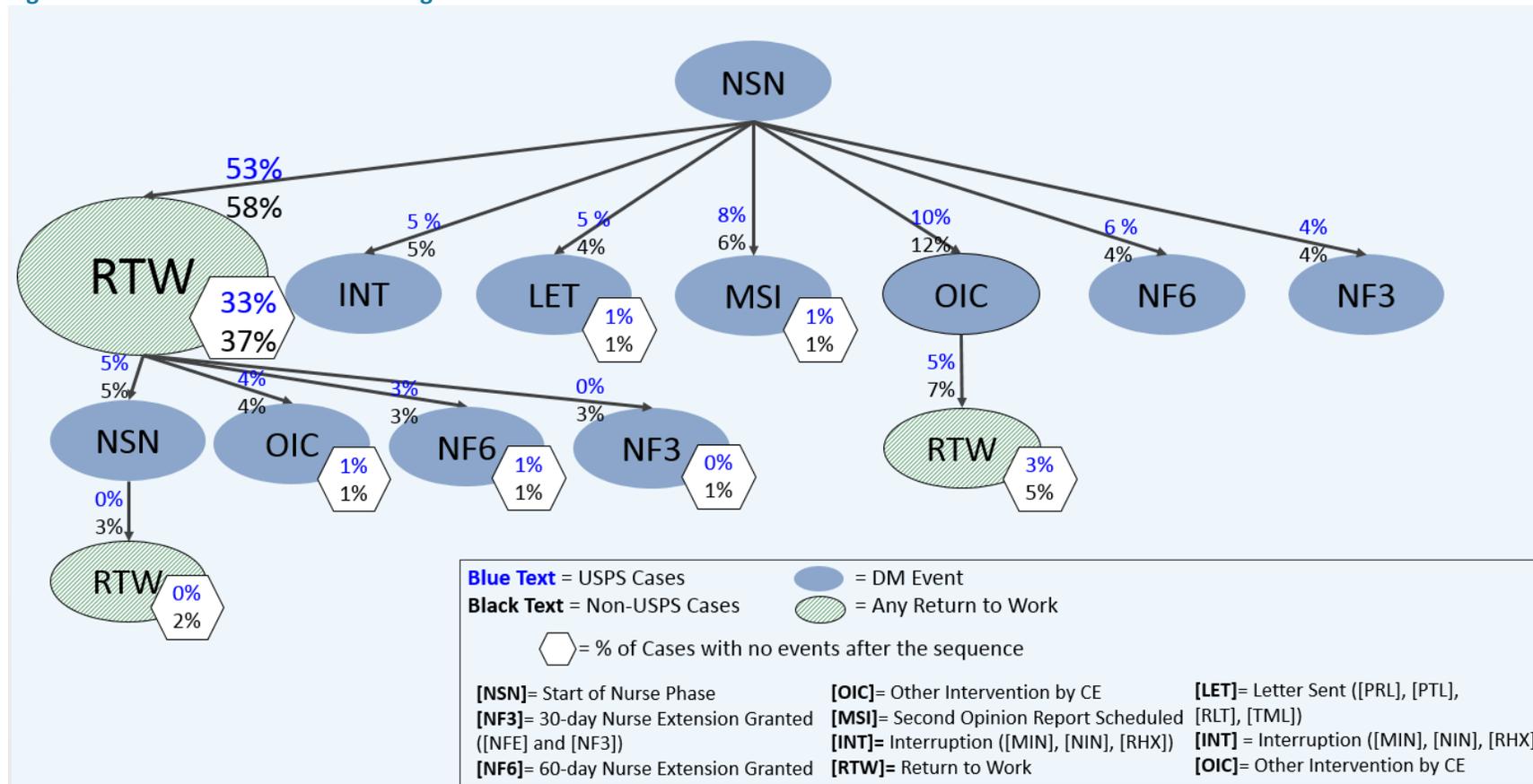
Sequence diagrams illustrate multi-step events (read from top to bottom). The first node represents the starting population. The branches from this node show the percent of the population progressing down each path to the next node. Hexagons mark the percent of the population whose sequences end at each node and do not progress further. Blue text indicates the percent for USPS workers, while black text indicates the percent for non-USPS workers. Only nodes reached by at least 1% of the starting population appear in the diagram.

Nurse Phase

Figure 7 shows the paths injured workers followed after entering the Nurse Phase. Over half of injured workers who entered the Nurse Phase returned to work as the next step. One third of the claimants who entered the Nurse Phase had no further actions after the initial return-to-work. This finding is true for both the USPS population (33% of those that entered the Nurse Phase) as well as the non-USPS population (37%). Overall, the results for the USPS population and non-USPS population are similar.



Figure 7: Paths Followed After Entering the Nurse Phase



N = 106,086

Note: The numbers in blue represent the proportion of the USPS population that followed the path indicated, while the numbers in black represent the proportion of the non-USPS population that followed the path indicated. The denominator is the same for all numbers in blue, and the same for all numbers in black. DM= Disability Management, CE= Claims Examiner.



To identify the sequences most often associated with return-to-work, the study included the same association mining analysis used in Section 3. Slightly more than half of workers who entered the Nurse Phase immediately returned to work as their next step. The study excluded these quick-returning-workers (53% of USPS workers and 58% of non-USPS workers) from the association analysis to focus on differences among injured workers who received later services. Including quick-returning-workers would have dominated the results and drowned out differences among workers who received additional disability management services.²²

Table 14 shows the association analysis results. Association rules do not identify causal relationships. However, the following disability management activities were associated with higher return-to-work outcomes in the data: 30-Day and 60-Day Extension, Other Claims Examiner Intervention, and Interruption. Conversely, the following disability management activities were associated with lower return-to-work outcomes: Letter Sent and Second Opinion. The USPS and non-USPS populations showed similar patterns for return-to-work associations, except for the 60-day Extension, where USPS workers who received the extension had a higher association with returning to work than non-USPS workers.

These relationships only indicated associations and were not necessarily causal. For example, the CE assigned nurse extensions when a change in case status or return-to-work seemed imminent. Accordingly, the extensions were associated with greater return-to-work rates. On the other hand, second opinions were requested for cases where the physician indicated a need for work accommodations, or that return-to-work may not be possible. Therefore, these activities were associated with lower return-to-work outcomes.

Table 14: Lift on Return-to-Work for Nurse Sequences

	Population of Workers Assigned a Staff Nurse, Excluding Immediate Return-to-Work	Subpopulation	
		USPS	Non-USPS
Cases in Population	48,093	29,616	18,474
Return-to-Work Percentage for Population	65.8%	66.8%	64.3%
30-Day Extension [NF3]	22% (13%)	16% (9%)	11% (8%)
60-Day Extension [NF6]	16% (11%)	18% (12%)	9% (8%)
Other Claims Examiner Intervention [OIC]	22% (23%)	20% (20%)	25% (27%)
Letter Sent [LET*]	-24% (10%)	-22% (10%)	-27% (9%)
Interruption [INT*]	11% (12%)	11% (12%)	9% (12%)
Second Opinion [MSI]	-26% (14%)	-24% (15%)	-30% (12%)

N = 106,086

Note: This table shows lift on the left and the proportion of the analysis population who received each service in parentheses on the right. A positive number for lift indicates a positive association with return-to-work, while a negative number indicates a negative association with return-to-work.

An asterisk (*) indicates this code did not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.

²² The analysis included the characteristics of workers who immediately returned to work following the nurse phase, relative to those that entered the nurse phase and did not immediately return to work, and found the following: less frequent back injuries (6 percentage points), more frequent knee injuries (5 percentage points), more frequent sprains (6 percentage points), greater proportion of male workers (6 percentage points), and greater proportion of cases adjudicated within 30 days of receipt by DOL (7 percentage points). Appendix E includes more details.

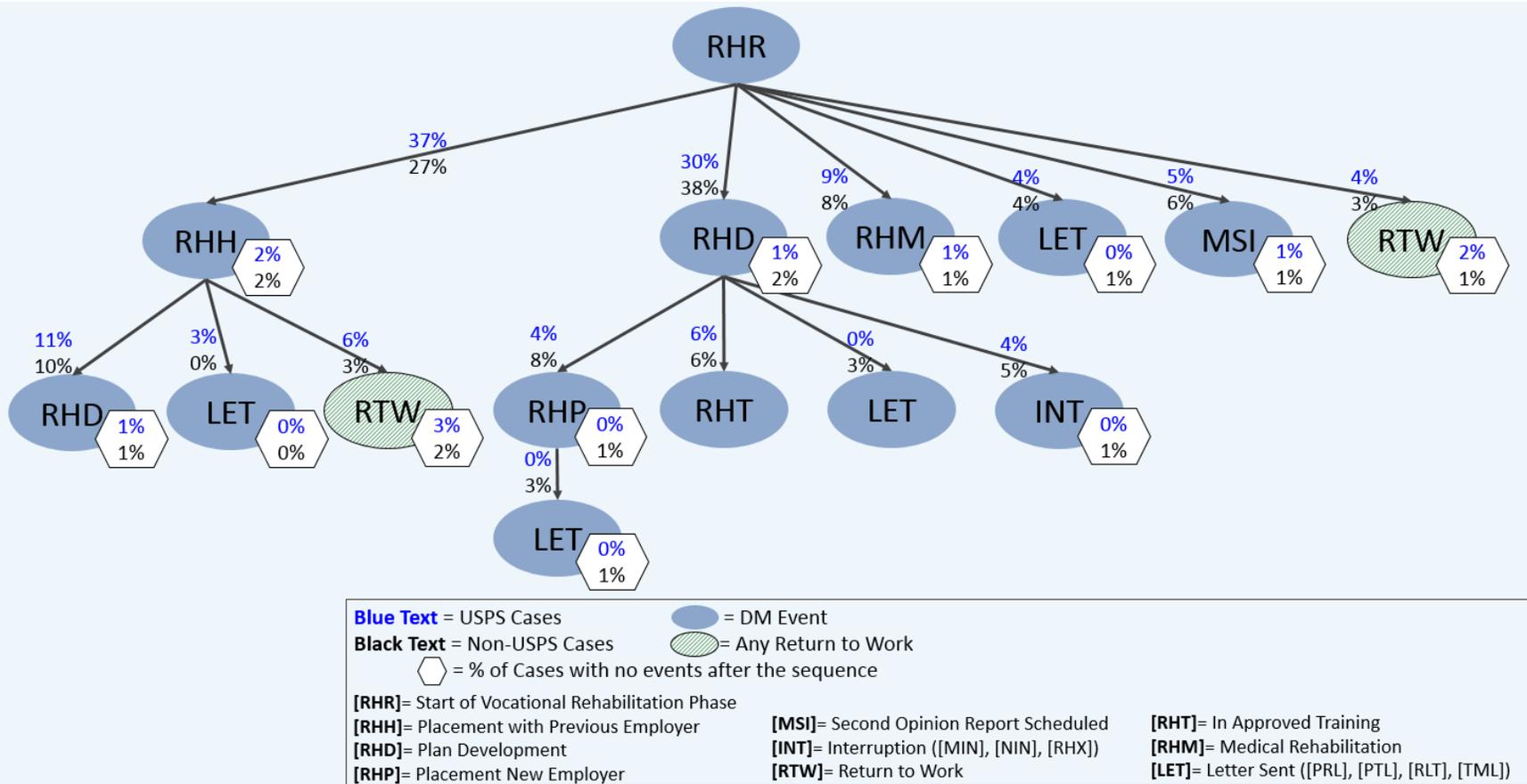


Vocational Rehabilitation Phase

Figure 8 shows the paths injured workers followed after entering the Vocational Rehabilitation Phase. The USPS and non-USPS populations experienced slightly different paths in the Vocational Rehabilitation Phase, particularly in the transition from the start of vocational rehabilitation to either Placement with Previous Employer [RHH] or Plan Development [RHD].



Figure 8: Paths Followed After Entering the Vocational Rehabilitation Phase



N = 15,654. DM= Disability Management, CE= Claims Examiner.



The analysis of the sequences in the Vocational Rehabilitation Phase was similar to the analysis of sequences in the Nurse Phase. **Table 15** shows these results. The first part of the table shows lifts and proportions for the first action following the start of the Rehabilitation Phase, while the second part of the table shows two-step sequences of actions.

Table 15: Lift on Return-to-Work for Vocational Rehabilitation Sequences

	Workers Assigned a Rehabilitation Specialist, Excluding Immediate Return-to-Work	Subpopulation	
		USPS	Non-USPS
Cases in Population	14,839	9,292	5,547
Return-to-Work Percentage for Population	57.7%	59.8%	54.1%
First Action After RHR			
Placement with Previous Employer [RHH]	7% (33%)	6% (36%)	7% (27%)
Plan Development [RHD]	2% (32%)	2% (29%)	2% (36%)
Medical Rehabilitation [RHM]	10% (9%)	12% (9%)	2% (8%)
Letter Sent [LET*]	-11% (4%)	-15% (4%)	-4% (4%)
Second Opinion [MSI]	-29% (5%)	-30% (5%)	-28% (6%)
Sequences of Actions			
Placement with Previous Employer [RHH], Plan Development [RHD]	-11% (4%)	-7% (11%)	-20% (10%)
Plan Development [RHD], Placement with New Employer [RHP]	-4% (5%)	-11% (4%)	5% (7%)
Plan Development [RHD], In Approved Training [RHT]	5% (6%)	2% (7%)	12% (6%)
Plan Development [RHD], Interruption [INT*]	-21% (4%)	-15% (4%)	-27% (5%)

N = 15,654

Note: This table shows lift on the left and the proportion of the analysis population receiving each service in parentheses on the right. A positive number for lift indicates a positive association with return-to-work, while a negative number indicates a negative association with return-to-work.

* An asterisk (*) indicates this code did not appear in the raw data; it represents a combination of codes. See **Appendix A** for details.

The following first actions in the Vocational Rehabilitation Phase had consistent associations:

- Associated with higher return-to-work rate:
 - Medical Rehabilitation [RHM] as the first rehabilitation action
- Associated with lower return-to-work rate:
 - Letter Sent [LET*] as the first rehabilitation action
 - Second Opinion [MSI] as the first rehabilitation action

The following first actions in the Vocational Rehabilitation Phase had different associations, depending on later actions in the sequence or the population:

- Placement with Previous Employer [RHH] as the first rehabilitation action was associated with higher return-to-work outcomes, except when it was followed by Plan Development [RHD]—this sequence was associated with lower return-to-work outcomes.
- Plan Development [RHD] as the first rehabilitation action essentially had no effect (2% lift for overall population and all subpopulations).



- Plan Development [RHD] followed by Training [RHT] was associated with higher return-to-work outcomes, especially for the non-USPS population.
- Plan Development [RHD] followed by an Interruption [INT*] to disability management, such as a pregnancy or other injury, was associated with lower return-to-work outcomes for all subpopulations.
- When the first rehabilitation action was Plan Development [RHD] and the second was Placement with New Employer [RHH], USPS workers experienced lower return-to-work levels, and non-USPS workers experienced higher return-to-work levels.

Overall, cases that received nurse services including extensions [NSN, NF3, and NF6] or Other Claims Examiner Interventions [OCI] after entering the Nurse Phase were associated with greater rates of return-to-work. A small proportion of the population (13%) progressed to vocational rehabilitation. Cases that received Medical Rehabilitation [RHM] as the first action after entering this phase were associated with greater return-to-work rates. Letters [LET] were associated with lower levels of return-to-work in all phases.

4.3 TIMING OF DISABILITY MANAGEMENT ACTIVITIES

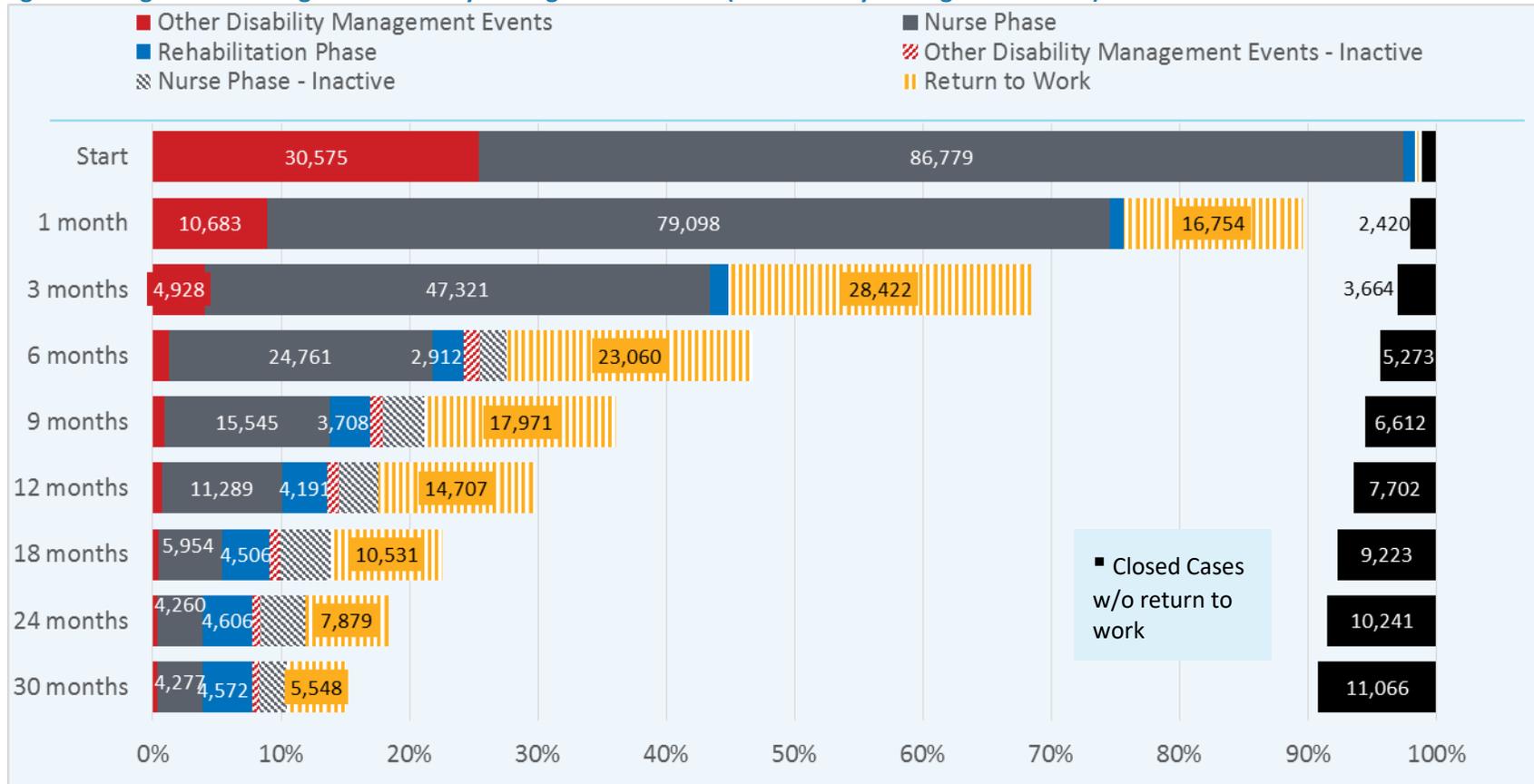
Figure 9 and **Figure 10** illustrate the phases injured workers were in at different points in time of the disability management program. As time progresses, cases closed and the population of open cases quickly shrunk. Note that most closed cases represented workers who had returned to work, but not all. Sometimes, OWCP closed the case because the injury was so severe (e.g., *Permanent Total Disability Determination*). These cases are represented by the black bar on the right of the figure.

- **At the start** of each disability case, most workers (72%) experienced some sort of nurse service as their first disability management event. A very small number (<1%) of workers received rehabilitation services first, and approximately a quarter began disability management with some other service.
- **At 1 month**, injured workers started returning to work: some returned to work fully or had their case closed (8%), while others returned to work without having their cases closed (14%).
- **By 6 months**, 53% of the disability management cases were closed. An additional 19% involved open cases for workers who had already returned to work in some capacity. Additionally, the number of cases receiving vocational rehabilitation services increased (2%).
- The number of **inactive disability management cases** also increased after 6 months. Cases outside the Vocational Rehabilitation Phase were considered inactive if they had received no disability management services for over 4 months. This was likely due to a lag between the Nurse Phase and Vocational Rehabilitation Phase. The median time between the start of the Nurse Phase and the start of vocational rehabilitation was 14 months.
- At 12 months, 76% of workers returned to work, representing 93% of workers who ever return to work.

Figure 10 illustrates the different phases for active cases over time. At 18 months, over 20% of injured workers with active cases were in the Rehabilitation Phase; most of the other workers already returned to work and/or had a closed disability management case. **Appendix F** has additional detail on the timing of key disability management milestones.



Figure 9: Progression through the Disability Management Process (All Disability Management Cases)

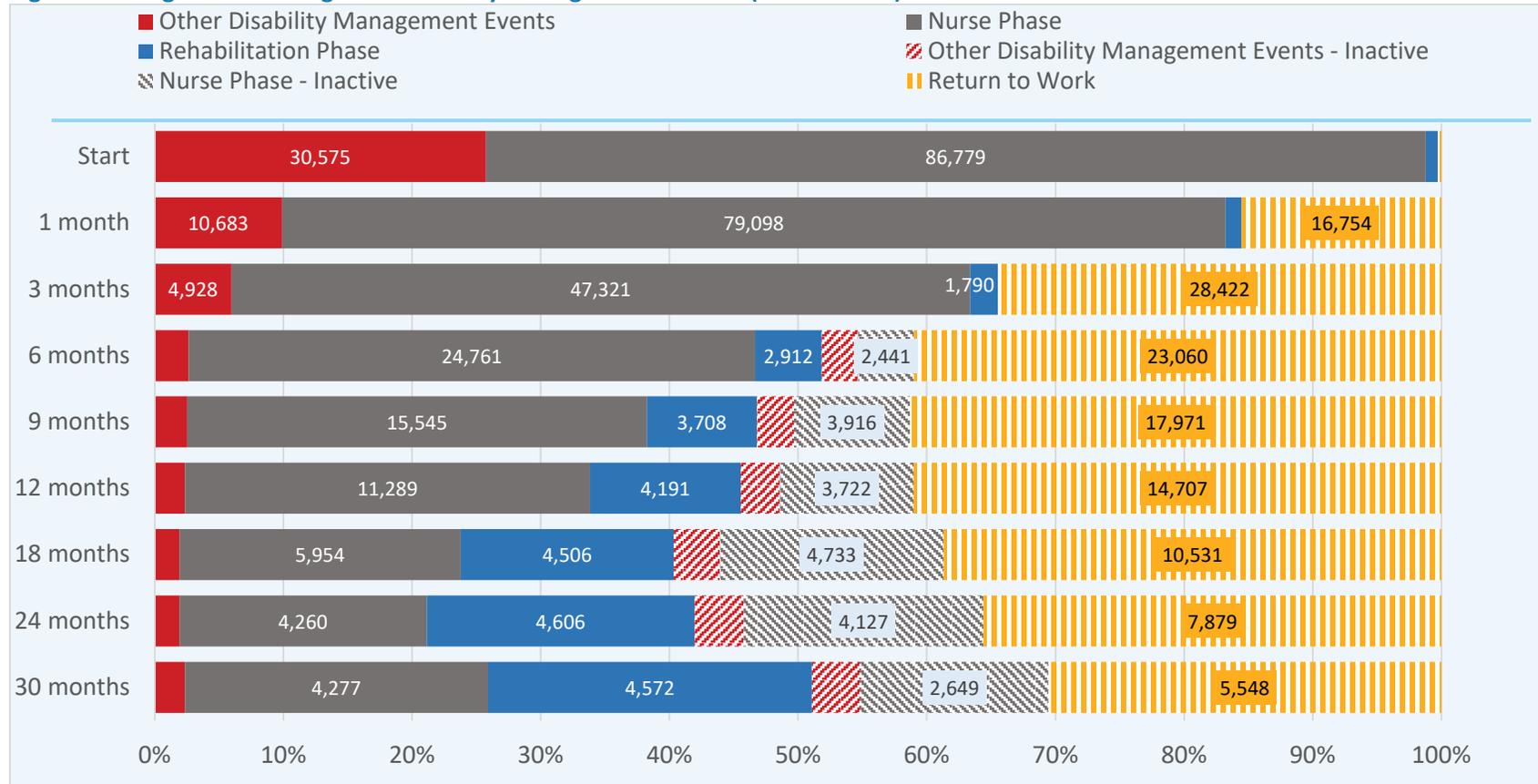


N = 120,416

Notes: For simplicity, all disability management codes that start with N are included in the “Nurse Phase” and all disability management status codes that start with “R” are included in the “Rehabilitation Phase,” with the exception of those that indicate a return-to-work. “Nurse Phase – Inactive” and “Other Disability Management Events – Inactive” represent cases that at one point received nurse or other disability management activities, respectively, and have received no other services for at least 4 months at the point in time indicated.



Figure 10: Progression through the Disability Management Process (Active Cases)



N = 120,416

Notes: For simplicity, all disability management codes that start with N are included in the “Nurse Phase” and all disability management status codes that start with “R” are included in the “Rehabilitation Phase,” with the exception of those that indicate a return-to-work.



5 WHAT DISABILITY MANAGEMENT APPROACH AND CASE MANAGEMENT CUT-OFFS ARE CORRELATED WITH WORKERS RETURNING TO WORK?

Whereas Sections 3 and 4 use univariate analyses to study the association among injury, claim, and claimant characteristics and outcomes of interest, this section examines whether the disability management program (*program*) and nurse or vocational rehabilitation services (*individual components*) improved the return-to-work rate.

This section also examines the short- and long-term associations (*dosage effect, the extent of an effect over time*) of the services with return-to-work. Namely, the association with return-to-work rate near receipt of services and the long-term association with return-to-work. The multivariate approach is more robust as the model considers the offsetting effects of other covariates on the return-to-work rate. Using a hazard model helps estimate the number of injured workers expected to return to work while considering injury, claim, and claimant characteristics.

This analysis examines whether the program (or its individual components) preceded pivotal times where workers had a high return-to-work rate. This analysis focuses on the 12- and 24-month marks highlighted in the univariate analyses as highly associated with return-to-work and the close of a disability management case. It considers whether these markers would be appropriate transition points between Quality Case Management and Periodic Roll Management, currently set at 30 months. This analysis presents findings for an injured worker's first and last return-to-work to capture the full arc of recovery (see Section 2.2 and **Appendix G** for a discussion of the nuances in return-to-work).

The results show a positive association between disability management and return-to-work. Controlling for injury, claimant, and claim characteristics, the program and individual components had a positive association with return-to-work. Workers across all subpopulations are expected to return-to-work within 12 and 18 months.

Although the analyses do not imply causality, one interpretation is that OWCP could change the thresholds between Quality Case Management and Periodic Roll Management without affecting many workers. Less than 1% of the injured workers in the dataset returned to work between 24 and 30 months in disability management. However, the analysis explores the 17 years of data available to determine which injured workers would be affected by a change in the bifurcated system.

5.1 MODELING DISABILITY MANAGEMENT ACTIVITIES AND RETURN-TO-WORK

The study uses a survival model (specifically a Cox Proportional-Hazard Model) to estimate the relationship among injury, claim, and claimant characteristics and the number of months before return-to-work. In addition to the case characteristics discussed in previous sections, the analysis includes *lost production days* as a proxy for injury severity and the year DOL received the disability claim as a proxy

Survival Models

Survival models estimate the percentage of remaining members at specific time intervals. For the study, injured workers in disability management make up the group, and return-to-work is the event marking a member's exit from the group. 

A **Cox Proportional-Hazard model** determines the association between disability management services and the number of months until return-to-work.

Hazard ratios measure whether certain characteristics improve return-to-work rates. A hazard ratio greater than one indicates a positive association with return-to-work.



for unobserved changes in the program over time.

The analysis examined the *association between the program and the individual components* (nurse and vocational rehabilitation) and the return-to-work rate. This section defines disability management services in two ways: (1) a collection of *indistinct* services offered throughout the program duration and (2) distinct nurse or vocational rehabilitation services. The first measure reflects the program’s global effect. The second measure states that nurse (or vocational rehabilitation) services have a distinct and direct association with return-to-work.

The study also measured the effect of a covariate over time, called the *dosage effect*. For example, one can argue that once an injured worker received nurse services, the worker’s injury improved, resulting in a long-term association with return-to-work, regardless of the duration and timing of services. Another argument is that the association between a service and return-to-work may be more substantial during service delivery than six months from when the worker received services. This study used two measures to examine dosage effect: (1) the period when services were rendered (the short-term effect) and (2) the period from initial delivery until the moment when the injured worker exited disability management (long-term effect).

In similar literature, most survival analyses assume constant covariates over time. The models in this study include this type of covariate. For example, age at injury is fix and remains constant throughout the disability claim, regardless of the disability management duration. However, to account for timing, services could be either active or inactive at different points. For example, an injured worker did not receive services every month while in the vocational rehabilitation phase. Consequently, the models include covariates for service delivery that changed over time, a technical but important distinction that helps measure the dosage effect.

Model 1 assessed the association between disability management services (regardless of type) and return-to-work over time compared to a worker who did not receive these services. Models 2, 3, and 4 are variants of the basic Model 1. **Table 16** describes the survival models that measure the program, individual components, and dosage effects’ association with return-to-work. These models are not competing and offer additional insights on the association between the program services and return-to-work.

Ultimately, the models identify opportunities for OWCP to focus on specific services and when (or not) to provide these services to improve the return-to-work rate. For example, should OWCP offer

Definition of Active Services



OWCP’s disability case management system only tracks the beginning of each service (i.e., the date OWCP assigns a nurse). It does not specify when services cease. We use several assumptions to define the point at which OWCP no longer provides a service.

Nurse services last four months after the initial nurse assignment. OWCP may extend nurse services by one or two months for a total of five or six months of active nurse support.

The analysis assumed **vocational rehabilitation services** last four months after initial assignment of the vocational rehabilitation specialist, based on the expected duration of each vocational rehabilitation component.



vocational rehabilitation services independent of nurse services? If so, will offering these services early in the claim process substantially affect return-to-work? Or, should OWCP only offer rehabilitation services in the first 12 months of the program to maximize the benefits?



Table 16: Survival Models—Modeling the Effect of Disability Management Services

Model	Disability Management Covariates	Primary Effect	Covariate Definition
Model 1	Program	Measures the contribution of the disability management program in <i>all its components</i> . This model accounts for the long-term effect of the program.	0 for months when workers are in disability management but have not yet received nurse or vocational rehabilitation services. 1 in the month the worker first receives one of these services to the end of disability management.
Model 2	Active Program Services	Measures the contribution of the disability management program in <i>all its components</i> . This model accounts for the <i>short-term</i> effect of the program. The program only contributes to the return-to-work rate while services are being delivered.	0 for months when workers are in disability management but are not receiving nurse or vocational rehabilitation services. 1 in the months when a worker is receiving active nurse or vocational rehabilitation services.
Model 3	Nurse, Vocational Rehabilitation	Measures the contribution of the each of the disability management phases to the return-to-work rate <i>independently</i> . This model accounts for the <i>permanent</i> effect of each phase.	Nurse and vocational rehabilitation indicators are 0 in the months before each of these services occurs. Each indicator equals 1 in the first month each respective service occurs and remains 1 for the remainder of a worker’s disability management record.
Model 4	Active Nurse Services, Active Vocational Rehabilitation Services	Measures the contribution of each type of service to the return-to-work rate <i>independently</i> . This model accounts for the <i>short-term</i> effect of each phase.	0 for months when workers are in disability management but do not receive nurse or vocational rehabilitation services. 1 in the months when a worker receives active nurse or vocational rehabilitation services.

In **Table 17**, the program variable has a larger hazard ratio than many of the other variables (e.g., types and natures of injury, gender, and timing), suggesting this component significantly contributed to the worker’s chances of returning to work. Some variables, while statistically significant, are very close to 1, indicating a neutral association with return-to-work.

Few variables have negative associations with both first and last return-to-work. For example, traumatic injury has a substantial, negative association with first return-to-work (signified by a coefficient less than 1 at a significance level of 0.001). However, traumatic injury has a substantial, positive association with last return-to-work with a coefficient greater than 1 at a significance level of 0.001. The table excludes coefficients that are not statistically significant at the 0.05 level. For example, fracture does not have a statistically significantly association with either first or last return-to-work.



Table 17: Survival Model (1) —Program-Level Coefficient Estimates

Control Variable	Reference Category	Model Hazard Ratios—First RTW	Model Hazard Ratios—Last RTW
Program	No Services	2.09***	1.52***
Days from receipt to adjudication		1.00***	1.00***
Days from adjudication to entering disability management		1.00***	1.00*
Year the worker entered disability management			1.07***
Traumatic Injury	Occupational Illness	0.87***	1.07***
Interaction: Traumatic Injury and Days from receipt to adjudication of the claim		1.00***	
Interaction: Traumatic Injury and Days from adjudication to entering disability management		1.00**	1.00***
Fracture			
Sprain	Back	1.10***	
Other		1.07***	
Hand		1.25***	1.22***
Head	Back	0.86***	0.95*
Shoulder		1.16***	
Other		1.15***	1.09***
Male	Female	1.02***	1.09***
30–39 years old			0.88***
40–49 years old			0.84***
50–59 years old	Under 30 years old		0.86***
Over 60 years old		0.92***	0.91***
USPS	Non-USPS		1.05***
Lost Production Days		0.99***	0.99***

N = 120,343

Note: We exclude coefficients that are not statistically significant. Asterisks denote level of statistical significance, * p<0.05, ** p<0.01, *** p<0.001. Models are estimated on 120,412 disability management cases.



Defining the disability management services and switching the outcome to first or last return-to-work changed the association between the disability management variables and the outcomes. These associations are consistently positive, but the extent depends on the measure used during survival analysis. **Table 18** shows the association between the covariates of interest and the return-to-work rate, measured as a hazard ratio.

Table 18: Summary of Hazard Ratios for Disability Management Services—Alternate Model Specifications

Model	Disability Management Covariates	Model Hazard Ratio— First Return-to-Work	Model Hazard Ratio— Last Return-to-Work
Model 1 (Primary)	Program	2.09***	1.52***
Model 2	Active Program Services	1.40***	1.12***
Model 3	Nurse	2.13***	1.51***
	Vocational Rehabilitation	1.36***	1.49***
Model 4	Active Nurse	1.41***	1.13***
	Active Vocational Rehabilitation	1.22***	1.05

N = 120,343

Note: Asterisks denote level of statistical significance, * p<0.05, ** p<0.01, *** p<0.001. Models are estimated on 120,412 disability management cases.

The analysis resulted in the following key findings:

- **Program—Model 1** shows that workers who received program services were twice as likely (hazard ratio of 2.09) to return to work as those who did not.
- **Individual Components—**Previous analyses showed a positive association between nurse services and return-to-work. Model 3 shows a substantially larger positive association between nurse services and return-to-work than between vocational rehabilitation’s association and return-to-work. Accordingly, nurse services appear to drive the program estimate as this specific component measure has an even larger hazard ratio (2.13) than the hazard ratio associated with the program measure in Model 1 (2.09).
- **Active Services—**Model specifications defining a short-term association with return-to-work yield smaller hazard ratios than models focused on the long-term association with the program. However, the short-term associations were still substantive (approximately 40% more likely to return to work at a specific point when receiving services than when not receiving services). These findings applied to both active program services (Model 2) and active nurse and vocational rehabilitation services (Model 4).
- **First and Last Return-to-Work—**The study expected a larger association between services and a worker’s initial transition back to work than with the worker’s last return-to-work. One explanation is that services may have a marginal role on subsequent return-to-work outcomes as compared to the first return-to-work. A comparison of the two columns in Model 4 shows that nurse (1.41) and vocational rehabilitation (1.22) have a larger association with first return-to-work (1.13) than with last return-to-work (1.05).



5.2 ANALYZING TIME-SPECIFIC CASE MANAGEMENT THRESHOLDS

The above estimates explore expectations for how many months an injured worker was in disability management and how these estimates differ by injury and claimant and claim characteristics. **Table 19** shows predicted baseline cumulative hazard for four key groups: USPS workers with occupational illnesses, USPS workers with traumatic injuries, non-USPS works with traumatic injuries, and non-USPS workers with occupational illnesses. These subgroups represent another layer of subpopulations. Cumulative hazard shows how the likelihood of returning to work grows month by month. For workers with traumatic injury employed by USPS, the model suggests an expected return-to-work by month 10, when the cumulative hazard is greater than 1. For USPS workers with occupational illnesses and non-USPS workers with traumatic injuries, the model estimates an additional month in disability management. Additionally, the model predicts that non-USPS workers with occupational illness would experience the longest period of disability management before achieving their final return-to-work.

Table 19: Model 1—Program-Level Baseline Cumulative Hazard for Months 1–30, Last Return-to-Work

Month	USPS Occupational Illness	USPS Traumatic Injury	Non-USPS Traumatic Injury	Non-USPS Occupational Illness
1	0.10	0.11	0.10	0.10
2	0.20	0.21	0.20	0.19
3	0.31	0.33	0.31	0.29
4	0.42	0.45	0.43	0.40
5	0.53	0.57	0.54	0.50
6	0.63	0.67	0.64	0.60
7	0.72	0.77	0.73	0.68
8	0.80	0.86	0.82	0.76
9	0.88	0.95	0.90	0.84
10	0.96	1.03	0.97	0.91
11	1.03	1.10	1.05	0.98
12	1.10	1.18	1.12	1.04
24	1.77	1.90	1.81	1.68
30	2.15	2.31	2.19	2.04

N = 120,343

The survival model supports the intuition gained from conducting univariate analyses on the disability management population: *the majority of the workers in disability management returned to work within a year of entering disability management*. However, the model also allows us to test whether certain subpopulations experienced significantly longer disability management periods. There were indeed some differences, such as the additional time expected in disability management for workers with occupational illness, but these differences were small to moderate when controlling for other characteristics of workers and their injuries (as **Table 17** and **Table 19** illustrate).

Bifurcated Management System and Alternative Thresholds—OWCP’s existing system uses month 30 as the point for workers to transition away from receiving active disability management services. However, findings suggest this transition point could occur sooner as most workers who returned to work returned well before the 30-month mark. Furthermore, based on observable characteristics alone, the analysis did not identify any specific subpopulations that are expected to approach 30 months in disability management before returning to work.



Ceasing to offer disability management services after the first 24 months (or even 12 months) of disability management would not have affected the majority of workers in the 2001 to 2017 study period. **Table 20** shows that the vast majority of workers who received nurse services (99%) were assigned those nurses in their first year of disability management. However, the timing of vocational rehabilitation, a much less common service, was more varied. A 24-month cutoff of services would affect 30% of the injured workers who received vocational rehabilitation in past years. These workers made up less than 3% of all injured workers in disability management. If OWCP had implemented a strict 24-month cutoff to services, those workers would not have received vocational rehabilitation.

Table 20: Timing of Nurse and Vocational Rehabilitation Services

Months in Disability Management	Nurse Services Provided	Vocational Rehabilitation Services Provided
< 12 months	104,589 (98.6%)	7,164 (45.6%)
12–23 months	566 (0.5%)	3,822 (24.4%)
24–29 months	187 (0.2%)	1,292 (8.2%)
≥ 30 months	757 (0.7%)	3,412 (21.8%)
Total Number of Workers Receiving the Service	106,099	15,690

Note: This table excludes instances where workers received nurse services at different times in the disability management program.

To understand how the timing of vocational rehabilitation intersects with return-to-work, the study explored how often workers received vocational rehabilitation but never returned to work, how often workers had already returned to work in some capacity before entering vocational rehabilitation, and how often workers experienced a change in employment status after receiving vocational rehabilitation services. **Table 21** shows that, after 24 months in disability management, injured workers who received vocational rehabilitation had already returned to work in some capacity before receiving this service. The data also shows that workers were most likely (52%) to return to work after receiving vocational rehabilitation services if those services were delivered in the first year. Among injured workers who received vocational rehabilitation services in month 30 or later, 30% subsequently returned to work, the lowest rate of return-to-work *after* receiving vocational rehabilitation.

Table 21: Returning to Work Before and After Entering Vocational Rehabilitation

Months in Disability Management	Number of Workers Entering Vocational Rehabilitation	Any Return-to-Work	Return-to-Work Before Vocational Rehabilitation	Return-to-Work After Vocational Rehabilitation
< 12 months	7,164	4,210 (58.7%)	823 (11.5%)	3,741 (52.2%)
12–23 months	3,822	2,110 (55.2%)	1,185 (31.0%)	1,457 (38.1%)
24–29 months	1,292	707 (54.7%)	469 (36.3%)	412 (31.9%)
≥ 30 months	3,412	2,379 (69.7%)	2,117 (62.1%)	1,024 (30.0%)

N=15,690

Note: Some injured workers return to work more than once. Therefore, rows will not sum to the total number of workers entering vocational rehabilitation in each time period.



6 CONCLUSIONS

Findings from the 17 years of disability management cases included in this analysis have important implications for OWCP’s disability management program. Both the descriptive statistics and the statistical analyses showed that 82% of injured workers returned to work, many at full capacity (or close to) and within the first 12 months of opening their disability management case. This study only considers the return-to-work outcome, and does not include other disability management resolutions that could be considered successful due to reduction in benefits paid.

A number of injured workers, generally cases with severe occupational illness, experienced delayed reentry into the labor market. However, these workers did return to work within 24 months of entering the disability management program. After 24 months in disability management, 80% of injured workers had returned to work, yet few of the remaining workers returned to work in any capacity.

Table 22 summarizes the study findings by research question.

Table 22: Summary of Findings per Research Question

Research Questions	Findings
1. Which characteristics of disability claims and claimants are more strongly associated with return-to-work outcomes?	Injury location, nature, and cause were associated with injured workers both returning and not returning to work. This finding is consistent across disability management subpopulations. See Section 3, Table 5
2. Which OWCP actions (claims examiner adjudication, second opinion examinations, nurse interventions, and vocational rehab) are more strongly associated with return-to-work outcomes? Specifically, using the Disability Management intervention codes, which interventions and intervention patterns are associated with return-to-work outcomes?	Nurse services were the most common service offered to injured workers. More than 50% of injured workers returned to work after receiving nurse services without any additional disability management activities. See Section 4.
3. Which pre-claim characteristics (claimant and incident) are more strongly associated with prolonged disability periods?	Injury characteristics were associated with both longer and shorter durations of disability management. Type of injury (traumatic versus occupational) and employing agency correlated with intervals in disability management. Claimants took longer to return to work when there were delays in disability management adjudication and when there were extended periods between DOL’s receipt and adjudication of a claim. See Section 3.
4. Is the current bifurcated case management threshold (i.e., 30 months) highly correlated with workers returning to work or are alternative cut-offs (e.g., 12 months, 24 months, 36 months, or other) more closely correlated with a return-to-work?	Disability management services were associated with injured workers returning to work during the first 12 months of a case across all subpopulations. Most injured workers returned to work within 18 to 24 months in disability management. Nurse services were highly associated with return-to-work events. See Section 5.

This report demonstrates the direct and substantial relationship between disability management services and the two study outcomes (return-to-work and closing of a disability management case). The timing and sequence analyses in this study provides valuable information about alternate time thresholds to implement the passive phase of OWCP’s disability management program. The data over the last 17 years showed that injured workers in large numbers (>80%) returned to work and workers



returned promptly (72%) within 12 months. These trends continued to be substantial at the 18- and 24-month marks in the program. These findings suggest that the Periodic Roll Management could start earlier than the current 30-month threshold and still achieve similar outcomes of return-to-work for injured workers. The last 6 months of services helped very few workers (less than 1%) returned to work between 24 and 30 months in disability management.



Appendix A DATA MANAGEMENT AND CLEANING

This appendix describes the process for compiling and linking data used for this study. Additionally, this appendix describes the variable recoding and filtering steps taken, as well as definitions for key analysis variables.

It is organized into the following sections:

- **Compiling Data for Analysis**—describes the separate database tables received and how they were linked to construct our data for analysis
- **Data Filters**—describes exclusions applied to get the analysis population
- **Data Dictionaries**—defines key analysis variables and how they were constructed
- **Recoding Variables**—describes recoding done of different variables; this concerns variables that were combined or categorized
- **Coding Disability Management Phases and Key Events**—describes how disability management phases and key events were coded

Compiling the Data for Analysis

The data for this study come from two OWCP internal databases:

- **Case management system**—This system tracks every federal disability claim, including claimants who returned to work immediately.
- **Disability management system**—This system tracks all interventions and activities associated with claimants who entered OWCP’s disability management system. Records in this system are a subset of the first, and, in general, only more serious cases of disability were added to the disability management system.

For this study, OWCP analysts extracted all cases in disability management with activity from 2005 to 2017. Data from both the case management and disability management system are stored in relational databases. **Table A-1** shows the database tables used for this study.

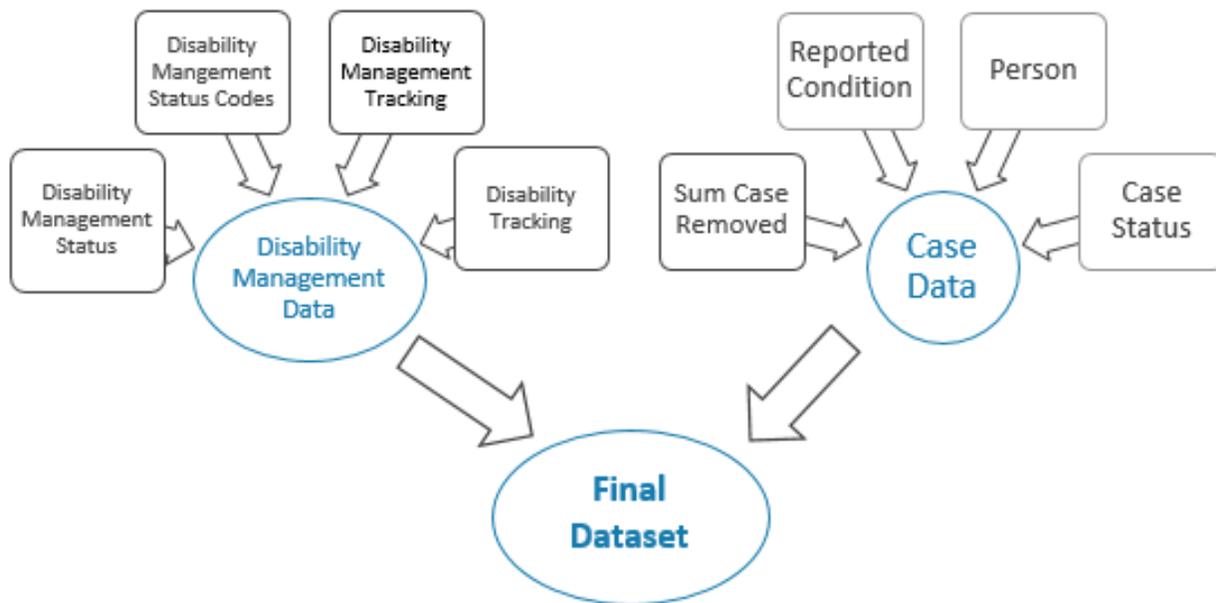


Table A-1: OWCP Tables Used for Analysis

Database	Table	Description
Disability and Case	Disability Tracking	Links case IDs to all associated disability tracking IDs
Disability	Disability Management Tracking	The date the case closed and information about expected return-to-work time
Disability	Disability Management Status	Codes (status codes) for OWCP activities and the date they occurred
Disability	Disability Management Status Codes	Descriptions for codes for OWCP activities reported in Disability Management Status table
Case	Reported Condition	Information about nature of injury, cause of injury, and location of injury
Case	Sum Case Removed	Information about cases including DOL received date, case creation date, and other claimant characteristics
Case	Person Data	Claimant characteristics such as sex, birth date, age, and a death indicator
Case	Case Status	Information on the adjudication and pay status of each case

Figure A-1 illustrates the process for compiling datasets to produce the final dataset. For the Disability Management data, Disability Tracking ID linked the datasets. For the Case data, Case ID linked the data. The dataset Disability Tracking contained both unique identifiers (Case ID and Disability Tracking ID), which the study used to merge both sets of data for the final analysis dataset. This study focused on claimants who received disability management services, therefore case-level data was only included for cases with disability management records.

Figure A-1: Compilation of OWCP Data Tables





Data Filters

The study excluded certain observations to further focus on the population of interest. **Table A-2** summarizes how the four steps led to the 120,416 disability cases considered in this analysis.:

- 1) *Cases that ever had a code of RMV and cases that returned to work before starting disability management.* The RMV code indicated that OWCP removed the case from disability management. The study excluded cases that returned to work before starting disability management because they had already reached the positive outcome of the analysis.
- 2) *Cases that were open and less than 30 months in length to ensure open cases had sufficient time in the disability management system for several interventions to occur.* The study did not exclude cases from the dataset that OWCP opened and closed within the previous 30 months and closed.
- 3) *Claimants whose first injury occurred prior to 2001* to focus on claimants who had been a part of the OWCP’s disability management system in more recent years.
- 4) *Closed cases with only one disability management event. These cases’ only disability management event was a closure code.* Approximately 14,271 cases showed their only status code as being “Remove from DM [disability management],” “compensation not claimed,” or codes related to the case closing or a recurrence of an injury.

Table A-2: Data Filtering Waterfall

Exclusion Applied	Number of Cases Remaining
None—Merged Data Before Exclusions	157,682
Exclude Cases with RMV code and Cases that Return to Work before Starting Disability Management	133,703
Exclude Open Cases that have been Open Less than 30 Months	126,976
Exclude Claimants Injured before January 1, 2001	121,452
Exclude Closed Cases with One Disability Management Event	120,416

Data Dictionary

Some of the information OWCP collected on injuries used a coding system. The study used data dictionaries from DOL’s website to interpret the following variables: Department Agency, Nature of Injury, Cause of Injury, Location of Injury, Type of Injury, and Return-to-Work.²³

Recoding Variables

Many of the variables had several categories. To facilitate interpretation and analysis, the study re-categorized several variables using feedback from OWCP, the data dictionary from DOL’s website, and previous studies as guidance.²⁴ The following variables were re-categorized:

- **Department agency**—Per OWCP’s request, all defense agencies were grouped together.
- **Cause of injury**—Over 90 categorizations were reduced to eight key causes of injuries.
- **Nature of injury**—Over 80 categorizations were reduced to nine natures of injuries. Note: The study excluded natures of injuries that were not the primary nature of injury. Some cases had multiple nature of injuries and the study focused on the claimant’s primary nature of injury.

²³ Department of Labor Reference Tables and Data Dictionary for Return to Work Codes

²⁴ Maxwell, Nan, Albert Liu, Nathan Wozny, and Caroline Massad Francis.



- **Location of injury**—The number of categorizations were reduced from over 100 to 14 more succinct locations of injuries.
- **Disability status codes**—In collaboration with OWCP, the most meaningful disability status codes were identified to focus the analysis.
- **Type of injury (traumatic versus occupational)**—To classify injuries as traumatic or occupational, the first letter of the nature of injury codes was used. All nature of injury codes beginning with “T” were indicated as traumatic, while all others were classified as occupational injuries. The table below includes the descriptions for each nature of injury code that fell into each categorization.
- **Return-to-work**—In collaboration with OWCP, status codes were grouped into different types of return-to-work that indicated different degrees of recovery.

To identify if a claimant returned to work, one of the key outcome variables, the study used the disability management status codes and DOL’s definitions for these statuses.²⁵ The study also categorized return-to-work status to distinguish varying degrees of recovery. For example, a claimant who returned to work full time, full duty could be at a different place in their recovery process than a claimant who returned to work part time, light duty. **Table A-3** further outlines these categorizations in order from Least Recovered to Most Recovered.

Table A-3: Return-to-Work Codes

New Label	Values Incorporated into Code
No Return-to-Work	If none of the values below were found, this categorization was made.
Return-to-Work Part Time	CFP, CLP, ML4, ML6, MLP, NF4, NFP, NL4, NL6, NLP, RFP, RLP
Return-to-Work Full Time, Loss of Wage Earning Capacity	CAE, CL\$, NL\$, RL\$, TNW
Return-to-Work Full Time, Light Duty, No Loss of Wage Earning Capacity	CLF, MLF, NLF, RLF
Return-to-Work Full Time Full Duty, No Loss of Wage Earning Capacity	CDJ, CFF, CNC, CNL, CPS, LFH, LFN, NC7, NCH, NFF, RFF, RHE, RHS, RHV, SCO, SCW

Coding Disability Management Phases and Key Events

When coding disability management phases for **Figure 7**, the study used the following definitions to categorize cases:

1. **Closed & Return-to-Work**—Returned to work and closed, as indicated by having a disability management status date after the date closed.

²⁵ Part 2 Group 3 of OWCP’s Procedure Manual. <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#206016>.



2. **Closed & No Return-to-Work**—Closed without returning to work. These cases were for workers who were severely disabled and unable to return to work, so their disability management case was closed.
3. **Return-to-Work**—Returned to work but not yet closed.
4. **Rehabilitation Phase**—Received vocational rehabilitation services, as indicated by having a disability management status that starts with “R,” but had not yet returned to work or closed.
5. **Nurse Phase**—Received nurse services, as indicated by having a disability management status that starts with “N,” but had not yet received rehabilitation services, returned to work, or closed.
 - a. If a case belonged in this category and had not experienced any disability management event for four months, then it was also categorized as inactive.
6. **Other Disability Management Events**—Have experienced disability management events but have not received nurse services, vocational rehabilitation services, returned to work, or closed.
 - a. If a case belonged in this category and had not experienced any disability management event for 4 months, then it was also categorized as inactive.

When using key disability management status codes and identifying key activities, the study used the definitions of DM Codes in the Disability Tracking Chapter of OWCP’s Procedure Manual²⁶ to combine some key disability management events with the same definitions.

Table A-4: Disability Management Activity Recodes

Disability Management Activity	Original Code(s)	New Code
Nurse Phase		
Start of Nurse Phase	NSN	NSN
30-Day Nurse Extension Granted	NFE, NF3	NF3
60-Day Nurse Extension Granted	NF6	NF6
Vocational Rehabilitation Phase		
Start of Vocational Rehabilitation Phase	RHR	RHR
Placement with Previous Employer	RHW, RHN	RHH
Plan Development	RHD	RHD
Placement with New Employer	RHP	RHP
In Approved Training	RHT	RHT
Medical Rehabilitation	RHM	RHM
No Specific Phase		
Other Intervention by CE	OIC	OIC
Nurse or Rehabilitation Intervention via CE	NIC, RIC	INV
Letter Sent	PRL, PTL, RLT, TML	LET
Second Opinion Report Scheduled	MSI	MSI
Referee Report Scheduled	MRI	MRI
Interruption	MIN, NIN, RHX	INT
Non-Cooperation	CFC, NCN, NWL, RWL, SUC	ZZZ
Outcome		
Return-to-Work	All return-to-work codes (See Table A 3: Return-to-	Return-to-Work

²⁶ Part 2 Group 3 of OWCP’s Procedure Manual. <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm#206016>.



Work Codes)





Appendix B PROPORTIONS AND LIFTS OF DIFFERENT OUTCOMES BY CLAIM AND CLAIMANT CHARACTERISTICS

This appendix includes the complete tables for proportions and lifts of different outcomes by claim and claimant characteristic. The outcomes include the following:

- Return-to-Work
- Return-to-Work with Short Disability Management (less than 12 months)
- Prolonged Disability Management (at least 12 months)
- Prolonged Disability Management (at least 24 months)
- Prolonged Disability Management (at least 30 months)

In each of these tables, the number on the left represents the lift and the number in parentheses represents the proportion.

Table B-1: Lifts for Return-to-Work for All Claim and Claimant Characteristics

		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Return-to-Work Proportion		82%	82%	79%	82%	80%
Number of Claimants in Population		120,416	95,425	24,931	70,454	49,962
Percent of Claimants in the Total Population		100%	79%	21%	59%	41%
Lift (%Pop)						
Location of Injury	Arm	5% (12%)	5% (10%)	8% (20%)	5% (13%)	6% (11%)
	Back, external	-16% (12%)	-15% (13%)	-24% (6%)	-15% (11%)	-16% (13%)
	Back, internal	-27% (0%)	-29% (0%)	-23% (0%)	-19% (0%)	-33% (0%)
	Bones	-3% (1%)	-1% (1%)	-21% (1%)	-10% (1%)	2% (2%)
	External	-5% (3%)	-5% (4%)	-10% (2%)	-3% (3%)	-7% (4%)
	Foot	4% (4%)	3% (4%)	6% (7%)	4% (5%)	1% (3%)
	Hand	5% (8%)	2% (4%)	10% (19%)	6% (8%)	3% (6%)
	Head, external	-14% (4%)	-14% (4%)	-20% (2%)	-13% (4%)	-16% (3%)
	Head, internal	-34% (2%)	-25% (2%)	-60% (2%)	-28% (1%)	-40% (2%)
	Knee	8% (16%)	8% (19%)	3% (8%)	6% (14%)	11% (20%)
	Leg	3% (11%)	3% (13%)	-6% (3%)	3% (12%)	2% (10%)
	Organ, internal	-8% (1%)	-1% (1%)	-24% (1%)	3% (1%)	-21% (1%)
	Shoulder	7% (16%)	7% (16%)	7% (19%)	5% (18%)	10% (15%)
	Other	-7% (9%)	-6% (9%)	-15% (8%)	-7% (8%)	-7% (10%)
Nature of Injury	Back	-15% (11%)	-15% (12%)	-23% (5%)	-15% (10%)	-15% (13%)
	Fracture	7% (8%)	6% (10%)	-	8% (7%)	6% (9%)
	Musculoskeletal	2% (15%)	-	5% (70%)	1% (20%)	4% (7%)
	Pain	2% (14%)	3% (13%)	1% (16%)	-1% (13%)	7% (14%)
	Sprain	7% (24%)	6% (30%)	-	6% (23%)	8% (25%)
	Traumatic injury, other	-1% (15%)	-2% (19%)	-	-1% (16%)	-1% (14%)
	Wound, including contusion	-2% (7%)	-3% (9%)	-	0% (6%)	-4% (7%)
	Other natures	-14% (6%)	-6% (6%)	-34% (8%)	-10% (4%)	-16% (9%)
Cause of Injury	Animal or insect, including dog bite	0% (1%)	0% (1%)	-28% (0%)	3% (2%)	-22% (0%)
	Fall	2% (22%)	2% (27%)	-4% (0%)	3% (19%)	2% (25%)
	Handling mail	-2% (12%)	-4% (11%)	3% (17%)	-2% (16%)	-4% (7%)
	Handling manual	2% (16%)	1% (14%)	5% (27%)	1% (16%)	2% (17%)



		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Return-to-Work Proportion		82%	82%	79%	82%	80%
Number of Claimants in Population		120,416	95,425	24,931	70,454	49,962
Percent of Claimants in the Total Population		100%	79%	21%	59%	41%
Lift (%Pop)						
equipment						
	Slip	7% (10%)	6% (12%)	-3% (1%)	7% (10%)	7% (9%)
Striking against material equipment		1% (3%)	1% (3%)	12% (0%)	0% (3%)	4% (2%)
Other causes		-3% (29%)	-2% (23%)	-3% (54%)	-3% (27%)	-3% (32%)
Type of Injury	Occupational	-3% (21%)	-	-	-2% (28%)	-8% (11%)
	Traumatic	1% (79%)	-	-	1% (72%)	1% (89%)
Time from Adjudication to DM Entry	2 months or less	1% (49%)	1% (53%)	1% (34%)	2% (49%)	-1% (49%)
	2-4 months	3% (17%)	2% (17%)	8% (16%)	2% (16%)	5% (18%)
	4-6 months	6% (8%)	5% (8%)	7% (10%)	4% (8%)	7% (9%)
	6-8 months	3% (5%)	4% (5%)	4% (7%)	2% (5%)	6% (5%)
	8-10 months	2% (3%)	2% (3%)	1% (5%)	1% (3%)	2% (3%)
	10 months-1 year	-2% (2%)	-2% (2%)	-1% (4%)	-3% (2%)	-1% (2%)
	More than 1 year	-11% (13%)	-11% (10%)	-9% (24%)	-11% (14%)	-11% (12%)
Sex	Female	-1% (49%)	-1% (45%)	0% (61%)	-1% (56%)	-2% (39%)
	Male	1% (51%)	1% (55%)	-1% (39%)	1% (44%)	1% (61%)
Age	Under 30	-3% (6%)	-4% (7%)	-4% (2%)	-3% (4%)	-2% (9%)
	30-39	2% (16%)	2% (17%)	3% (12%)	1% (14%)	4% (19%)
	40-49	1% (32%)	1% (30%)	3% (36%)	2% (33%)	0% (30%)
	50-59	0% (36%)	0% (35%)	-1% (42%)	0% (40%)	-1% (31%)
	Over 60	-5% (10%)	-4% (11%)	-12% (8%)	-6% (10%)	-4% (10%)
Agency	Corporation For National - Community Service	-18% (0%)	-39% (0%)	27% (0%)	-	-
	Defense Agencies	2% (11%)	2% (12%)	--2% (7%)	-	-
	Department Of Agriculture	0% (2%)	0% (2%)	-2% (2%)	-	-
	Department Of Commerce	-30% (1%)	-31% (1%)	-18% (0%)	-	-
	Department Of Education	-26% (0%)	-32% (0%)	27% (0%)	-	-
	Department Of Energy	4% (0%)	1% (0%)	21% (0%)	-	-
	Department Of Health - Human Services	-10% (0%)	-9% (1%)	-29% (0%)	-	-
	Department Of Homeland Security	0% (9%)	0% (11%)	-5% (3%)	-	-
	Department Of Housing - Urban Development	4% (0%)	3% (0%)	4% (0%)	-	-
	Department Of Justice	5% (4%)	5% (5%)	-16% (1%)	-	-
	Department Of Labor	-13% (1%)	-14% (1%)	-5% (0%)	-	-
	Department Of State	-17% (0%)	-10% (0%)	-43% (0%)	-	-
	Department Of The Interior	-9% (2%)	-9% (2%)	-13% (1%)	-	-
	Department Of Transportation	-19% (1%)	-18% (1%)	-32% (0%)	-	-
	Department Of Treasury	-6% (1%)	-8% (1%)	-1% (1%)	-	-
	Department Of	0% (7%)	0% (8%)	-5% (4%)	-	-



		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Return-to-Work Proportion		82%	82%	79%	82%	80%
Number of Claimants in Population		120,416	95,425	24,931	70,454	49,962
Percent of Claimants in the Total Population		100%	79%	21%	59%	41%
Lift (%Pop)						
	Veterans Affairs					
	Environmental Protection Agency	15% (0%)	-12% (0%)	-49% (0%)	-	-
	Executive Office Of The President	-8% (0%)	-9% (0%)	-	-	-
	Federal Judiciary	3% (0%)	3% (0%)	-33% (0%)	-	-
	General Services Administration	16% (0%)	-20% (0%)	11% (0%)	-	-
	Government Printing Office	-9% (0%)	-11% (0%)	5% (0%)	-	-
	Independent Agencies	18% (0%)	-19% (0%)	-	-	-
	National Aeronautics Space Administration	-6% (0%)	-7% (0%)	1% (0%)	-	-
	Non-Chargeable Agencies	-63% (0%)	-70% (0%)	-37% (0%)	-	-
	Other Establishments	-13% (1%)	-10% (1%)	-35% (0%)	-	-
	Peace Corps	-36% (0%)	-32% (0%)	-40% (0%)	-	-
	Smithsonian Institution	-7% (0%)	-6% (0%)	-28% (0%)	-	-
	Social Security Administration	-5% (1%)	-6% (0%)	-1% (1%)	-	-
	Tennessee Valley Authority	0% (0%)	3% (0%)	-62% (0%)	-	-
	USPS	1% (59%)	1% (54%)	2% (78%)	-	-
Time from DOL Received to Adjudication	15-30 days	2% (5%)	0% (4%)	7% (9%)	1% (6%)	3% (5%)
	15 days or less	2% (66%)	2% (79%)	6% (15%)	3% (60%)	2% (75%)
	30-45 days	-4% (15%)	-6% (14%)	4% (18%)	-4% (16%)	-3% (12%)
	45-60 days	-4% (4%)	-13% (2%)	2% (15%)	-4% (5%)	-8% (3%)
	60-75 days	-4% (3%)	-18% (0%)	0% (12%)	-5% (4%)	-6% (2%)
	75-90 days	-5% (5%)	-19% (0%)	-1% (23%)	-5% (7%)	-7% (2%)
	More than 90 days	-29% (2%)	-26% (0%)	-28% (8%)	-20% (2%)	-48% (2%)

N = 120,416



Table B-2: Lifts for Prolonged Disability Management (at Least 12 Months) for All Claim and Claimant Characteristics

		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion		28%	26%	35%	30%	25%
Number of Claimants in Population		120,416	95,425	24,931	70,454	49,962
Percent of Claimants in the Total Population		100%	79%	21%	59%	41%
Lift (%Pop)						
Location of Injury	Arm	-16% (12%)	-13% (10%)	-28% (20%)	-16% (13%)	-16% (11%)
	Back, external	51% (12%)	53% (13%)	70% (6%)	48% (11%)	58% (13%)
	Back, internal	62% (0%)	59% (0%)	42% (0%)	65% (0%)	68% (0%)
	Bones	3% (1%)	-3% (1%)	55% (1%)	19% (1%)	-2% (2%)
	External	2% (3%)	1% (4%)	20% (2%)	1% (3%)	5% (4%)
	Foot	-12% (4%)	-28% (4%)	1% (7%)	-10% (5%)	-27% (3%)
	Hand	-26% (8%)	-32% (4%)	-33% (19%)	-26% (8%)	-28% (6%)
	Head, external	43% (4%)	42% (4%)	69% (2%)	40% (4%)	45% (3%)
	Head, internal	76% (2%)	60% (2%)	100% (2%)	62% (1%)	101% (2%)
	Knee	-26% (16%)	-27% (19%)	8% (8%)	-16% (14%)	-35% (20%)
	Leg	-18% (11%)	-17% (13%)	27% (3%)	-20% (12%)	-15% (10%)
	Organ, internal	-15% (1%)	-40% (1%)	22% (1%)	-41% (1%)	26% (1%)
	Shoulder	-7% (16%)	-7% (16%)	-11% (19%)	-4% (18%)	-18% (15%)
	Other	30% (9%)	29% (9%)	35% (8%)	28% (8%)	35% (10%)
Nature of Injury	Back	50% (11%)	54% (12%)	67% (5%)	46% (10%)	60% (13%)
	Fracture	-36% (8%)	-31% (10%)	-	-36% (7%)	-33% (9%)
	Musculoskeletal	12% (15%)	-	-11% (70%)	9% (20%)	-3% (7%)
	Pain	-4% (14%)	-8% (13%)	-1% (16%)	1% (13%)	-12% (14%)
	Sprain	-22% (24%)	-16% (30%)	-	-20% (23%)	-23% (25%)
	Traumatic injury, other	5% (15%)	12% (19%)	-	5% (16%)	1% (14%)
	Wound, including contusion	-6% (7%)	1% (9%)	-	-8% (6%)	-2% (7%)
	Other natures	16% (6%)	-5% (6%)	52% (8%)	9% (4%)	30% (9%)
Cause of Injury	Animal or insect, including dog bite	-15% (1%)	-10% (1%)	-1% (0%)	-20% (2%)	-13% (0%)
	Fall	-14% (22%)	-8% (27%)	-7% (0%)	-16% (19%)	-9% (25%)
	Handling mail	10% (12%)	17% (11%)	-11% (17%)	5% (16%)	15% (7%)
	Handling manual equipment	1% (16%)	4% (14%)	-13% (27%)	3% (16%)	0% (17%)
	Slip	-29% (10%)	-25% (12%)	0% (1%)	-30% (10%)	-30% (9%)
	Striking against material equipment	-6% (3%)	0% (3%)	-25% (0%)	-6% (3%)	-11% (2%)
	Other causes	15% (29%)	8% (23%)	10% (54%)	18% (27%)	12% (32%)
Type of Injury	Occupational	26% (21%)	-	-	17% (28%)	37% (11%)
	Traumatic	-7% (79%)	-	-	-7% (72%)	-5% (89%)
Time from Adjudication to DM Entry	2 months or less	-	-16% (53%)	-10% (34%)	-17% (49%)	-17% (49%)
	2-4 months	-	2% (17%)	-19% (16%)	-3% (16%)	-5% (18%)
	4-6 months	-	0% (8%)	-10% (10%)	0% (8%)	-4% (9%)
	6-8 months	-	8% (5%)	-1% (7%)	7% (5%)	9% (5%)
	8-10 months	-	26% (3%)	10% (5%)	24% (3%)	22% (3%)
	10 months-1 year	-	40% (2%)	9% (4%)	33% (2%)	32% (2%)



	More than 1 year	-	63% (10%)	25% (24%)	49% (14%)	60% (12%)
Sex	Female	14% (49%)	16% (45%)	5% (61%)	11% (56%)	15% (39%)
	Male	-14% (51%)	-13% (55%)	-8% (39%)	-14% (44%)	-10% (61%)
Age	Under 30	-	-34% (7%)	1% (2%)	-27% (4%)	-34% (9%)
	30-39	-	-9% (17%)	4% (12%)	-2% (14%)	-13% (19%)
	40-49	-	10% (30%)	3% (36%)	8% (33%)	8% (30%)
	50-59	-	5% (35%)	-3% (42%)	-1% (40%)	9% (31%)
	Over 60	-	-5% (11%)	-4% (8%)	-13% (10%)	5% (10%)
Agency	Corporation For National - Community Service	19% (0%)	91% (0%)	-100% (0%)	-	-
	Defense Agencies	-13% (11%)	-10% (12%)	-14% (7%)	-	-
	Department Of Agriculture	-31% (2%)	-30% (2%)	-29% (2%)	-	-
	Department Of Commerce	-3% (1%)	1% (1%)	28% (0%)	-	-
	Department Of Education	114% (0%)	112% (0%)	184% (0%)	-	-
	Department Of Energy	-10% (0%)	-5% (0%)	-19% (0%)	-	-
	Department Of Health - Human Services	17% (0%)	18% (1%)	45% (0%)	-	-
	Department Of Homeland Security	-21% (9%)	-20% (11%)	9% (3%)	-	-
	Department Of Housing - Urban Development	-22% (0%)	-26% (0%)	3% (0%)	-	-
	Department Of Justice	-22% (4%)	-20% (5%)	12% (1%)	-	-
	Department Of Labor	-52% (1%)	-52% (1%)	-32% (0%)	-	-
	Department Of State	34% (0%)	21% (0%)	71% (0%)	-	-
	Department Of The Interior	-16% (2%)	-14% (2%)	5% (1%)	-	-
	Department Of Transportation	38% (1%)	39% (1%)	71% (0%)	-	-
	Department Of Treasury	-3% (1%)	-3% (1%)	-7% (1%)	-	-
	Department Of Veterans Affairs	5% (7%)	11% (8%)	-7% (4%)	-	-
	Environmental Protection Agency	2% (0%)	-13% (0%)	128% (0%)	-	-
	Executive Office Of The President	79% (0%)	91% (0%)	-	-	-
	Federal Judiciary	-19% (0%)	-27% (0%)	16% (0%)	-	-
	General Services Administration	31% (0%)	54% (0%)	-64% (0%)	-	-
	Government Printing Office	22% (0%)	31% (0%)	-5% (0%)	-	-
	Independent Agencies	19% (0%)	27% (0%)	-	-	-
	National Aeronautics Space Administration	1% (0%)	12% (0%)	-43% (0%)	-	-
	Non-Chargeable Agencies	150% (0%)	187% (0%)	42% (0%)	-	-



	Other					
	Establishments	27% (1%)	23% (1%)	64% (0%)	-	-
	Peace Corps	59% (0%)	54% (0%)	38% (0%)	-	-
	Smithsonian					
	Institution	23% (0%)	33% (0%)	-19% (0%)	-	-
	Social Security					
	Administration	-3% (1%)	-2% (0%)	-13% (1%)	-	-
	Tennessee Valley					
	Authority	-1% (0%)	1% (0%)	42% (0%)	-	-
	USPS	8% (59%)	8% (54%)	1% (78%)	-	-
Time from DOL Received to Adjudication	15–30 days	2% (5%)	4% (4%)	-11% (9%)	6% (6%)	-7% (5%)
	15 days or less	-11% (66%)	-6% (79%)	-13% (15%)	-12% (60%)	-8% (75%)
	30–45 days	13% (15%)	21% (14%)	-12% (18%)	10% (16%)	14% (12%)
	45–60 days	28% (4%)	52% (2%)	-3% (15%)	20% (5%)	38% (3%)
	60–75 days	29% (3%)	60% (0%)	1% (12%)	21% (4%)	41% (2%)
	75–90 days	33% (5%)	73% (0%)	5% (23%)	26% (7%)	35% (2%)
	More than 90 days	89% (2%)	92% (0%)	52% (8%)	64% (2%)	137% (2%)

Table B-3: Lifts for Return-to-Work with Short Disability Management for All Claim and Claimant Characteristics

		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Proportion of Return-to-Work with Short Disability Management Duration		65%	67%	59%	64%	67%
Number of Claimants in Population		120,416	95,425	24,931	70,454	49,962
Percent of Claimants in the Total Population		100%	79%	21%	59%	41%
		Lift (%Pop)				
Location of Injury	Arm	8% (12%)	6% (10%)	18% (20%)	9% (13%)	8% (11%)
	Back, external	-28% (12%)	-26% (13%)	-48% (6%)	-28% (11%)	-27% (13%)
	Back, internal	-34% (0%)	-37% (0%)	-25% (0%)	-21% (0%)	-44% (0%)
	Bones	-3% (1%)	1% (1%)	-38% (1%)	-14% (1%)	3% (2%)
	External	-4% (3%)	-3% (4%)	-15% (2%)	-2% (3%)	-6% (4%)
	Foot	5% (4%)	10% (4%)	1% (7%)	6% (5%)	6% (3%)
	Hand	12% (8%)	10% (4%)	22% (19%)	14% (8%)	9% (6%)
	Head, external	-23% (4%)	-21% (4%)	-43% (2%)	-22% (4%)	-24% (3%)
	Head, internal	-42% (2%)	-33% (2%)	-71% (2%)	-35% (1%)	-49% (2%)
	Knee	14% (16%)	14% (19%)	-4% (8%)	10% (14%)	17% (20%)
	Leg	7% (11%)	6% (13%)	-17% (3%)	9% (12%)	4% (10%)
	Organ, internal	4% (1%)	13% (1%)	-15% (1%)	19% (1%)	-15% (1%)
	Shoulder	6% (16%)	6% (16%)	7% (19%)	4% (18%)	11% (15%)
	Other	-13% (9%)	-11% (9%)	-23% (8%)	-14% (8%)	-12% (10%)
Nature of Injury	Back	-27% (11%)	-26% (12%)	-46% (5%)	-27% (10%)	-27% (13%)
	Fracture	16% (8%)	13% (10%)	-	19% (7%)	12% (9%)
	Musculoskeletal	-2% (15%)	-	8% (70%)	-2% (20%)	5% (7%)
	Pain	3% (14%)	5% (13%)	0% (16%)	-2% (13%)	9% (14%)
	Sprain	12% (24%)	9% (30%)	-	12% (23%)	11% (25%)
	Traumatic injury, other	-3% (15%)	-5% (19%)	-	-3% (16%)	-2% (14%)
	Wound, including contusion	-1% (7%)	-3% (9%)	-	1% (6%)	-4% (7%)
	Other natures	-11% (6%)	-1% (6%)	-39% (8%)	-7% (4%)	-15% (9%)
Cause of Injury	Animal or insect,	3% (1%)	1% (1%)	-12% (0%)	8% (2%)	-17% (0%)



	including dog bite					
	Fall	6% (22%)	4% (27%)	4% (0%)	8% (19%)	3% (25%)
	Handling mail	-6% (12%)	-9% (11%)	7% (17%)	-3% (16%)	-11% (7%)
	Handling manual equipment	1% (16%)	-1% (14%)	9% (27%)	0% (16%)	1% (17%)
	Slip	14% (10%)	12% (12%)	-5% (1%)	15% (10%)	13% (9%)
	Striking against material equipment	3% (3%)	1% (3%)	17% (0%)	1% (3%)	8% (2%)
	Other causes	-7% (29%)	-3% (23%)	-7% (54%)	-9% (27%)	-4% (32%)
Type of Injury	Occupational	-9% (21%)	-	-	-7% (28%)	-11% (11%)
	Traumatic	2% (79%)	-	-	3% (72%)	1% (89%)
Time from Adjudication to DM Entry	2 months or less	5% (49%)	4% (53%)	6% (34%)	7% (49%)	3% (49%)
	2-4 months	4% (17%)	2% (17%)	13% (16%)	2% (16%)	6% (18%)
	4-6 months	5% (8%)	4% (8%)	10% (10%)	3% (8%)	6% (9%)
	6-8 months	1% (5%)	1% (5%)	4% (7%)	-1% (5%)	3% (5%)
	8-10 months	-6% (3%)	-5% (3%)	-5% (5%)	-8% (3%)	-3% (3%)
	10 months-1 year	-12% (2%)	-12% (2%)	-7% (4%)	-15% (2%)	-8% (2%)
	More than 1 year	-24% (13%)	-24% (10%)	-18% (24%)	-25% (14%)	-21% (12%)
Sex	Female	-6% (49%)	-6% (45%)	-3% (61%)	-5% (56%)	-6% (39%)
	Male	6% (51%)	5% (55%)	4% (39%)	7% (44%)	4% (61%)
Age	Under 30	4% (6%)	3% (7%)	-9% (2%)	3% (4%)	3% (9%)
	30-39	4% (16%)	3% (17%)	-1% (12%)	0% (14%)	6% (19%)
	40-49	-1% (32%)	-2% (30%)	1% (36%)	-2% (33%)	-1% (30%)
	50-59	0% (36%)	0% (35%)	1% (42%)	1% (40%)	-2% (31%)
	Over 60	-2% (10%)	-2% (11%)	-8% (8%)	0% (10%)	-5% (10%)
Agency	Corporation For National - Community Service	3% (0%)	-25% (0%)	69% (0%)	-	-
	Defense Agencies	5% (11%)	4% (12%)	9% (7%)	-	-
	Department Of Agriculture	11% (2%)	10% (2%)	15% (2%)	-	-
	Department Of Commerce	-27% (1%)	-29% (1%)	-20% (0%)	-	-
	Department Of Education	-54% (0%)	-50% (0%)	-100% (0%)	-	-
	Department Of Energy	7% (0%)	4% (0%)	21% (0%)	-	-
	Department Of Health - Human Services	-11% (0%)	-10% (1%)	-26% (0%)	-	-
	Department Of Homeland Security	7% (9%)	6% (11%)	-5% (3%)	-	-
	Department Of Housing - Urban Development	10% (0%)	10% (0%)	8% (0%)	-	-
	Department Of Justice	14% (4%)	13% (5%)	-8% (1%)	-	-
	Department Of Labor	3% (1%)	1% (1%)	18% (0%)	-	-
	Department Of State	-15% (0%)	-9% (0%)	-41% (0%)	-	-
	Department Of The Interior	-2% (2%)	-4% (2%)	-5% (1%)	-	-
	Department Of Transportation	-21% (1%)	-20% (1%)	-45% (0%)	-	-



Department Of Treasury	-4% (1%)	-5% (1%)	3% (1%)	-	-	
Department Of Veterans Affairs	-2% (7%)	-4% (8%)	2% (4%)	-	-	
Environmental Protection Agency	-9% (0%)	-4% (0%)	-66% (0%)	-	-	
Executive Office Of The President	-23% (0%)	-25% (0%)	-	-	-	
Federal Judiciary	6% (0%)	11% (0%)	-26% (0%)	-	-	
General Services Administration	-14% (0%)	-23% (0%)	48% (0%)	-	-	
Government Printing Office	-10% (0%)	-13% (0%)	13% (0%)	-	-	
Independent Agencies	3% (0%)	0% (0%)	-	-	-	
National Aeronautics Space Administration	-9% (0%)	-12% (0%)	2% (0%)	-	-	
Non-Chargeable Agencies	-85% (0%)	-81% (0%)	-100% (0%)	-	-	
Other Establishments	-14% (1%)	-10% (1%)	-49% (0%)	-	-	
Peace Corps	-49% (0%)	-43% (0%)	-52% (0%)	-	-	
Smithsonian Institution	-10% (0%)	-12% (0%)	-3% (0%)	-	-	
Social Security Administration	-4% (1%)	-6% (0%)	4% (1%)	-	-	
Tennessee Valley Authority	4% (0%)	5% (0%)	-49% (0%)	-	-	
USPS	-2% (59%)	-2% (54%)	0% (78%)	-	-	
Time from DOL Received to Adjudication	15–30 days	1% (5%)	0% (4%)	10% (9%)	-1% (6%)	6% (5%)
	15 days or less	5% (66%)	3% (79%)	10% (15%)	6% (60%)	3% (75%)
	30–45 days	-6% (15%)	-9% (14%)	8% (18%)	-6% (16%)	-5% (12%)
	45–60 days	-12% (4%)	-23% (2%)	2% (15%)	-10% (5%)	-13% (3%)
	60–75 days	-11% (3%)	-29% (0%)	0% (12%)	-9% (4%)	-14% (2%)
	75–90 days	-14% (5%)	-40% (0%)	-4% (23%)	-14% (7%)	-11% (2%)
	More than 90 days	-44% (2%)	-46% (0%)	-38% (8%)	-36% (2%)	-58% (2%)

N = 120,416

Table B-4: Lifts for Disability Management for At Least 24 Months for All Claim and Claimant Characteristics

	Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS	
Prolonged DM Proportion	29%	28%	33%	30%	27%	
Number of Claimants in Population	1,326,153	1,023,646	301,826	801,351	524,802	
Percent of Claimants in the Total Population	100%	77%	23%	60%	40%	
	Lift (%Pop)					
Location of Injury	Arm	-16% (11%)	-17% (9%)	-21% (18%)	-13% (12%)	-23% (11%)
	Back, external	38% (14%)	39% (16%)	48% (8%)	36% (13%)	41% (16%)
	Back, internal	66% (0%)	20% (0%)	98% (0%)	100% (0%)	45% (0%)
	Bones	14% (1%)	14% (1%)	29% (1%)	26% (1%)	9% (2%)
	External	23% (3%)	21% (3%)	41% (2%)	21% (3%)	26% (3%)
	Foot	-16% (4%)	-25% (3%)	-12% (7%)	-15% (5%)	-26% (3%)
	Hand	-22% (7%)	-25% (4%)	-28% (17%)	-22% (7%)	-25% (6%)



		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion		29%	28%	33%	30%	27%
Number of Claimants in Population		1,326,153	1,023,646	301,826	801,351	524,802
Percent of Claimants in the Total Population		100%	77%	23%	60%	40%
		Lift (%Pop)				
	Head, external	37% (5%)	37% (5%)	49% (3%)	36% (5%)	36% (4%)
	Head, internal	89% (2%)	73% (2%)	111% (3%)	71% (2%)	112% (3%)
	Knee	-28% (15%)	-29% (17%)	-11% (8%)	-20% (13%)	-38% (17%)
	Leg	-14% (10%)	-15% (12%)	15% (3%)	-13% (11%)	-18% (9%)
	Organ, internal	25% (1%)	-6% (1%)	64% (1%)	-13% (1%)	73% (1%)
	Shoulder	-19% (16%)	-19% (16%)	-20% (19%)	-16% (18%)	-25% (14%)
	Other	25% (10%)	24% (11%)	30% (9%)	25% (9%)	26% (12%)
Nature of Injury	Back	37% (13%)	39% (15%)	44% (7%)	36% (11%)	41% (17%)
	Fracture	-28% (7%)	-25% (8%)	-	-25% (6%)	-32% (8%)
	Musculoskeletal	0% (16%)	-	-13% (69%)	-1% (21%)	-8% (7%)
	Pain	-4% (13%)	-6% (12%)	-2% (15%)	4% (13%)	-16% (14%)
	Sprain	-24% (22%)	-20% (29%)	-	-20% (21%)	-29% (24%)
	Traumatic injury, other	2% (16%)	7% (20%)	-	1% (17%)	4% (14%)
	Wound, including contusion	0% (6%)	4% (8%)	-	-2% (6%)	3% (7%)
	Other natures	39% (6%)	15% (5%)	73% (8%)	30% (4%)	50% (8%)
Cause of Injury	Animal or insect, including dog bite	-4% (1%)	-1% (1%)	25% (0%)	-6% (2%)	-13% (0%)
	Fall	-12% (21%)	-8% (27%)	19% (0%)	-12% (18%)	-10% (25%)
	Handling mail	7% (13%)	10% (12%)	-4% (16%)	4% (16%)	8% (8%)
	Handling manual equipment	-3% (17%)	1% (14%)	-15% (26%)	-3% (16%)	-4% (17%)
	Slip	-29% (9%)	-26% (11%)	-15% (1%)	-28% (9%)	-30% (8%)
	Striking against material equipment	-8% (3%)	-3% (3%)	-75% (0%)	-8% (3%)	-9% (2%)
	Other causes	12% (31%)	8% (23%)	9% (56%)	12% (29%)	13% (32%)
Type of Injury	Occupational	14% (23%)	-	-	8% (29%)	28% (13%)
	Traumatic	-4% (77%)	-	-	-4% (71%)	-4% (87%)
Time from Adjudication to DM Entry	2 months or less	-	-10% (50%)	-3% (34%)	-9% (47%)	-11% (46%)
	2-4 months	-	1% (18%)	-14% (15%)	-3% (16%)	-2% (18%)
	4-6 months	-	-7% (8%)	-13% (9%)	-7% (8%)	-9% (9%)
	6-8 months	-	2% (5%)	0% (7%)	1% (5%)	6% (6%)
	8-10 months	-	9% (3%)	4% (5%)	8% (4%)	10% (4%)
	10 months-1 year	-	12% (2%)	-2% (4%)	7% (3%)	12% (3%)
	More than 1 year	-	38% (12%)	15% (24%)	29% (16%)	36% (14%)
Sex	Female	7% (53%)	8% (49%)	1% (64%)	6% (59%)	6% (42%)
	Male	-7% (47%)	-7% (51%)	-3% (36%)	-8% (41%)	-4% (58%)
Age	Under 30	-	-29% (6%)	14% (2%)	-24% (3%)	-24% (7%)
	30-39	-	-6% (17%)	1% (13%)	-1% (15%)	-9% (19%)
	40-49	-	6% (33%)	-2% (38%)	3% (35%)	6% (32%)
	50-59	-	2% (35%)	0% (40%)	1% (39%)	3% (32%)
	Over 60	-	-2% (10%)	5% (7%)	-5% (9%)	5% (10%)
Agency	Corporation For National - Community Service	102% (0%)	191% (0%)	-100% (0%)	-	-



	Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion	29%	28%	33%	30%	27%
Number of Claimants in Population	1,326,153	1,023,646	301,826	801,351	524,802
Percent of Claimants in the Total Population	100%	77%	23%	60%	40%
	Lift (%Pop)				
Defense Agencies	-13% (11%)	-13% (12%)	-6% (7%)	-	-
Department Of Agriculture	-16% (2%)	-18% (2%)	-4% (2%)	-	-
Department Of Commerce	3% (1%)	6% (1%)	17% (0%)	-	-
Department Of Education	86% (0%)	109% (0%)	-100% (0%)	-	-
Department Of Energy	-27% (0%)	-20% (0%)	-67% (0%)	-	-
Department Of Health - Human Services	9% (0%)	-2% (1%)	78% (0%)	-	-
Department Of Homeland Security	-10% (9%)	-9% (10%)	9% (3%)	-	-
Department Of Housing - Urban Development	-38% (0%)	-51% (0%)	29% (0%)	-	-
Department Of Justice	-8% (4%)	-9% (5%)	42% (1%)	-	-
Department Of Labor	-34% (1%)	-36% (1%)	-10% (0%)	-	-
Department Of State	58% (0%)	41% (0%)	111% (0%)	-	-
Department Of The Interior	7% (2%)	8% (2%)	31% (1%)	-	-
Department Of Transportation	66% (1%)	64% (1%)	103% (0%)	-	-
Department Of Treasury	-6% (1%)	-6% (1%)	-8% (1%)	-	-
Department Of Veterans Affairs	-4% (7%)	-2% (8%)	-5% (4%)	-	-
Environmental Protection Agency	42% (0%)	31% (0%)	148% (0%)	-	-
Executive Office Of The President	-1% (0%)	3% (0%)	-	-	-
Federal Judiciary	5% (0%)	-4% (0%)	40% (0%)	-	-
General Services Administration	20% (0%)	37% (0%)	-76% (0%)	-	-
Government Printing Office	26% (0%)	29% (0%)	20% (0%)	-	-
Independent Agencies	128% (0%)	138% (0%)	-	-	-
National Aeronautics Space Administration	44% (0%)	61% (0%)	-44% (0%)	-	-
Non-Chargeable Agencies	162% (0%)	175% (0%)	125% (0%)	-	-
Other Establishments	36% (1%)	43% (1%)	7% (0%)	-	-
Peace Corps	76% (0%)	79% (0%)	59% (0%)	-	-



		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion		29%	28%	33%	30%	27%
Number of Claimants in Population		1,326,153	1,023,646	301,826	801,351	524,802
Percent of Claimants in the Total Population		100%	77%	23%	60%	40%
		Lift (%Pop)				
	Smithsonian Institution	23% (0%)	21% (0%)	102% (0%)	-	-
	Social Security Administration	-9% (0%)	-14% (0%)	-5% (1%)	-	-
	Tennessee Valley Authority	-1% (0%)	-6% (0%)	108% (0%)	-	-
	USPS	4% (60%)	5% (55%)	-1% (78%)	-	-
Time from DOL Received to Adjudication	15-30 days	2% (6%)	3% (5%)	-6% (9%)	6% (6%)	-6% (5%)
	15 days or less	-10% (63%)	-6% (77%)	-13% (15%)	-10% (57%)	-8% (72%)
	30-45 days	12% (16%)	21% (15%)	-12% (18%)	11% (18%)	13% (13%)
	45-60 days	18% (5%)	49% (2%)	-6% (15%)	9% (6%)	38% (3%)
	60-75 days	19% (3%)	44% (0%)	2% (12%)	16% (4%)	23% (2%)
	75-90 days	20% (5%)	65% (0%)	4% (22%)	16% (7%)	25% (3%)
	More than 90 days	68% (2%)	47% (0%)	51% (9%)	42% (3%)	120% (2%)

N = 120,416

Table B-5: Lifts for Disability Management for At Least 30 Months for All Claim and Claimant Characteristics

		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion		23%	22%	27%	24%	22%
Number of Claimants in Population		1,326,153	1,023,646	301,826	801,351	524,802
Percent of Claimants in the Total Population		100%	77%	23%	60%	40%
		Lift (%Pop)				
Location of Injury	Arm	-18% (11%)	-19% (9%)	-22% (18%)	-14% (12%)	-26% (11%)
	Back, external	41% (14%)	43% (16%)	52% (8%)	40% (13%)	43% (16%)
	Back, internal	39% (0%)	-11% (0%)	73% (0%)	49% (0%)	33% (0%)
	Bones	16% (1%)	15% (1%)	32% (1%)	32% (1%)	5% (2%)
	External	28% (3%)	26% (3%)	52% (2%)	23% (3%)	36% (3%)
	Foot	-19% (4%)	-27% (3%)	-17% (7%)	-18% (5%)	-24% (3%)
	Hand	-24% (7%)	-26% (4%)	-31% (17%)	-22% (7%)	-28% (6%)
	Head, external	43% (5%)	42% (5%)	59% (3%)	45% (5%)	37% (4%)
	Head, internal	112% (2%)	90% (2%)	144% (3%)	86% (2%)	141% (3%)
	Knee	-32% (15%)	-32% (17%)	-17% (8%)	-24% (13%)	-41% (17%)
	Leg	-16% (10%)	-16% (12%)	18% (3%)	-13% (11%)	-20% (9%)
Organ, internal	35% (1%)	-3% (1%)	83% (1%)	-11% (1%)	90% (1%)	
Shoulder	-24% (16%)	-24% (16%)	-25% (19%)	-21% (18%)	-30% (14%)	
Other	28% (10%)	27% (11%)	33% (9%)	28% (9%)	28% (12%)	
Nature of Injury	Back	40% (13%)	43% (15%)	43% (7%)	38% (11%)	44% (17%)
	Fracture	-32% (7%)	-28% (8%)	-	-28% (6%)	-37% (8%)
	Musculoskeletal	0% (16%)	-	-15% (69%)	0% (21%)	-8% (7%)
	Pain	-5% (13%)	-7% (12%)	-4% (15%)	4% (13%)	-19% (14%)
	Sprain	-28% (22%)	-24% (29%)	-	-24% (21%)	-33% (24%)
	Traumatic injury, other	4% (16%)	9% (20%)	-	2% (17%)	6% (14%)



		Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS	
Prolonged DM Proportion		23%	22%	27%	24%	22%	
Number of Claimants in Population		1,326,153	1,023,646	301,826	801,351	524,802	
Percent of Claimants in the Total Population		100%	77%	23%	60%	40%	
		Lift (%Pop)					
Wound, including contusion		-1% (6%)	4% (8%)	-	-4% (6%)	3% (7%)	
Other natures		55% (6%)	26% (5%)	95% (8%)	46% (4%)	64% (8%)	
Cause of Injury	Animal or insect, including dog bite	-2% (1%)	3% (1%)	15% (0%)	-2% (2%)	-10% (0%)	
	Fall	-14% (21%)	-9% (27%)	-16% (0%)	-14% (18%)	-13% (25%)	
	Handling mail	6% (13%)	9% (12%)	-6% (16%)	3% (16%)	10% (8%)	
	Handling manual equipment	-6% (17%)	-2% (14%)	-19% (26%)	-5% (16%)	-8% (17%)	
	Slip	-33% (9%)	-29% (11%)	-50% (1%)	-32% (9%)	-34% (8%)	
	Striking against material equipment	-7% (3%)	-1% (3%)	-70% (0%)	-8% (3%)	-4% (2%)	
	Other causes	16% (31%)	12% (23%)	11% (56%)	16% (29%)	17% (32%)	
	Type of Injury	Occupational	17% (23%)	-	-	11% (29%)	35% (13%)
		Traumatic	-5% (77%)	-	-	-4% (71%)	-5% (87%)
Time from Adjudication to DM Entry	2 months or less	-	-10% (50%)	-2% (34%)	-8% (47%)	-11% (46%)	
	2-4 months	-	0% (18%)	-15% (15%)	-5% (16%)	-3% (18%)	
	4-6 months	-	-6% (8%)	-17% (9%)	-10% (8%)	-6% (9%)	
	6-8 months	-	0% (5%)	0% (7%)	-1% (5%)	5% (6%)	
	8-10 months	-	10% (3%)	1% (5%)	7% (4%)	10% (4%)	
	10 months-1 year	-	15% (2%)	-10% (4%)	5% (3%)	13% (3%)	
More than 1 year	-	41% (12%)	17% (24%)	33% (16%)	37% (14%)		
Sex	Female	5% (53%)	6% (49%)	0% (64%)	5% (59%)	5% (42%)	
	Male	-6% (47%)	-6% (51%)	0% (36%)	-7% (41%)	-3% (58%)	
Age	Under 30	-	-29% (6%)	10% (2%)	-26% (3%)	-25% (7%)	
	30-39	-	-6% (17%)	2% (13%)	-1% (15%)	-9% (19%)	
	40-49	-	6% (33%)	0% (38%)	3% (35%)	7% (32%)	
	50-59	-	2% (35%)	-2% (40%)	0% (39%)	3% (32%)	
	Over 60	-	0% (10%)	8% (7%)	-4% (9%)	6% (10%)	
Agency	Corporation For National - Community Service	155% (0%)	269% (0%)	-100% (0%)	-	-	
	Defense Agencies	-15% (11%)	-16% (12%)	-3% (7%)	-	-	
	Department Of Agriculture	-9% (2%)	-13% (2%)	8% (2%)	-	-	
	Department Of Commerce	15% (1%)	18% (1%)	45% (0%)	-	-	
	Department Of Education	76% (0%)	100% (0%)	-100% (0%)	-	-	
	Department Of Energy	-50% (0%)	-45% (0%)	-75% (0%)	-	-	
	Department Of Health - Human Services	17% (0%)	4% (1%)	98% (0%)	-	-	
	Department Of Homeland Security	-5% (9%)	-4% (10%)	13% (3%)	-	-	



	Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS	
Prolonged DM Proportion	23%	22%	27%	24%	22%	
Number of Claimants in Population	1,326,153	1,023,646	301,826	801,351	524,802	
Percent of Claimants in the Total Population	100%	77%	23%	60%	40%	
	Lift (%Pop)					
Department Of Housing - Urban Development	-22% (0%)	-38% (0%)	60% (0%)	-	-	
Department Of Justice	3% (4%)	3% (5%)	53% (1%)	-	-	
Department Of Labor	-30% (1%)	-32% (1%)	3% (0%)	-	-	
Department Of State	68% (0%)	52% (0%)	116% (0%)	-	-	
Department Of The Interior	16% (2%)	15% (2%)	62% (1%)	-	-	
Department Of Transportation	90% (1%)	85% (1%)	150% (0%)	-	-	
Department Of Treasury	4% (1%)	3% (1%)	3% (1%)	-	-	
Department Of Veterans Affairs	-7% (7%)	-4% (8%)	-7% (4%)	-	-	
Environmental Protection Agency	34% (0%)	26% (0%)	129% (0%)	-	-	
Executive Office Of The President	24% (0%)	31% (0%)	-	-	-	
Federal Judiciary	15% (0%)	0% (0%)	73% (0%)	-	-	
General Services Administration	38% (0%)	58% (0%)	-71% (0%)	-	-	
Government Printing Office	6% (0%)	13% (0%)	-15% (0%)	-	-	
Independent Agencies	188% (0%)	203% (0%)	-	-	-	
National Aeronautics Space Administration	62% (0%)	81% (0%)	-31% (0%)	-	-	
Non-Chargeable Agencies	191% (0%)	200% (0%)	177% (0%)	-	-	
Other Establishments	49% (1%)	57% (1%)	22% (0%)	-	-	
Peace Corps	109% (0%)	123% (0%)	76% (0%)	-	-	
Smithsonian Institution	39% (0%)	36% (0%)	150% (0%)	-	-	
Social Security Administration	-12% (0%)	-27% (0%)	5% (1%)	-	-	
Tennessee Valley Authority	-1% (0%)	-9% (0%)	157% (0%)	-	-	
USPS	2% (60%)	2% (55%)	-3% (78%)	-	-	
Time from DOL Received to Adjudication	15-30 days	2% (6%)	4% (5%)	-7% (9%)	6% (6%)	-5% (5%)
	15 days or less	-11% (63%)	-7% (77%)	-14% (15%)	-11% (57%)	-10% (72%)
	30-45 days	14% (16%)	24% (15%)	-13% (18%)	11% (18%)	17% (13%)
	45-60 days	16% (5%)	47% (2%)	-9% (15%)	8% (6%)	37% (3%)
	60-75 days	23% (3%)	49% (0%)	3% (12%)	17% (4%)	36% (2%)
	75-90 days	23% (5%)	83% (0%)	3% (22%)	20% (7%)	28% (3%)
	Missing	24% (0%)	35% (0%)	-10% (0%)	40% (0%)	-25% (0%)



	Total Population	Traumatic Injury	Occupational Illness	USPS	Non-USPS
Prolonged DM Proportion	23%	22%	27%	24%	22%
Number of Claimants in Population	1,326,153	1,023,646	301,826	801,351	524,802
Percent of Claimants in the Total Population	100%	77%	23%	60%	40%
	Lift (%Pop)				
More than 90 days	82% (2%)	64% (0%)	60% (9%)	50% (3%)	145% (2%)

N = 120,416



Appendix C DISABILITY MANAGEMENT ACTIVITIES—DETAILED DEFINITIONS

The following tables provide further details of the disability management activities.

Table C-1: Disability Management Activities and Definitions, Other Disability Management Activities

Disability Management Activity— No Specific Phase	Definition
Other Intervention by Claims Examiner	When the Claims Examiner contacts the worker or previous employer to discuss a return-to-work date and/or the availability of limited duty work limitations and obtains a release to work. ²⁷
Nurse or Rehabilitation Intervention via CE	When the Claims Examiner contacts the field nurse or rehabilitation counselor and directs them on further actions on the case.
Letter Sent	The Claims Examiner sends several types of letters during the disability management process. The study includes the pre-reduction notice, pre-termination notice, eventual reduction via rehabilitation letter, and ten-month letter. The first three letters alert workers to an upcoming reduction or termination in benefits. The third letter is issued 10 months after the onset of disability and provides warning that the worker’s employing agency is only required to offer the worker his or her former position for up to one year after injury. ²⁸
Second Opinion Report Scheduled	The Claims Examiner may request a second opinion when the documentation they receive from the first opinion is insufficient or when clarification is required regarding the worker’s medical status. ²⁹
Referee Report Scheduled	The Claims Examiner requests a referee examination (third opinion) when the primary physician and the physician giving the second opinion have conflicting medical opinions. ³⁰
Interruption	Disability management may be interrupted by external events, such as pregnancy or a new injury unrelated to the worker’s work. It may also be interrupted by medical events such as the need for surgery or high levels of pain. ³¹
Non-Cooperation	The injured worker fails to engage in the disability management process. This includes failure to cooperate with nurses or the vocational rehabilitation process. ³²

²⁷ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECATransmittals/index.htm>

²⁸ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm>

²⁹ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FNHB-PT7/>

³⁰ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm>

³¹ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT2/group3.htm>

³² <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FNHB-PT2/#002002>.



Table C-2 shows key disability management activities in the Nurse Phase, the objectives of which are to coordinate with the worker, physician, and employing agency to help the worker return to work. The Claims Examiner may grant extensions to the Nurse Phase when a change in case status is expected.

Table C-2: Disability Management Activities and Definitions, Nurse Phase

Disability Management Activity–Nurse Phase	Definition
Start of Nurse Phase	The Nurse Phase starts with the assignment of a staff nurse, who coordinates the assignments of a field nurse who works directly with the worker and employing agency, reviews nurse reports, and communicates with the Claims Examiner as needed.
30-day Nurse Extension Granted	The initial assignment of a field nurse is four months. If a significant change in case status is expected, such as an imminent return-to-work, then the Claims Examiner may grant a 30-day extension to the Nurse Phase. ³³
60-day Nurse Extension Granted	The initial assignment of a field nurse is four months. If a significant change in case status is expected, such as an imminent return-to-work, then the Claims Examiner may grant a 60-day extension to the Nurse Phase.

Table C-3 defines disability management activities in the Vocational Rehabilitation Phase, which includes more intensive services designed to help the worker return to work.

Table C-3: Disability Management Activities and Definitions, Vocational Rehabilitation Phase

Disability Management Activity–Rehabilitation	Definition
Start of Vocational Rehabilitation Phase	The Vocational Rehabilitation Phase starts with the assignment of a rehabilitation specialist, who coordinates the assignments of a rehabilitation counselor to work directly with the worker and employing agency, review rehabilitation counselor reports, and communicate with the Claims Examiner as needed. ³⁴
Placement with Previous Employer	The vocational rehabilitation counselor assists in placing the worker with the previous employer. ³⁵
Plan Development	The rehabilitation counselor develops a customized plan for services focused on placement with a new employer. ³⁶ This typically occurs when the previous employer is unwilling or unable to offer the claimant alternative employment.
Placement with New Employer	The vocational rehabilitation counselor assists in placing the worker with a new employer if placement with a previous employer has failed. ³⁷
In Approved Training	The vocational rehabilitation counselor will coordinate training for the workers if they need to “develop job skills that enhance employability for target jobs that enhance wage restoration.” ³⁸
Medical Rehabilitation	Medical rehabilitation services appropriate for the

³³ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FNHB-PT3/#003007>

³⁴ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part2.htm#002009>

³⁵ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part2.htm#002Exhibit1>

³⁶ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part7.htm#007001>

³⁷ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part2.htm#002Exhibit1>

³⁸ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/RCHB/part2.htm#002Exhibit1>



Disability Management Activity–Rehabilitation	Definition
	impairment to enhance the worker’s employability; it is not limited to medical treatment for the injury itself. This can include physical therapy, speech therapy, orthotics, prosthetics, housing modifications, and/or vehicle modifications. ³⁹

³⁹ <https://www.dol.gov/owcp/dfec/regs/compliance/DFECfolio/FECA-PT8/#801008>



Appendix D TRANSITION MATRICES FOR THE TRAUMATIC INJURY, OCCUPATIONAL ILLNESS, USPS AND NON-USPS SUBPOPULATIONS

Table D-1 shows the transition matrices for the traumatic injury/occupational illness/USPS/non-USPS subpopulations. It shows some of the differences in these populations during the Rehabilitation Phase.

Table D-1: Transition Matrices for Vocational Rehabilitation Phase by Subpopulation

		Traumatic Injury						Occupational Illness									
		RHR	RHH	RHD	RHP	RHT	RHM	RTW			RHR	RHH	RHD	RHP	RHT	RHM	RTW
USPS	RHR		39.2%	29.2%			7.7%	6.4%		Occupational Illness	RHR		33.8%	35.7%		10.8%	5.0%
	RHH	8.6%		28.6%				26.6%	RHH		5.6%		33.9%				24.7%
	RHD	5.5%			15.9%	22.3%		11.8%	RHD		5.7%			13.5%	28.2%		10.7%
	RHP							22.4%	RHP								21.9%
	RHT				40.2%			14.0%	RHT					50.7%			9.4%
	RHM	8.2%	13.3%	13.3%				18.1%	RHM		9.3%	11.3%	14.8%				16.8%
	RTW										RTW						
Non-USPS	RHR		27.4%	40.6%			7.3%	5.3%	Occupational Illness	RHR		26.4%	41.3%		9.7%		
	RHH	8.1%		34.3%				23.6%		RHH	10.0%		35.6%				23.8%
	RHD	8.4%			23.8%	18.0%		6.6%		RHD	6.4%			22.0%	16.2%		5.8%
	RHP							22.7%		RHP							18.2%
	RHT				46.2%			8.8%		RHT				48.6%			11.0%
	RHM	10.1%	10.6%	14.2%				12.5%		RHM	11.9%	6.9%	16.9%				10.6%
	RTW									RTW							

N = 15,654



Appendix E COMPARISON OF CASES THAT ENTER NURSE PHASE AND IMMEDIATELY RETURN TO WORK TO THOSE WHO ENTER THE NURSE PHASE AND EXPERIENCE OTHER DISABILITY MANAGEMENT ACTIVITIES

Table E-1 compares cases that enter the Nurse Phase and immediately return to work to those that enter the Nurse Phase and experience other key disability management activities.

Table E-1 Comparing Nurse Phase Claimants Who Immediately Return to Work to Those that Do Not

Characteristic	Count		Percentage		
	Does Not Immediately Return to Work	Immediately Returns to Work	Does Not Immediately Return to Work	Immediately Returns to Work	
Location of Injury	Arm	5,295	7,586	11%	13%
	Back, external	6,829	4,680	14%	8%
	Back, internal	25	14	0%	0%
	Bones	598	666	1%	1%
	External	1,406	1,737	3%	3%
	Foot	1,901	2,744	4%	5%
	Hand	2,867	5,023	6%	9%
	Head, external	2,314	1,767	5%	3%
	Head, internal	1,046	571	2%	1%
	Knee	6,811	11,149	14%	19%
	Leg	4,941	6,873	10%	12%
	Organ, internal	372	552	1%	1%
	Other	5,295	4,523	11%	8%
	Shoulder	8,159	9,972	17%	17%
Nature of Injury	Back	6,586	4,527	14%	8%
	Fracture	3,301	5,242	7%	9%
	Musculoskeletal	7,009	8,491	15%	15%
	Other	2,900	3,036	6%	5%
	Pain	6,956	8,173	14%	14%
	Sprain	10,306	15,844	21%	27%
	Traumatic injury, other	7,194	8,176	15%	14%
	Wound, including contusion	3,097	3,789	6%	7%
Cause of Injury	Animal or insect, including dog bite	511	693	1%	1%
	Fall	10,300	13,400	21%	23%
	Handling mail	6,387	6,774	13%	12%
	Handling manual equipment	7,858	9,516	16%	16%
	Other causes	14,150	15,992	29%	28%
	Slip	4,028	6,613	8%	11%
	Striking against material equipment	1,221	1,586	3%	3%
Type of Injury	Occupational	10,601	11,202	22%	19%
	Traumatic	37,472	46,774	78%	81%
Time from Adjudication to DM Entry	2 months or less	23,189	29,145	48%	50%
	2–4 months	8,459	10,217	18%	18%
	4–6 months	3,791	5,270	8%	9%
	6–8 months	2,364	3,147	5%	5%
	8–10 months	1,688	1,992	4%	3%
	10 months–1 year	1,196	1,374	2%	2%
	More than 1 year	6,652	6,183	14%	11%



Characteristic		Count		Percentage	
		Does Not Immediately Return to Work	Immediately Returns to Work	Does Not Immediately Return to Work	Immediately Returns to Work
Sex	Female	24,990	26,863	52%	46%
	Male	23,101	31,147	48%	54%
Age	Under 30	2,559	3,417	5%	6%
	30–39	7,289	9,520	15%	16%
	40–49	15,327	18,164	32%	31%
	50–59	17,659	21,235	37%	37%
	Over 60	5,254	5,674	11%	10%
Agency	Corporation For National - Community Service	1	0	0%	0%
	Defense Agencies	4,762	7,016	10%	12%
	Department Of Agriculture	1,017	1,343	2%	2%
	Department Of Commerce	470	278	1%	0%
	Department Of Education	8	2	0%	0%
	Department Of Energy	79	125	0%	0%
	Department Of Health - Human Services	247	240	1%	0%
	Department Of Homeland Security	3,587	5,575	7%	10%
	Department Of Housing - Urban Development	30	44	0%	0%
	Department Of Justice	1,747	2,440	4%	4%
	Department Of Labor	504	508	1%	1%
	Department Of State	52	34	0%	0%
	Department Of The Interior	911	979	2%	2%
	Department Of Transportation	360	270	1%	0%
	Department Of Treasury	538	615	1%	1%
	Department Of Veterans Affairs	3,065	4,286	6%	7%
	Environmental Protection Agency	21	21	0%	0%
	Executive Office Of The President	3	1	0%	0%
	Federal Judiciary	64	107	0%	0%
	General Services Administration	63	48	0%	0%
	Government Printing Office	40	25	0%	0%
	Independent Agencies	1	2	0%	0%
	National Aeronautics Space Administration	17	16	0%	0%
	Non-Chargeable Agencies	1	1	0%	0%
	Other Establishments	348	240	1%	0%
	Peace Corps	145	41	0%	0%
	Smithsonian Institution	67	40	0%	0%
	Social Security Administration	254	253	1%	0%
	Tennessee Valley Authority	72	90	0%	0%
	USPS	29,614	33,368	62%	58%
Time from DOL Received to Adjudication	15–30 days	30,049	40,028	62%	69%
	15 days or less	2,622	3,016	5%	5%
	30–45 days	7,942	7,812	17%	13%
	45–60 days	2,299	2,283	5%	4%
	60–75 days	1,459	1,551	3%	3%
	75–90 days	2,538	2,620	5%	5%



Characteristic	Count		Percentage	
	Does Not Immediately Return to Work	Immediately Returns to Work	Does Not Immediately Return to Work	Immediately Returns to Work
More than 90 days	1,142	681	2%	1%

N = 106,101



Appendix F DETAILS ON TIMING OF DISABILITY MANAGEMENT ACTIVITIES

Table F-1 shows the same results as **Figure 9**, in table form. We also provide the total percent that has closed and total percent that has returned to work in the last two columns of the table.

Table F-1: Timing of Disability Management Activities

Time	Other	Other— Inactive	Nurse	Nurse— Inactive	Rehabilitation	RTW— Open	RTW— Closed	Closed— No RTW	Total RTW	Total Closed
Start	25%	0%	72%	0%	1%	0%	0%	0%	0%	0%
1 Month	9%	0%	66%	0%	1%	14%	8%	2%	22%	10%
3 Months	4%	0%	39%	0%	1%	24%	28%	3%	52%	32%
6 Months	1%	1%	21%	2%	2%	19%	49%	4%	68%	53%
9 Months	1%	1%	13%	3%	3%	15%	58%	5%	73%	64%
12 Months	1%	1%	9%	3%	3%	12%	64%	7%	76%	72%
18 Months	0%	1%	5%	4%	4%	9%	70%	8%	78%	77%
24 Months	0%	1%	4%	3%	4%	7%	73%	9%	80%	82%
30 Months	0%	1%	4%	2%	4%	5%	76%	9%	80%	85%

N = 120,416

Notes: [1] For simplicity, all disability management codes that start with N are included in the “Nurse Phase” and all disability management status codes that start with “R” are included in the “Rehabilitation Phase,” with the exception of those that indicate a return-to-work.

[2] RTW – Open represents the fraction of workers who have returned to work but still have an open disability management case. RTW – Closed represents the fraction of workers who have returned to work and whose cases have closed. Total RTW is equal to the sum of RTW – Open and RTW – Closed. Nurse– Inactive and Other– Inactive represent cases that at one point received nurse or other disability management activities, respectively, and have received no other services for at least 4 months at the point in time indicated.

[3] Some rows do not sum to 100% due to rounding.

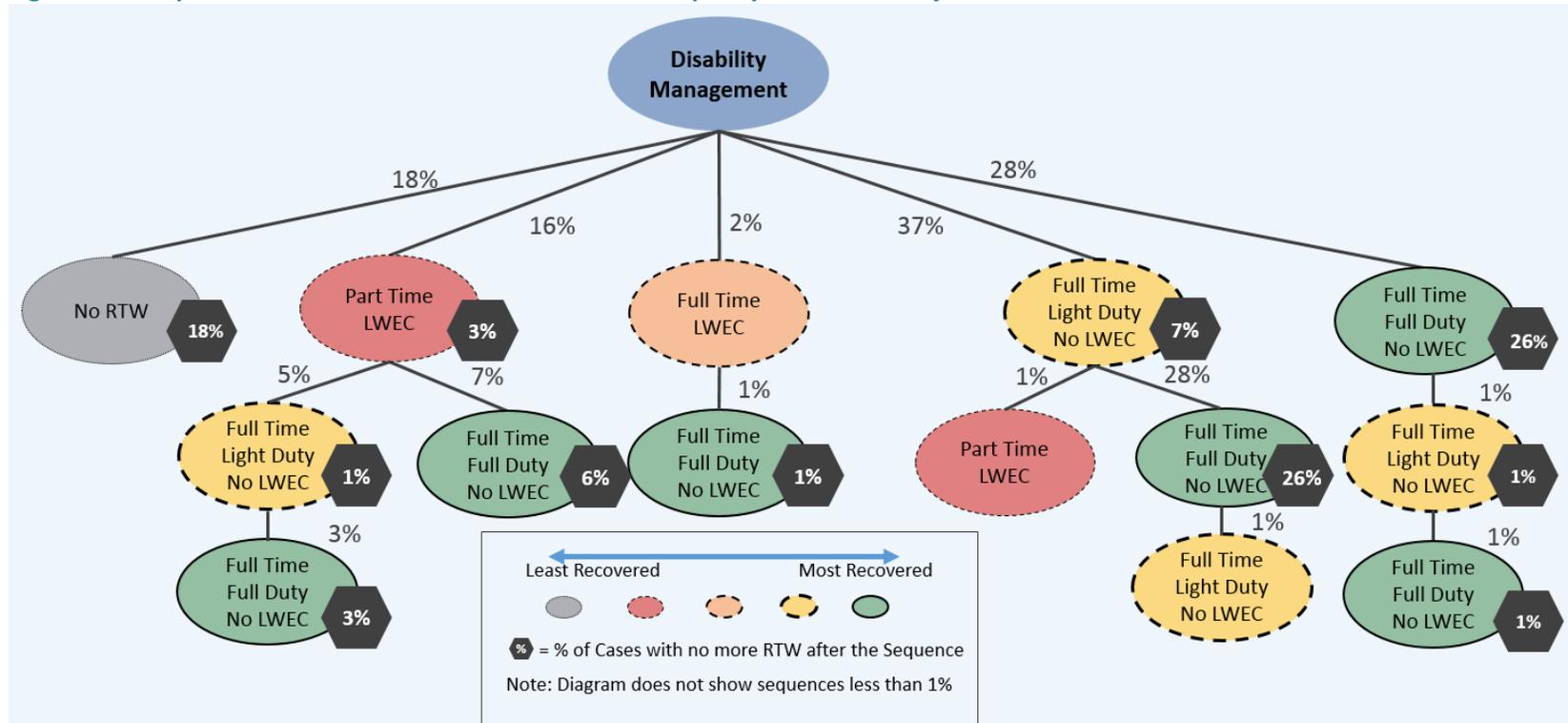
[4] The survival plots in Sections 2 and 3 represent estimated survival fractions, while this table represents actual stages of cases at each point in time.



Appendix G RETURN-TO-WORK SEQUENCES: OUTCOMES AND CAPACITY AT RETURN-TO-WORK

Figure G-1 illustrates the paths taken by claimants in the study population who returned to work. Only 18% did not return to work at all; 28% returned to full time, full duty work right away; and 37% had full time, light duty work as a first step on their road to recovery. In general, workers either returned to work with full recovery or progressed from less recovered states to more recovered states over time.

Figure G-1: Sequences of Return-to-Work Outcomes and Capacity at Which an Injured Worker Returned to Work



N = 120,416