MONTANA

Injured Worker Survey

REPORT

An Analysis of Injured Worker Outcomes and Predictors in the Montana Workers' Compensation System

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LABOR & INDUSTRY

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Executive Summary

Every year, thousands of workers in Montana suffer a work-related injury resulting in lost wages. Although workers are a major stakeholder of the workers' compensation system, the available data are insufficient to draw conclusions about many key outcomes for injured workers who file a workers' compensation claim.

The Montana Injured Worker Survey project provides insight into outcomes for injured workers in Montana and factors associated with better or worse outcomes. These findings may be of value to Montana policymakers, healthcare providers, employers, insurers, and other stakeholders seeking ways to improve injured worker outcomes, as well as improvements to Montana's workers' compensation system.

Key Points from Data Collection

- 3,710 surveys were mailed out to a random sample of the population of interest, and 379 completed surveys were returned to the Department.
- Worker outcomes of interest included access to care, satisfaction with care, financial impact, recovery of health, and return to work. Predictors of interest included elements across worker characteristics, employment characteristics, injury characteristics, and other characteristics that may have affected worker outcomes.
- Respondents closely represented the population of interest across various claim characteristics, including gender, injury type, industry group, occupational hazard group, injury year, plan type, and claim status.
- Results may be biased by age and by more financially serious claims. Workers over the age of 60 disproportionally represent the group of respondents compared to the population of interest, and workers with more financially serious claims were more likely to respond to the survey.

Major Takeaways from Data Analysis

- Trust in the workplace, as measured by workers' concern for being fired or laid off after their injury, was the most common predictor associated with injured worker outcomes.
- 19% of workers reported they were not working at the time of survey primarily due to their work injury, and 15% reported they had not returned to any work for at least 30 consecutive days primarily due to their injury.
- Workers who reported disability duration of greater than 180 days and workers with no return to work had increased odds of reporting a major impact in their ability to afford essential payments.
- Workers with sprains or strains of the back and neck experienced the lowest recovery of health.
- Workers reported greater satisfaction with the care they received when their healthcare provider discussed a work plan or suggested workplace accommodations. Similarly, workers reported better financial outcomes when their employer discussed a work plan or offered accommodations.
- Workers who reported their insurer reassigned their primary healthcare provider had increased odds of also reporting access to care problems and lower levels of satisfaction with their medical care.

Introduction

When looking for ways to measure various components of states' workers' compensation systems, stakeholders traditionally rely on metrics such as employer premiums, rate of claims, the amount of benefits paid out, frequency of denials or disputes, or other concrete measures that can provide information on how the system is functioning and how changes in policy impact the system. While these data are vital, current data reporting requirements lack effective metrics for evaluating the outcomes and experiences of one key stakeholder group: injured workers. Benefits paid out or employer premiums may be used as proxies to make inferences about the general status of injured workers in Montana, but they are unable to capture the scope and complexity of how an injured worker fares through the workers' compensation system. As a result, outcomes for injured workers in Montana are largely anecdotal.

The purpose of the Montana Injured Worker Survey project was to gain a better understanding of workers' experiences and the impacts of a work-related injury by gathering data not otherwise available in order to measure injured worker outcomes and analyze associated factors that may help predict better or worse outcomes. The Montana Injured Worker Survey utilizes survey methodology established by researchers at the Workers' Compensation Research Institute (WCRI) as the foundation for the survey and analysis on injured workers in Montana (Victor, R. A., Savych, B., & Thumula, V., 2014 and 2015). However, the objective was not to seamlessly recreate WCRI's injured worker survey studies. Although there are many similarities between the Montana Injured Worker Survey and the WCRI injured worker survey studies, due to differences in available resources, data, and variables of interest, there are various areas where methodology between the two diverge. Accordingly, the results of this report are not directly comparable to the results of those states surveyed by WCRI, and differences in the underlying methodology should be kept in mind when attempting to make comparisons.

The following report is separated by the *Data Collection* and *Data Analysis* sections. The *Data Collection* section contains information about how the population of interest was designated, details on the variables of interest, how the survey was designed and administered, a summary of survey responses, and an evaluation for potential bias. The *Data Analysis* section is divided by the primary outcomes of interest, including a summary of the results for each outcome measure, followed by the results of the analysis for the predictors found to be associated for a given outcome.

Injured workers deserve a voice in the workers' compensation system, and the Montana Injured Worker Survey is the first of its kind in Montana seeking to systematically measure the impacts of a work-related injury from the perspective of the injured worker.

Data Collection

- Population
- Outcomes & Predictors
- Survey Instrument
- Sampling & Respondents
- Comparison of Respondents to Population

Population

The population was extracted from the Montana Department of Labor & Industry, Employment Relations Division's Worker Compensation Administration Network (WCAN) database. The data is as reported by insurers to the Department. The population of interest included individuals with a workers' compensation claim who received wage-loss benefits between calendar years 2013 through 2015.

Claims three to five years matured were selected because we are most interested in estimates that reflect the long-term outcomes of an injury. Medical-only claims were excluded for primarily two reasons: first, the administrative database does not include comprehensive data on medical-only claims outside of the first report of injury (FROI), but also because we recognize claims with wage-loss and medical-only claims as two distinct groups. Although medical-only claims occur more frequently, wage-loss claims account for the largest share of workers' compensation costs, tend to include more serious injuries, and are most likely to negatively impact the worker and their family through the loss of income, in addition to the employer and the economy through losses in productivity and potential increases in premiums.

The population included claimants who received temporary total disability benefits, temporary partial disability benefits, permanent partial disability benefits, or a combination of the three. Most claimants received temporary total disability benefit payments at some point during their claim, but approximately 6% of claimants received only temporary partial disability benefits and/or permanent partial disability benefit payments. Individuals receiving permanent total disability benefit payments were excluded from the population due to very low numbers (approximately .33% of claims at the time of data extraction) and the inability to guarantee a large enough response from that group of recipients.

The total number of wage-loss claims for the study period included 10,516 claims. However, within the study period, there were 385 individuals that had two or more wage-loss claims. For those individuals who had multiple wage-loss claims within the study period, only the most recent injury within the study period was included to be sampled from, to ensure an injured worker could only receive one survey. The total count of unique individuals, rather than claims, was 10,116.

Outcomes & Predictors

Through administering a survey, we aimed to gather more data across multiple variables. Often these variables are either unaccounted for or are incomplete within the administrative claims database. Variables can be divided into outcomes and predictors. Outcomes include those dependent variables we are interested in measuring, and predictors include those factors we conceive or suspect may either positively or negatively impact worker outcomes.

Outcomes of Interest:

- **Access to Care:** Did the worker have trouble obtaining either their desired primary healthcare provider or their desired medical treatment or services?
- **Satisfaction with Care:** Was the worker satisfied with the care they received from their primary healthcare provider? Was the worker satisfied with the medical care they received overall?
- **Financial Impact:** To what degree did the worker's injury affect their ability to afford necessities and other payments? If the worker did successfully return to work, how long before the worker recovered financially, and did the worker suffer a loss in earnings due to their injury since returning to work?
- **Recovery of Health:** Did the worker fully recover from their injury?
- **Return to Work & Disability Duration:** Was the worker able to return to any substantial work following their injury and how long was the worker out of work before doing so? Was the worker able to remain at work?

Predictors of Interest:

- **Worker Characteristics,** such as the worker's gender, age, marital status, education, whether the worker had young children, whether the worker had health insurance, and comorbid conditions unrelated to the worker's injury;
- **Employment Characteristics,** such as the worker's wage, tenure with employer, job satisfaction, and trust in the workplace, as well as the type of industry, occupation and the size of the business.
- **Injury Characteristics,** included worker's type of injury and the severity of their injury; and
- **Other Characteristics,** such as labor market conditions, urbanization, and other potential predictors or controls.

To obtain valid estimates, variables should be defined in a way that corresponds accurately with what we seek to measure. Table 1 defines each outcome of interest, and Table 2 defines the predictive variables of interest. In many cases, we attempted to match WCRI's variable definitions. Variables that are defined either the same or similar to WCRI's injured worker survey studies are marked (*).

Table 1

Outcomes of Interest

Access to Care	
Problems getting desired primary healthcare provider*	Worker was asked if they experienced problems getting their desired primary healthcare provider; categories included (1) no problems, (2) small problems, and (3) big problems
Problems getting desired medical treatment or services*	Worker was asked if they experienced problems getting their desired medical treatment or services; categories included (1) no problems, (2) small problems, and (3) big problems
Satisfaction with Care	
Satisfaction with primary healthcare provider*	Worker was asked about their level of satisfaction with the medical care they received from their primary healthcare provider; categories included (1) very satisfied, (2) somewhat satisfied, (3) somewhat dissatisfied, and (4) very dissatisfied
Satisfaction with overall medical treatment*	Worker was asked about their level of satisfaction with the medical care they received overall; categories included (1) very satisfied, (2) somewhat satisfied, (3) somewhat dissatisfied, and (4) very dissatisfied
Financial Impact	
Spending ability	Worker was asked whether their injury impacted their ability to afford essential payments; categories included (1) no impact, (2) minor impact, and (3) major impact
Time to financial recovery	Worker was asked about the length of time to financial recovery after achieving substantial return to work; categories included (1) 0 to 90 days, (2) 91 to 180 days, (3) 181 to 365 days, (4) greater than 12 months, and (5) not financially recovered
Earnings loss*	Worker was asked if they experienced a loss in earnings since substantial return to work due to injury; categories included (1) no loss in earnings, (2) small loss in earnings, and (3) large loss in earnings
Recovery of Health	
Recovery of health*	Worker's perceived recovery of health; quantitative variable measured as the difference between a worker's SF-12v2™ score after their injury and their SF-12v2™ score at the time of the survey; larger numbers indicate greater perceived recovery
Return to Work & Disability Duration	
No substantial return to work primarily due to injury*	Worker was asked if they had returned to work for at least 30 consecutive days; 1 if worker had not returned to work for at least 30 consecutive days primarily due to their injury
Not working at time of survey primarily due to injury*	Worker was asked if they were currently working at the time of the survey; 1 if worker was not working at the time of survey primarily due to injury or if worker had not returned to work for at least 30 consecutive days primarily due to their injury
Disability duration	Worker was asked about the length of time they were out of work before achieving substantial return to work; categories included (1) less than 7 days, (2) 7 to 30 days, (3) 31 to 90 days, (4) 91 to 180 days, (5) 181 to 365 days, (6) greater than 12 months

**Variable defined either the same or similar to injured worker survey studies by Victor et al. (2014 and 2015)*

Table 2

Predictors of Interest

Worker Characteristics	
Gender	1 if female; 0 if male
Age	Worker's age at time of injury; categories include (1) under age 30, (2) age 30 to 39, (3) age 40 to 54, (4) age 55 to 60, (5) over age 60
Marital status*	1 if married; 0 if otherwise
Educational attainment*	Worker was asked about their highest level of education attained; categories included (1) less than high school diploma, (2) high school diploma or equivalent, (3) some college, and (4) college graduate or post-graduate
Children	1 if worker reported having children under the age of 18 at the time of injury; 0 if otherwise
Health insurance	1 if worker reported having health insurance at the time of injury; 0 if otherwise
Previous injury	1 if worker reported they had a previous injury that may have contributed to their workplace injury; 0 if otherwise
Multiple employers in the year before injury	A measure of job stability. 1 if worker reported having multiple employers in the year prior to their injury; 0 if otherwise
Comorbidity: Hypertension*	1 if worker reported receiving treatment for hypertension prior to injury; 0 if otherwise
Comorbidity: Diabetes*	1 if worker reported receiving treatment for diabetes prior to injury; 0 if otherwise
Comorbidity: Depression*	1 if worker reported receiving treatment for depression prior to injury; 0 if otherwise
Comorbidity: Lung conditions*	1 if worker reported receiving treatment for lung conditions prior to injury; 0 if otherwise
Comorbidity: Cancer*	1 if worker reported receiving treatment for cancer prior to injury; 0 if otherwise
Comorbidity: Heart problems*	1 if worker reported receiving treatment for heart problems prior to injury; 0 if otherwise
Comorbidity: Smoking history*	Worker was asked how long they have used cigarettes or tobacco products; categories (1) worker never smoked, (2) worker smoked 1 to 9 years, (3) worker smoked 10 or more years
Employment Characteristics	
Preinjury wage*	Worker's average preinjury weekly wage in dollars
Tenure with employer*	The difference between a worker's hire date and the date of their injury; categories included (1) less than 6 months, (2) 6 to 12 months, (3) 1 to 5 years, and (4) more than 5 years
Tenure in industry	Worker was asked about the length of time employed in the industry before injury; categories included (1) less than 6 months, (2) 6 to 12 months, (3) 1 to 5 years, and (4) more than 5 years
Part-time status*	1 if worker reported working under 35 hours per week on average; 0 if otherwise
Hourly status*	1 if worker reported being paid hourly; 0 if otherwise
Industry group	NCCI Industry Groups by policy; categories included (1) Manufacturing, (2) Contracting, (3) Office & Clerical, (4) Goods & Services, and (5) Miscellaneous
Occupational hazard group	NCCI Hazard Group by payroll code where group A represents occupations least likely to involve a financially serious claim and group G represents occupations most likely to involve a financially serious claim; categories include (1) Group A, (2) Group B, (3) Group C, (4) Group D, (5) Group E, (6) Group F, and (7) Group G

Table 2

Predictors of Interest

Job satisfaction*	Worker was asked about their level of job satisfaction at the time of their injury; categories included (1) very satisfied, (2) mostly satisfied, (3) somewhat satisfied, and (4) not at all satisfied
Concern for being fired or laid off	A measure of worker's trust in the workplace. Worker was asked about their concern for being fired or laid off after their injury; categories included (1) not concerned, (2) somewhat concerned, and (3) very concerned
Employer discussed work plan/offered accommodations	1 if worker reported that their employer/manager discussed a work plan with them or offered accommodations, such as fewer hours, modified duty, or additional breaks; 0 if otherwise
Employer's employee counts	A measure of business size; Employment counts from Quarterly Census of Employment and Wages (QCEW) database by employer federal identification number; categories included (1) less than 20 employees, (2) 20 to 49 employees, (3) 50 to 99 employees, (4) 100 to 249 employees, (5) 250 to 499 employees, and (5) greater than 499 employees
Injury Characteristics	
Injury type*	Categories were developed using a cross tabulation of WCIO's Nature of Injury and Part of Body codes; categories included (1) Back & Neck Sprains, Strains, (2) Other Sprains & Strains, (3) Fractures, (4) Lacerations & Contusions, (5) Inflammations, (6) Cumulative Disorders & ODs, and (7) Other Injuries
Perceived injury severity*	Worker's perceived injury severity; measured as the difference between a worker's SF-12v2™ score before their injury and their SF-12v2™ score after their injury; larger numbers indicate greater perceived severity; categories included (1) severity less than 15 points, (2) severity 15 to 24 points, (3) severity 25 to 34 points, and (4) severity 35 or more points
Other Characteristics	
Claim status	1 if worker's claim was an open claim; 0 otherwise
Plan type	Employer's workers' compensation plan type; categories include (1) self-insured, (2) private insurer, (3) Montana State Fund
Injury year	Worker's injury year; categories included (1) 2013, (2) 2014, and (3) 2015
Unemployment rate*	Monthly, county-level unemployment rate from BLS by date of injury
Metropolitan statistical area*	1 if the worker lived in a metropolitan statistical area at the time of injury as defined by the U.S. Census Bureau; 0 if otherwise
Provider discussed work plan/suggested accommodations	1 if worker reported that their healthcare provider discussed a work plan with them or suggested workplace accommodations, such as fewer hours, modified duty, or additional breaks; 0 if otherwise
Healthcare provider reassigned[i]	Worker was asked if their insurer reassigned their primary healthcare provider; 1 if worker reported insurer did reassign their primary healthcare provider; 0 if otherwise
Disability duration	1 if worker reported being out of work for greater than 180 days before achieving substantial return to work or if worker reported no substantial return to work; 0 otherwise (predictor for *spending ability* only)

**Variable defined either the same or similar to injured worker survey studies by Victor et al. (2014 and 2015)*

Survey Instrument

The survey was split into seven sections, including worker characteristics, employer characteristics, medical care characteristics, financial impact and return to work, the injured worker's health and well-being, injured worker comments, and a short additional section that included questions on the worker's satisfaction with their claims adjustor and their satisfaction with the Montana Department of Labor & Industry customer service (if applicable). In total, the survey included sixty-five questions, however certain return to work questions may not have been applicable to all respondents. To ensure confidentiality, a unique 8-digit number was assigned to each survey and was later used to link back to the worker's claim data in the administrative database. Surveys were mailed with a letter, which included the purpose of the survey and the date of injury for which the individual was selected, and a set of instructions for taking the survey. The letter also included language to assure workers their responses were strictly for research purposes only and individual responses would not impact the worker's claim or be shared with any third party. The survey was voluntary, but to incentivize participation, all completed and returned surveys were submitted for a gift card drawing.

SF-12v2™ Health Survey

We followed WCRI's method for measuring perceived injury severity and perceived recovery of health by including a modified version of the SF-12v2™ Health Survey nested within the Montana Injured Worker survey. The SF-12v2™ is a commonly used tool to measure health comprised of twelve questions about an individual's health and function combined to calculate a single score on a scale from 0 to 100 with higher scores indicating better health. Our modifications were to the recall period of the survey. Section 5 of the survey included the SF-12v2™ survey three times: part (a) asked workers to answer the SF-12v2™ survey questions thinking about their health before their injury, part (b) asked workers to respond about their health after their injury, and part (c) asked workers to respond about their health at the time of their survey. Accordingly, each respondent had three distinct scores.

The usual recall periods for the SF-12v2™ survey are four weeks (standard) and one week (acute), so we recognize that modifying the recall period could introduce bias into the survey if respondents are unable to accurately recall the details surrounding their injury. However, we also follow WCRI's logic in the assumption that workers would be able to recall the details of significant events, such as a work injury requiring time away from work. Modifications to the recall period may also compromise validity for comparisons of norms. We asked the full set of questions on the SF-12v2™ survey for all three periods of time, which is a marked deviation from WCRI's methodology.

Sampling & Respondents

From the population, surveys were mailed out to a random sample of 3,710 injured workers. We anticipated a low response rate and inflated the total number of surveys mailed out accordingly. Approximately 10% of responses were *returned and accepted* for a total count of 379 injured worker respondents. Workers could choose to complete the survey via the mail-in option or the online option, and 90% responded via the paper copy of the survey.

Surveys were *not* accepted and thereby excluded from analysis if the individual did not respond about the injury for which they were sampled, we had reason to suspect the individual was not the correct injured worker, the returned survey was missing pages or a large portion of the survey was incomplete, or if responses were illogical. For example, a small number of survey respondents reported they experienced no return to work since their injury, but also answered questions specific to respondents that had experienced return to work. These were not included in the total count of respondents. The total count of excluded surveys was 29, or 7% of the total number of returned surveys.

There was no response from 3,302, or approximately 89%, of the total mailed out surveys. 21% of these were returned to the Department and marked as undeliverable due to incorrect addresses, and 79% did not return to the Department at all.

Table 3

Survey Response Summary

Surveys Mailed Out	3,710
Survey's Returned	408 (11% of total mailed out)
Survey's Accepted	379 (93% of total returned surveys)
Responded Via Mail-In	90% of accepted surveys
Responded Via Online	10% of accepted surveys
Survey's Not Accepted	29 (7% of total returned surveys)
No Response due to Incorrect Address	691 (19% of total mailed out)
No Response for Other Reason	2,611 (70% of total mailed out)

Profile of Survey Respondents

Table 4 provides a profile of survey respondents as defined by the predictors of interest. The data may contain missing or incomplete information. If the missing data were less than 1% for a given variable, that was omitted from Table 4.

Table 4

Profile of Respondents by Predictor of Interest

Worker Characteristics	
Gender	Male: 66% Female: 34%
Age	Under 30: 7% 30 – 39: 9% 40 – 54: 35% 55 – 60: 21% Over 60: 27%
Marital status	Married: 66% Other: 34%

Table 4

Profile of Respondents by Predictor of Interest

Educational attainment	Less than high school diploma: 4% High school diploma or GED: 37% Some college: 37% College graduate or post-graduate: 22%
Children	Worker reported having children under the age of 18 at the time of injury: 23%
Health insurance	Worker reported health insurance at the time of injury: 85%
Previous injury	Worker reported they had a previous injury that may have contributed to their workplace injury: 9%
Multiple employers in the year before injury	Worker reported having multiple employers in the year prior to their injury: 16%
Comorbidity: Hypertension	Worker reported receiving treatment for hypertension prior to injury: 17%
Comorbidity: Diabetes	Worker reported receiving treatment for diabetes prior to injury: 6%
Comorbidity: Depression	Worker reported receiving treatment for depression prior to injury: 12%
Comorbidity: Lung conditions	Worker reported receiving treatment for lung conditions prior to injury: 3%
Comorbidity: Cancer	Worker reported receiving treatment for cancer prior to injury: 5%
Comorbidity: Heart problems	Worker reported receiving treatment for heart problems prior to injury: 6%
Comorbidity: Smoking history	Worker never smoked: 52% Worker smoked 1 to 9 years: 13% Worker smoked 10 or more years: 32% Unknown: 3%
Employment Characteristics	
Preinjury wage	Mean preinjury weekly wage: $705
Tenure with employer	Less than 6 months: 15% 6 to 12 months: 10% 1 to 5 years: 29% Greater than 5 years: 46%
Tenure in industry	Less than 6 months: 5% 6 to 12 months: 4% 1 to 5 years: 20% Greater than 5 years: 70%
Part-time status	Worker reported working on average less than 35 hours per week: 17%
Hourly status	Worker reported being paid by the hour: 88%
Industry group	Manufacturing: 9% Contracting: 16% Office & Clerical: 15% Goods & Services: 39% Miscellaneous: 21%
Occupational hazard group	A: 2% B: 16% C: 31% D: 12% E: 17% F: 16% G: 4%

Table 4

Profile of Respondents by Predictor of Interest

Job satisfaction	Completely satisfied: 43% Mostly satisfied: 46% Somewhat satisfied: 10% Not at all satisfied: 1%
Concern for being fired or laid off	Not concerned at all: 56% Somewhat concerned: 19% Very concerned: 24%
Employer discussed work plan/offered accommodations	Worker reported their employer/manager discussed a work plan with them or offered accommodations: 50%
Employer's employee counts	Less than 20 employees: 21% 20 to 49 employees: 12% 50 to 99 employees: 12% 100 to 249 employees: 12% 250 to 499 employees: 4% Greater than 499: 21% Unknown: 17%
Injury Characteristics	
Injury type	Back & Neck Sprains, Strains: 23% Other Sprains & Strains: 33% Fractures: 15% Lacerations & Contusions: 9% Inflammations: 3% Cumulative Disorders & OD: 3% Other Injuries: 14%
Perceived injury severity	Severity less than 15 points: 41% Severity 15 to 24 points: 24% Severity 25 to 34 points: 26% Severity 35 or more points: 10%
Other Characteristics	
Claim status	Closed: 85%
Plan type	1: 19% 2: 42% 3: 39%
Injury year	2013: 33% 2014: 32% 2015: 36%
Unemployment rate	Mean: 4.83
Metropolitan statistical area	Worker lived in a metropolitan statistical area: 32%
Provider discussed work plan/suggested accommodations	Worker reported their healthcare provider discussed a work plan with them or suggested accommodations: 53%
Healthcare provider reassigned	Worker reported their insurer reassigned their primary healthcare provider: 10%

Comparison of Respondents to Population

Ideally, survey respondents are representative of the greater population of claimants. If survey respondents do not accurately represent the population, then we may not assume the estimates acquired from respondents apply to the population. Respondent representativeness was assessed by claim costs and by claimant characteristics.

For these comparisons, we used the total population of *claims* (n=10,518), rather than the unique set of individuals which we sampled from, to obtain the fullest and most accurate representation of wage-loss claims within the study period.

Claim Costs

Table 5 compares the benefits paid-out for claims in the population versus claims of survey respondents. In general, respondents had more financially serious claims. This makes sense if we expect workers more seriously impacted by their injury to be more likely to opt-in to participating in the survey. Although the overall difference is unremarkable, because they are consistent, we may assume the results are biased towards more financially serious claims.

Table 5

Benefits Paid-Out in Population vs. Respondents

	Population	**Respondents**
Average Wage-Loss Benefits	$10,900	$14,500
Median Wage-Loss Benefits	$3,000	$4,300
Proportion of Claims with Wage-Loss over $6,000	35%	44%
Average Medical Benefits	$18,400	$26,000
Median Medical Benefits	$8,000	$14,300
Proportion of Claims with Medical over $10,000	45%	60%

**Amounts rounded to the nearest 100th*

Claimant Characteristics

Table 6 compares characteristics of claimants in the population versus claim characteristics of respondents across various elements available in the administrative database (WCAN). As the administrative database may contain missing or incomplete data, if the missing data were less than 1% for a given variable, that was omitted from in Table 6.

Table 6

Claimant Characteristics in Population vs. Respondents

	Population	Respondents
Gender	Male: 64% Female: 32% Unknown: 4%	Male: 66% Female: 34% Unknown: 0%
Age	Under 30: 18% 30-39: 19% 40-54: 35% 55-60: 15% Over 60: 10% Unknown: 3%	Under 30: 7% 30-39: 9% 40-54: 35% 55-60: 21% Over 60: 27% Unknown: 0%
Preinjury weekly wage	Mean: $649 Median: $560	Mean: $705 Median: $652
Tenure with employer	Mean: 4 years 10 months Median: 1 year, 8 months Unknown: 9%	Mean: 7 years, 10 months Median: 4 years, 1 month Unknown: 9%
Injury type	Back & Neck Sprains, Strains: 21% Other Sprains & Strains: 37% Fractures: 11% Lacerations & Contusions: 14% Inflammations: 3% Cumulative Disorders & OD: 2% Other Injuries: 13%	Back & Neck Sprains, Strains: 23% Other Sprains & Strains: 33% Fractures: 15% Lacerations & Contusions: 9% Inflammations: 3% Cumulative Disorders & OD: 3% Other Injuries: 14%
Injury year	2013: 34% 2014: 34% 2015: 32%	2013: 33% 2014: 32% 2015: 36%
Plan type	1: 14% 2: 42% 3: 44%	1: 19% 2: 42% 3: 39%
Claim status	Closed: 86%	Closed: 85%
No TTD payments	Temporary Partial or Permanent Partial Disability payments only: 6%	Temporary Partial or Permanent Partial Disability payments only: 5%
Settlement	No: 84%	No: 82%
Industry group	Manufacturing: 9% Contracting: 18% Office & Clerical: 10% Goods & Services: 44% Miscellaneous: 16%	Manufacturing: 9% Contracting: 16% Office & Clerical: 15% Goods & Services: 39% Miscellaneous: 21%
Occupational hazard group	A: 5% B: 19% C: 27% D: 10% E: 16% F: 15% G: 2%	A: 2% B: 16% C: 31% D: 12% E: 17% F: 16% G: 4%
Employer's employee counts	Less than 20 employees: 25% 20 to 49 employees: 14% 50 to 99 employees: 10% 100 to 249 employees: 14% 250 to 499 employees: 7% Greater than 499 employees: 13% Unknown: 17%	Less than 20 employees: 21% 20 to 49 employees: 12% 50 to 99 employees: 12% 100 to 249 employees: 12% 250 to 499 employees: 4% Greater than 499 employees: 21% Unknown: 17%

Overall, comparisons of claimant characteristics of the population of claimants versus respondents suggest claims of respondents represent those of the population of wage-loss claims reasonably well. Of note, all *respondents* in the cumulative disorders & OD category had cumulative disorders, and the majority of those were carpal tunnel syndrome.

The major variation in the population of claimants versus the respondents is across *age*. For respondents, there is an overrepresentation of workers over 60 and an underrepresentation of workers under 40 (Table 6). This could be related to the high proportion of incorrect addresses within the sample if younger workers are more likely to relocate. As a likely result of an overrepresentation of older workers, preinjury weekly wage and tenure with employer are also somewhat higher in the group of respondents compared to the population. We considered that an older group of workers responding may also help explain, at least partially, why claim costs for respondents were above that of the population, as older workers may experience more severe injuries than younger workers.[iii] However, when we compare average and median benefits paid-out by age group for the population versus respondents, as shown in Figure 1, respondents tended to have more financially serious claims across all age groups compared to the population. Therefore, we conclude the disparities in benefits paid-out cannot wholly be explained by an overrepresentation of older workers. Regardless of age, workers were more likely to respond to the survey if their injury was more financially serious.

Figure 1

Benefits Paid-Out in Population vs. Respondents by Age Group

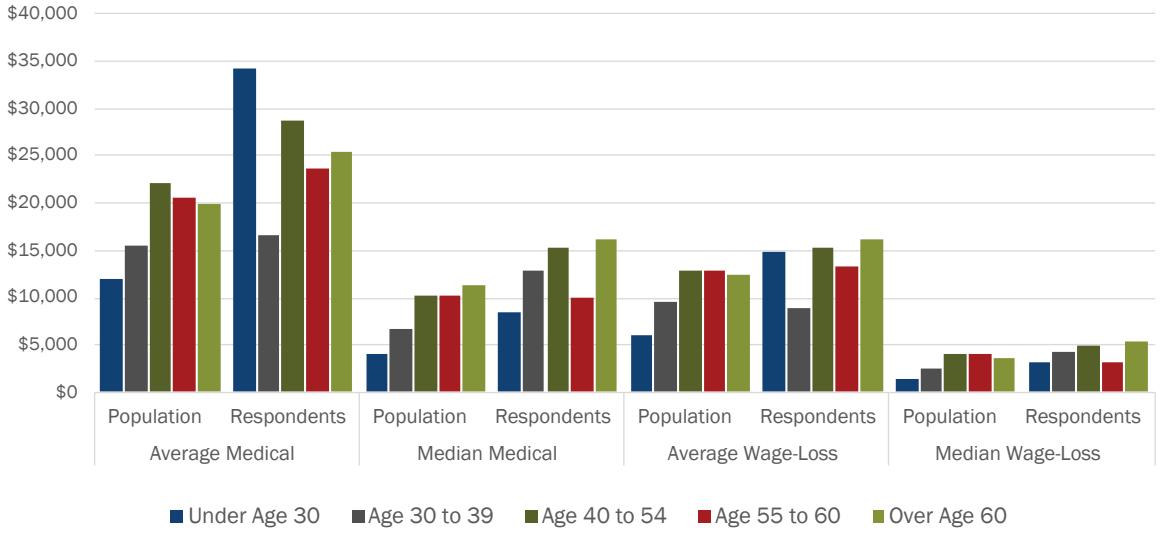
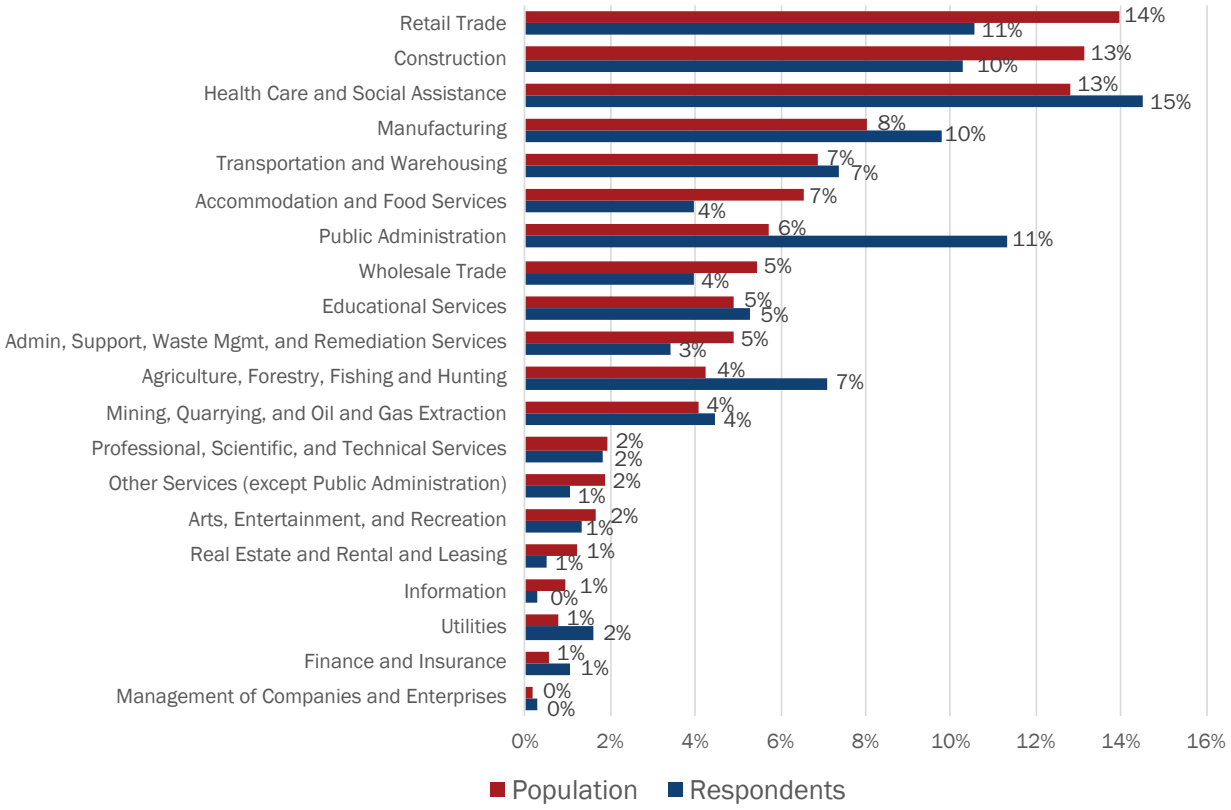


Figure 2

Distribution of Industry in Population vs. Respondents by NAICS Code



An additional industry comparison is included in Figure 2. Here, industry representation is compared across two-digit NAICS code, rather than NCCI industry groups. The greatest differences by two-digit NAICS codes are from Public Administration (-5%), Accommodation and Food Services (-3%), Retail Trade (-3%), Construction (-3%), and Agriculture, Forestry, Fishing and Hunting (-3%). Despite these differences, the top twelve industry groups are identical for both the population and respondents and comprise approximately 91% and 92%, respectively, of total industry representation by NAICS.

Despite efforts to identify bias, we also acknowledge the potential for other forms of response bias, such as incorrectly recalling events, emotional or socially desirable responses, or misinterpretation of survey questions, may still exist. However, we believe the study was still able to produce important information about the injured worker experience in Montana.

Data Analysis

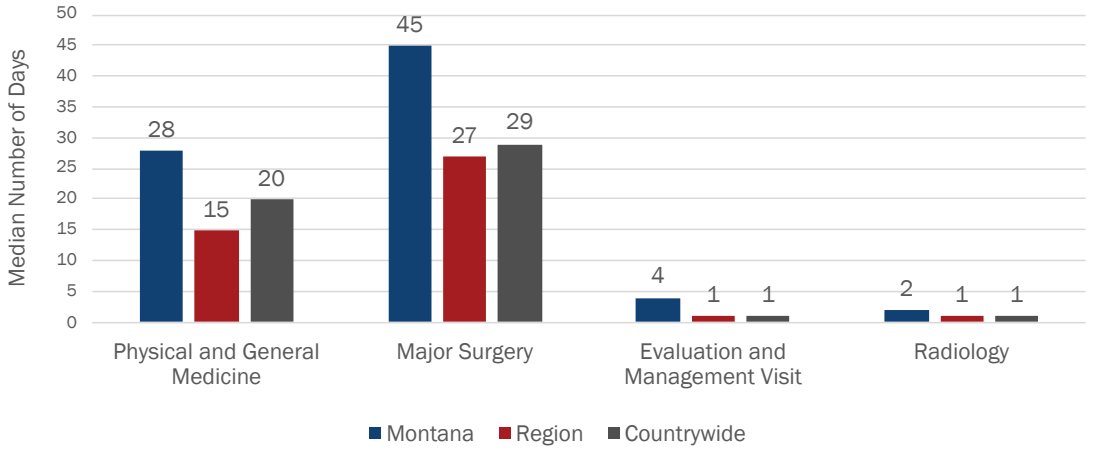
- Access to Care
- Satisfaction with Care
- Financial Impact
- Recovery of Health
- Return to Work & Disability Duration
- Other

Access to Care

Access to care is a common topic in workers' compensation, and this is especially true in Montana where physician shortages across the state, exacerbated in rural communities, means workers may have to wait longer and travel further to obtain care. As recently as 2017, 52 of Montana's 56 counties had physician shortages, and nine counties had no primary care doctors (Saboe, 2017). The Montana Medical Data Report provides further evidence of an access issue for injured workers in Montana (NCCI, September 2018). Figure 3 shows the median number of days between a worker's date of injury and the date on which the worker first received medical services for various physician service categories. In all four categories the median number of days until first treatment for physician services for injured workers in Montana exceeds that of the region and countrywide.[iv] With these types of constraints in mind, changes to workers' compensation policy must be carefully weighed against the prospect that providers may become unwilling to accept claims paid by workers compensation.

Figure 3

Time Until First Treatment for Physician Services



Source: NCCI's Medical Data Call for Accident Year 2016 and Service Years 2016 and 2017

To measure access to care from the perspective of injured workers, respondents were asked whether they experienced any problems attaining either their *desired primary healthcare provider* or their *desired medical treatment or services* after their injury. Overall, 21% reported difficulty in obtaining their desired primary healthcare provider and 30% of workers reported difficulty getting their desired medical treatment (Figure 4). Despite Montana's more rural nature, injured worker respondents in states surveyed by WCRI showed similar distributions across problems with access to care.

Figure 4

Percentage of Respondents that Reported Access to Care Problems

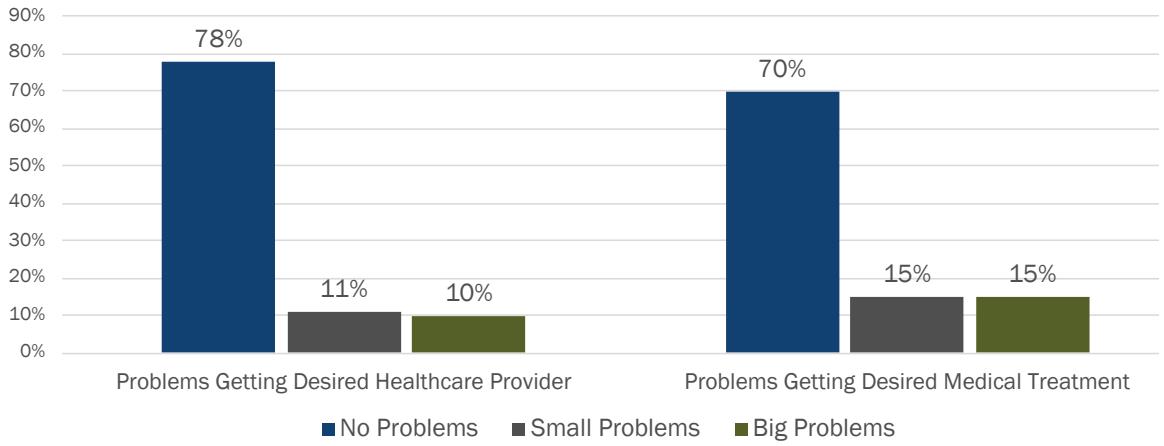


Figure 5

Access to Care Problems by Average SF-12v2™ Scores

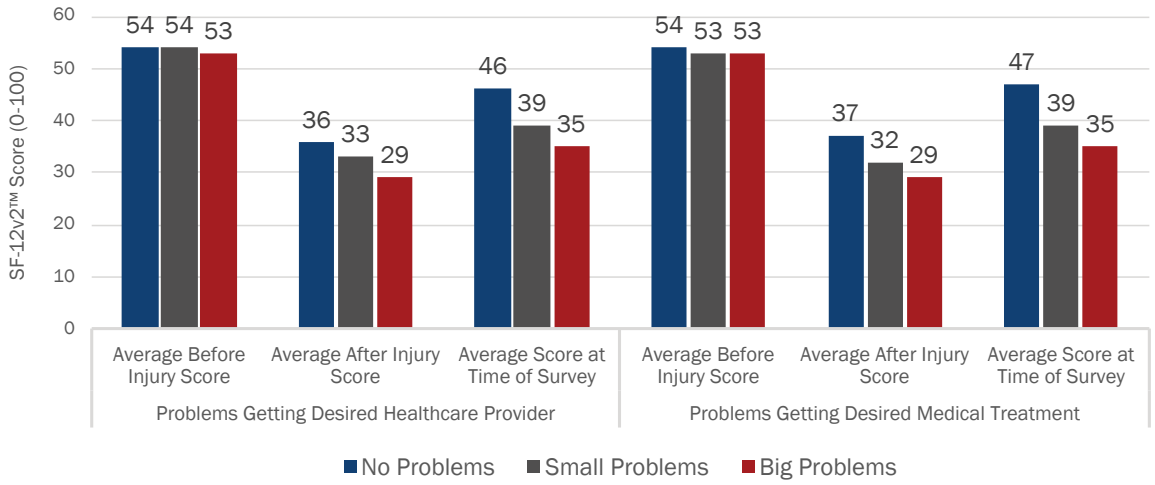
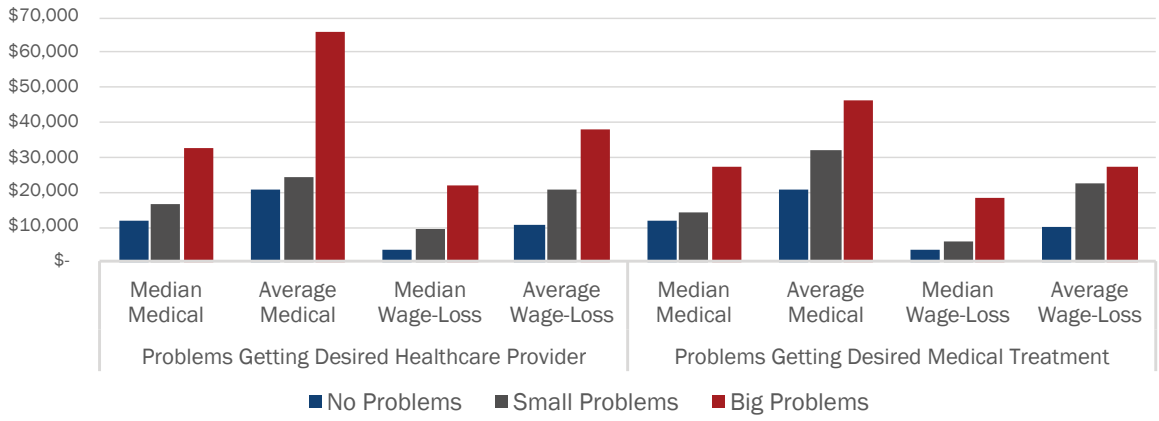


Figure 6

Access to Care Problems by Claim Costs



**Rounded to the nearest 100th*

Respondents who reported problems getting either their desired healthcare provider or their desired medical treatment or services also stood out as having the highest claim costs, the greatest perceived injury severity, and the least perceived recovery (Figure 5 and Figure 6).

Workers with **fractures** and **cumulative disorders & ODs** had the highest proportion of respondents who reported no access to care problems, and workers with **sprains or strains of the neck or back** and lacerations or contusions had the highest proportion of respondents who did report access to care problems.

- 84% of workers with fractures reported no problems getting their desired healthcare provider and 84% reported no problems getting their desired medical treatment.
- 92% of workers with cumulative disorders & ODs reported no problems getting their desired healthcare provider and 83% reported no problems getting their desired medical treatment.
- 31% of workers with sprains or strains of the neck or back reported problems getting their desired healthcare provider and 44% reported problems getting their desired medical treatment.
- 42% of workers with lacerations or contusions reported problems getting their desired healthcare provider and 44% reported problems getting their desired medical treatment.

Predictors of Problems Getting Desired Healthcare Provider

A logistic regression model was used to analyze factors associated with workers who reported problems getting their desired primary healthcare provider. The model estimates the odds of a worker reporting they experienced either small problems or big problems getting their desired healthcare provider after their injury, versus a worker reporting they experienced no problems, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 7

Predictors Associated with Problems Getting Desired Healthcare Provider

Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting problems getting their desired healthcare provider. Compared to workers who were not concerned, the odds of reporting problems getting their desired healthcare provider for workers who were somewhat concerned increased by a factor of 2.6 and the odds for workers who were very concerned increased by a factor of 6.1. Concern for being fired or laid off after injury was a very strong predictor of reporting problems accessing desired healthcare provider.
Other Characteristics	
Claim status	Workers whose claim was still open at the time of survey had increased odds of reporting problems getting their desired healthcare provider. For workers whose claim was open at the time of survey, the odds of reporting problems getting their desired healthcare provider increased by a factor of 3. Claim status was a moderate predictor of reporting problems accessing desired healthcare provider.
Healthcare provider reassigned	Workers who reported their insurer reassigned their primary healthcare provider at any point after their injury had increased odds of reporting problems getting their desired healthcare provider. For workers who reported their insurer did reassign their primary healthcare provider, the odds of reporting problems getting their desired healthcare provider increased by a factor of 10. Reassignment of a worker's primary healthcare provider by the insurer was a very strong predictor of reporting problems accessing desired healthcare provider.

Figure 7

Problems Getting Desired Healthcare Provider by Concern for Being Fired or Laid Off

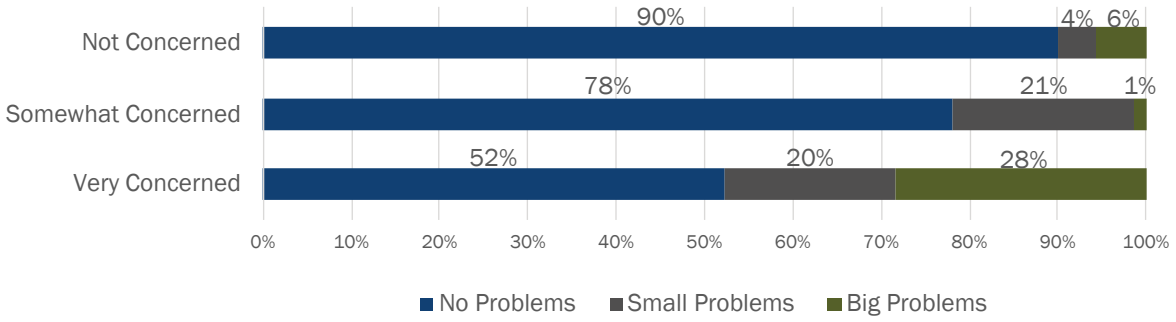
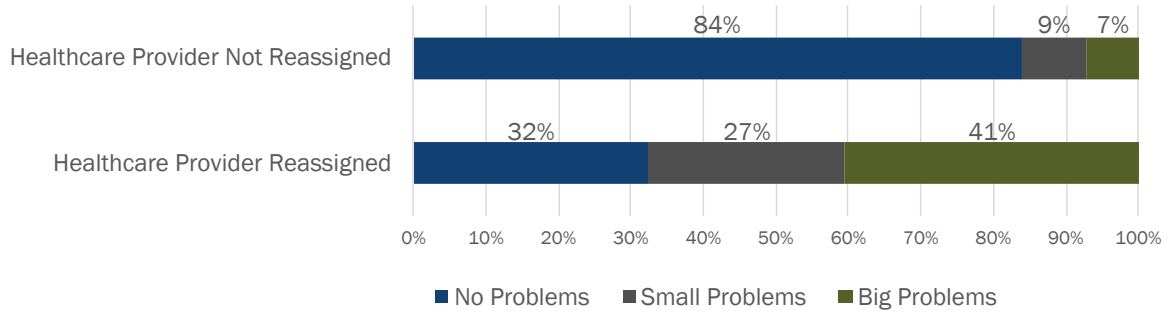


Figure 8

Problems Getting Desired Healthcare Provider by Whether Primary Healthcare Provider was Reassigned



Predictors of Problems Getting Desired Medical Treatment or Services

A logistic regression model was used to analyze factors associated with workers' reporting problems getting their desired medical treatment or services. The model estimates the odds of a worker reporting they experienced either small problems or big problems getting their medical treatment or services after their injury, versus a worker reporting they experienced no problems, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 8

Predictors Associated with Problems Getting Desired Medical Treatment or Services

Worker Characteristics	
Marital status	Workers who were married at the time of their injury had decreased odds of reporting problems getting their desired medical treatment or services. For workers who were not married at the time of survey, the odds of reporting problems getting their desired medical treatment or services increased by a factor of 2. Marital status was a moderate predictor of reporting problems accessing desired medical treatment or services.
Previous injury	Workers who reported a previous injury that may have agitated or contributed to their work injury had increased odds of reporting problems getting their desired medical treatment or services. For workers who reported a previous injury, the odds of reporting problems getting their desired medical treatment or services increased by a factor of 3. A previous injury was a moderate predictor of reporting problems accessing desired medical treatment or services.
Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting problems getting their desired medical treatment or services. Compared to workers who were not concerned, the odds of reporting problems getting their desired medical treatment or services for workers that were very concerned increased by a factor of 5.2. Concern for being fired or laid off after injury was a very strong predictor of reporting problems accessing desired medical treatment or services.

Table 8

Predictors Associated with Problems Getting Desired Medical Treatment or Services

Other Characteristics	
Healthcare provider reassigned	Workers who reported their insurer reassigned their primary healthcare provider at any point after their injury had increased odds of reporting problems getting their desired medical treatment or services. For workers who reported their insurer did reassign their primary healthcare provider, the odds of reporting problems getting their desired medical treatment or services increased by a factor of 3.2. Reassignment of a worker's primary healthcare provider by the insurer was a moderate predictor of reporting problems accessing desired medical treatment or services.

Figure 9

Problems Getting Desired Medical Treatment of Services by Concern for Being Fired or Laid Off

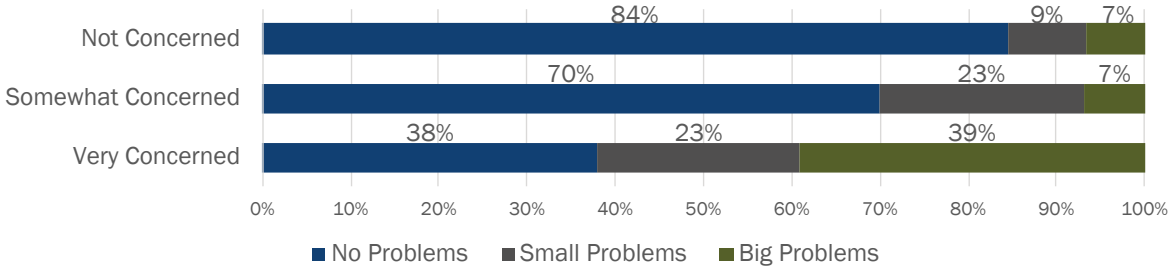
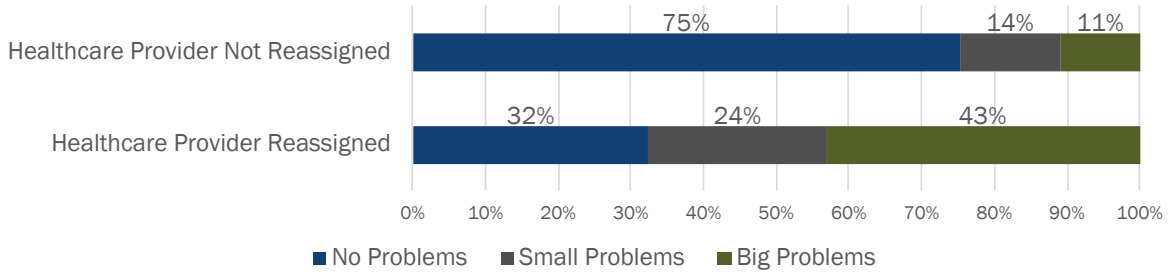


Figure 10

Problems Getting Desired Medical Treatment of Services by Whether Primary Healthcare Provider was Reassigned



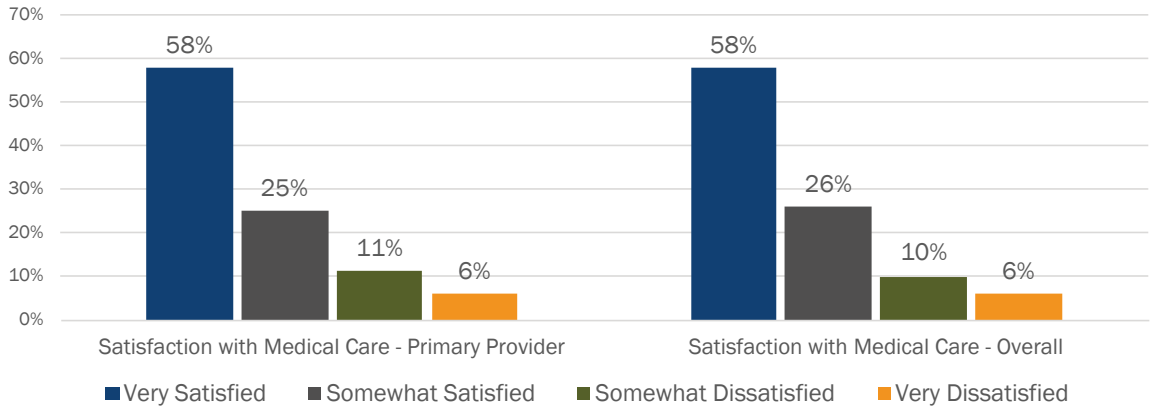
Although **only 10% of workers reported that their treating provider had been reassigned by their insurer**, those workers odds of reporting problems with access to care greatly increased, including **10x increased odds of reporting problems getting their desired healthcare provider and 3.2x increased odds of reporting problems getting their desired medical treatment of services.**

Satisfaction with Care

Satisfaction with medical care is an outcome of interest for which we currently have no adequate way of measuring within the administrative database. Workers were asked about their satisfaction with the medical care they received from their *primary healthcare provider* and their satisfaction with the medical care they received *overall*. The distribution of workers' satisfaction with their medical care track closely together. While 83% of respondents were either very satisfied or somewhat satisfied with the medical care they received from their primary healthcare provider, 17% of respondents were either somewhat or very dissatisfied. Similarly, 84% of respondents were satisfied and 16% were dissatisfied with the medical care they received overall. Injured worker responses in states surveyed by WCRI reported similar levels of satisfaction with their medical care.

Figure 11

Respondents' Satisfaction with Medical Care



Similar to access to care, respondents who reported they were either somewhat or very dissatisfied with their medical care had greater perceived injury severity, lower perceived recovery, and, in general, higher claim costs (Figure 12 and Figure 13).

Workers with **fractures** had the highest proportion of satisfaction with 91% or respondents reporting they were either somewhat or very satisfied with the medical care they received from their healthcare provider and with the medical care they received overall. Workers with **lacerations or contusions** and workers with inflammations were the least satisfied with the medical care they received from their healthcare provider (both 25%) and workers with **cumulative disorders & ODs** and sprains or **strains of the neck or back** were the least satisfied with the medical care they received overall (25% and 23%, respectively).

Figure 12

Satisfaction with Medical Care by Average SF-12v2™ Scores

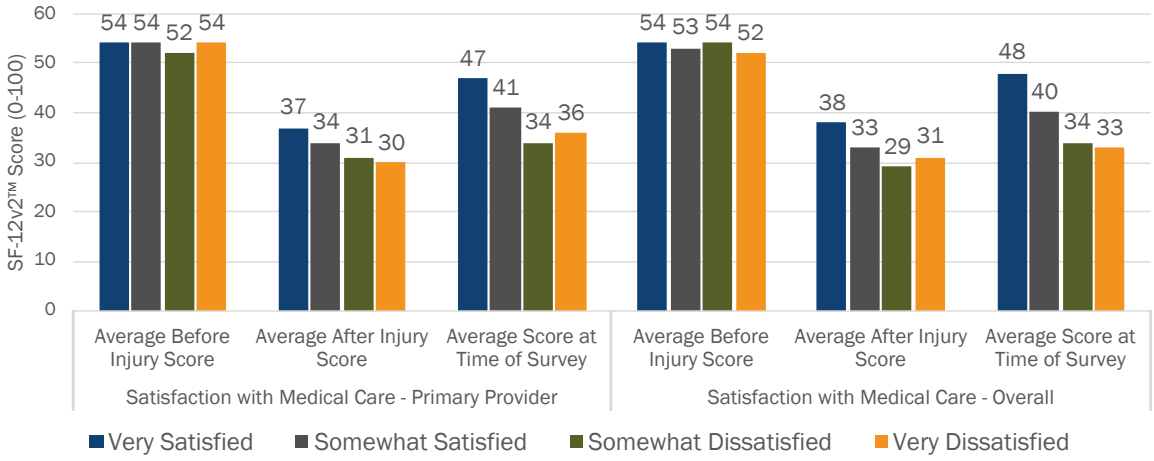
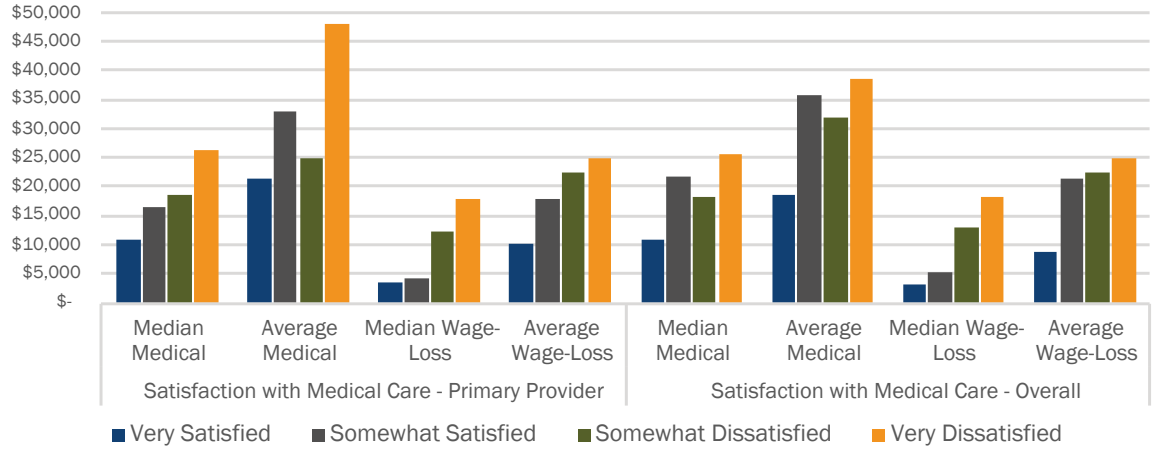


Figure 13

Satisfaction with Medical Care by Claim Costs



**Rounded to the nearest 100th*

Predictors of Satisfaction with Medical Care Received from Primary Healthcare Provider

A logistic regression model was used to analyze factors associated with workers' satisfaction with the medical care they received from their primary healthcare provider. The model estimates the odds of a worker reporting they were either somewhat dissatisfied or very dissatisfied with the medical care they received from their primary healthcare provider, versus a worker reporting they were either somewhat satisfied or very satisfied, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 9

Predictors Associated with Satisfaction with Medical Care Received from Primary Healthcare Provider

Worker Characteristics	
Marital status	Workers who were married at the time of their injury had decreased odds of reporting they were dissatisfied with the medical care they received from their primary healthcare provider. For workers who were not married, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received from their healthcare provider increased by a factor of 4.9. Marital status was a very strong predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.
Preinjury wage	Workers with higher preinjury wages had decreased odds of reporting they were dissatisfied with the medical care they received from their primary healthcare provider. The average preinjury weekly wage for workers who reported they were either somewhat or very satisfied with the medical care they received from their healthcare provider was $720, and the average preinjury weekly wage for workers who reported they were either somewhat or very dissatisfied was $640. Preinjury wage was a moderate predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.
Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting they were dissatisfied with the medical care they received from their primary healthcare provider. Compared to workers who were not concerned, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received from their healthcare provider for workers who were very concerned increased by a factor of 10. Concern for being fired or laid off after injury was a very strong predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.
Other Characteristics	
Claim status	Workers whose claim was still open at the time of survey had increased odds of reporting they were dissatisfied with the medical care they received from their primary healthcare provider. For workers whose claim was open at the time of survey, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received from their healthcare provider increased by a factor of 2.9. Claim status was a moderate predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.

Table 9

Predictors Associated with Satisfaction with Medical Care Received from Primary Healthcare Provider

Provider discussed work plan/suggested accommodations	Workers who reported their healthcare provider discussed a work plan with them or suggested workplace accommodations, such as fewer hours, modified duty, or additional breaks, had decreased odds of reporting they were dissatisfied with the medical care they received from their primary healthcare provider. For workers who reported their healthcare provider did not discuss a work plan with them or suggest accommodations, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received from their primary healthcare provider increased by a factor of 2.9. Whether a provider discussed a work plan or offered accommodations was a strong predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.
Healthcare provider reassigned	Workers who reported their insurer reassigned their primary healthcare provider at any point after their injury had increased odds of reporting they were dissatisfied with the medical care they received from their healthcare provider. For workers who reported their insurer did reassign their primary healthcare provider, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received from their primary healthcare provider increased by a factor of 4.8. Reassignment of a worker's primary healthcare provider by the insurer was a strong predictor of workers' satisfaction with the medical care they received from their primary healthcare provider.

Figure 14

Satisfaction with Medical Care Primary Healthcare Provider by Marital Status

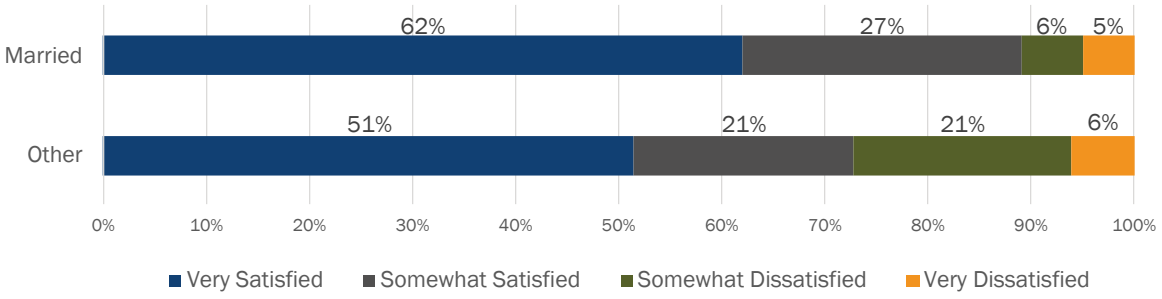


Figure 15

Satisfaction with Medical Care Received from Primary Healthcare Provider by Concern for Being Fired or Laid Off

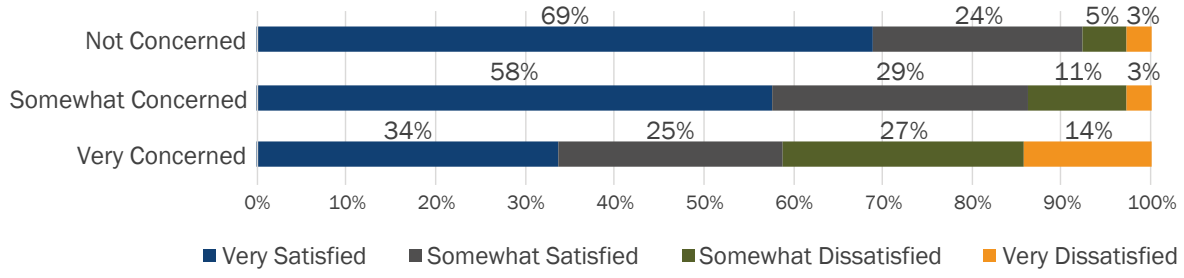


Figure 16

Satisfaction with Medical Care Received from Primary Healthcare Provider by Whether Provider Discussed a Work Plan or Suggested Accommodations

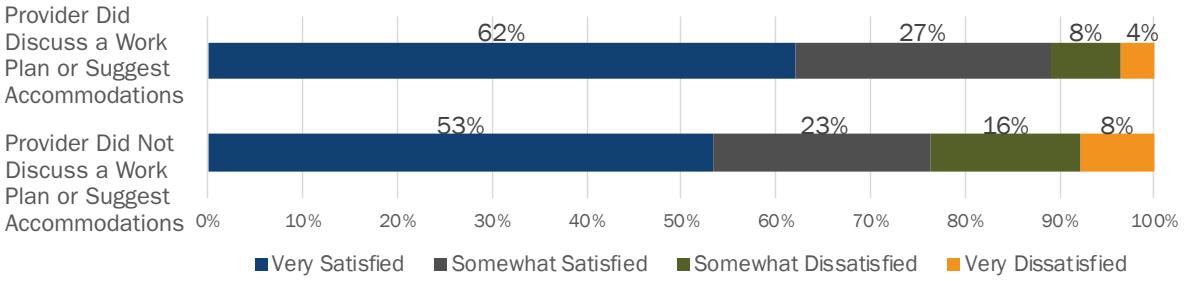
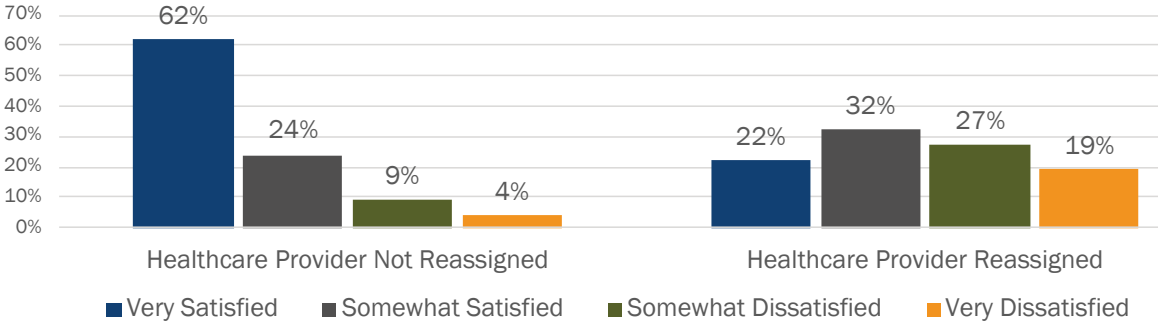


Figure 17

Satisfaction with Medical Care Received from Primary Healthcare Provider by Whether Primary Healthcare Provider was Reassigned



Predictors of Satisfaction with Medical Care Received Overall

A logistic regression model was used to analyze factors associated with workers' satisfaction with the medical care they received overall. The model estimates the odds of a worker reporting they were either somewhat dissatisfied or very dissatisfied with the medical care they received overall, versus a worker reporting they were either very satisfied or somewhat satisfied, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 10

Predictors Associated with Satisfaction with Medical Care Received Overall

Worker Characteristics	
Marital status	Workers who were married at the time of their injury had decreased odds of reporting they were dissatisfied with the medical care they received overall. For workers who were not married, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received overall increased by a factor of 2.7. Marital status was a moderate predictor of workers' satisfaction with the medical care they received overall.
Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting they were dissatisfied with the medical care they received overall. Compared to workers who were not concerned, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received overall for workers who were very concerned increased by a factor of 17.3. Concern for being fired or laid off after injury was a very strong predictor of workers' satisfaction with the medical care they received overall.
Other Characteristics	
Provider discussed work plan/suggested accommodations	Workers who reported their healthcare provider discussed a work plan with them or suggested workplace accommodations, such as fewer hours, modified duty, or additional breaks, had decreased odds of reporting they were dissatisfied with the medical care they received overall. For workers who reported their healthcare provider did not discuss a work plan or suggest accommodations, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received overall increased by a factor of 2.8. Whether a provider discussed a work plan or offered accommodations was a moderate predictor of workers' satisfaction with the medical care they received overall.
Healthcare provider reassigned	Workers who reported their insurer reassigned their primary healthcare provider at any point after their injury had increased odds of reporting they were dissatisfied with the medical care they received overall. For workers who reported their insurer did reassign their primary healthcare provider, the odds of reporting they were either somewhat or very dissatisfied with the medical care they received overall increased by a factor of 3.1. Reassignment of a worker's primary healthcare provider by the insurer was a moderate predictor of workers' satisfaction with the medical care they received overall.

Figure 18

Satisfaction with Medical Care Received Overall by Marital Status

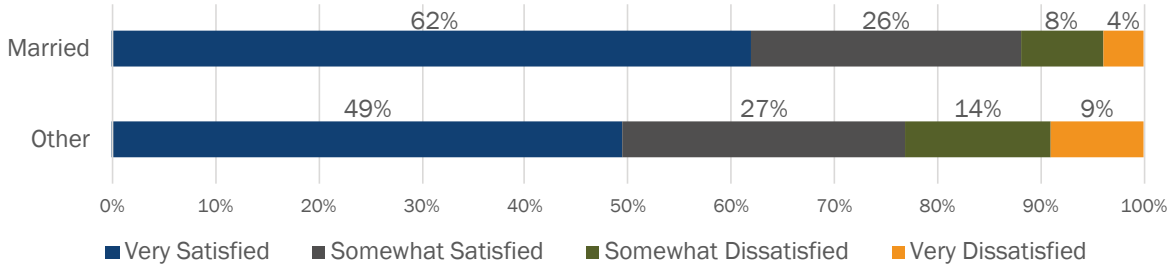


Figure 19

Satisfaction with Medical Care Received Overall by Concern for Being Fired or Laid Off

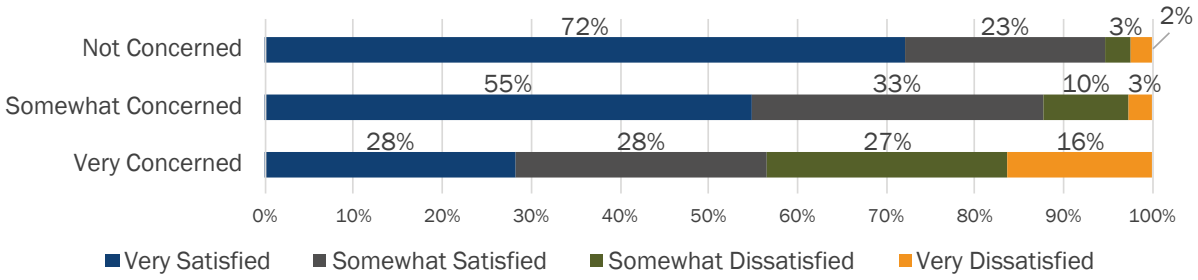


Figure 20

Satisfaction with Medical Care Received Overall by Whether Provider Discussed a Work Plan or Suggested Accommodations

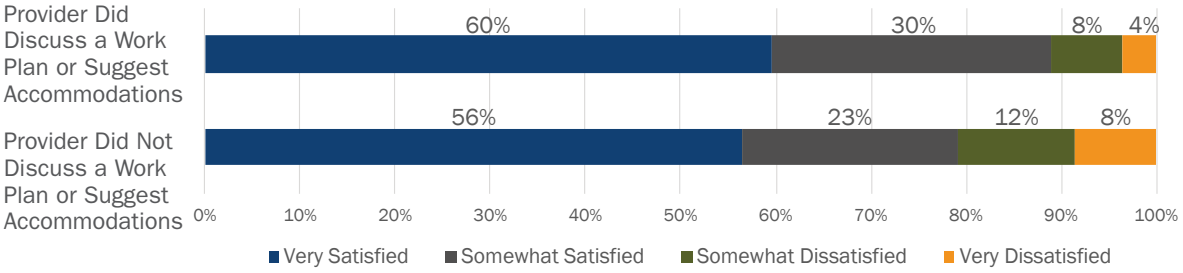
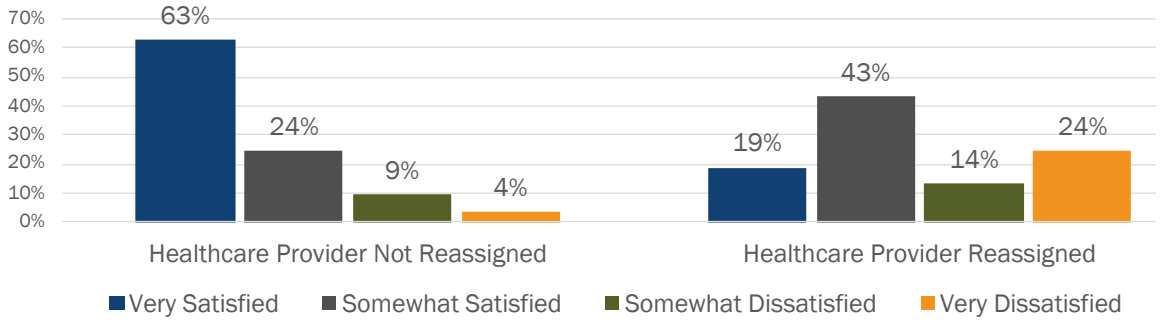


Figure 21

Satisfaction with Medical Care Received Overall by Whether Primary Healthcare Provider was Reassigned



Although **only 10% of workers reported their treating provider was reassigned by their insurer,** those workers odds of reporting lower levels of satisfaction with their medical care increased, including **4.8x increased odds of reporting dissatisfaction with the care they received from their healthcare provider** and **3.1x increased odds of reporting dissatisfaction with their overall medical care.**

Financial Impact

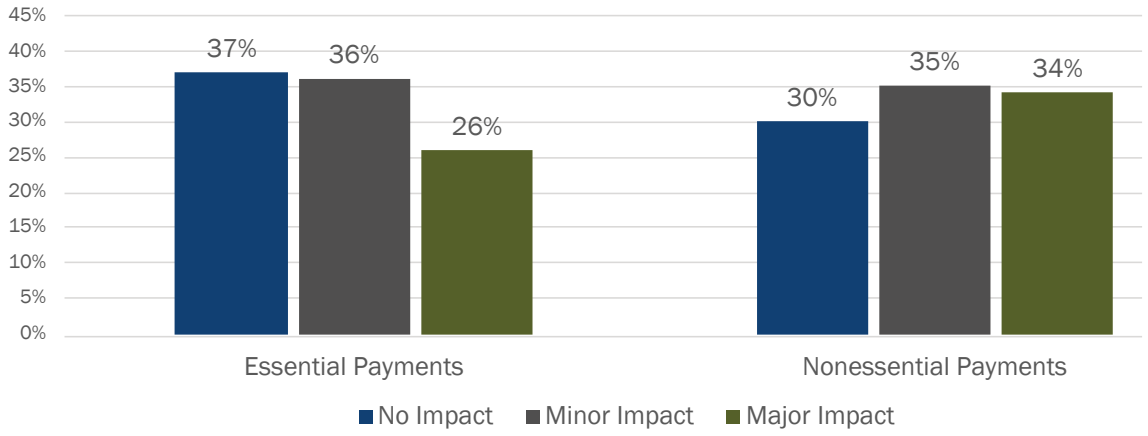
The financial impact of a work-related injury is generally more easily understood from the employer's perspective through changes in premiums or experience mods, but a work-related injury has just as much potential to be financially devastating for a worker and their family. There are three outcomes of interest related to workers' perspective on the financial impact of an injury. First, we were interested in learning about how workers' spending ability was impacted after their injury. Then, for workers who were able to achieve substantial return to work (see *Return to Worker & Disability* section), we wanted to know how long it took workers to recover financially and whether workers experienced a loss in earnings due to their injury since their return to work.

Spending Ability

We use spending ability as a measure of workers' perceived benefit adequacy. Montana's workers' compensation wage-loss benefits require insurers to pay two-thirds of a worker's average weekly wage up to a maximum of the state's average weekly wage, but it's unknown whether this is sufficient for most workers to get by on during their recovery. Workers were asked whether their injury impacted their ability to afford both essential and *nonessential* payments. Predictably, a large proportion of workers reported a major impact in their ability to afford nonessentials, such as dining out, travel, or home improvements, as budgets become tighter while away from work. However, a quarter of workers reported a major impact in their ability to afford essential payments, including mortgage or rent payments, utility bills, and groceries, as a result of their injury.

Figure 22

Impact on Ability to Afford Essential and Nonessential Payments



Predictors of Major Impact in Ability to Afford Essential Payments

A logistic regression model was used to analyze factors associated with workers' ability to afford essential payments after their injury. The model estimates the odds of a worker reporting their injury resulted in a major impact in their ability to afford essential payments, versus a worker reporting no impact or a minor impact, for each predictor with respect to all other variables within the model. For this outcome, we also control for reported *disability duration*, as defined in Table 2. The association is described as very strong, strong, or moderate.[v]

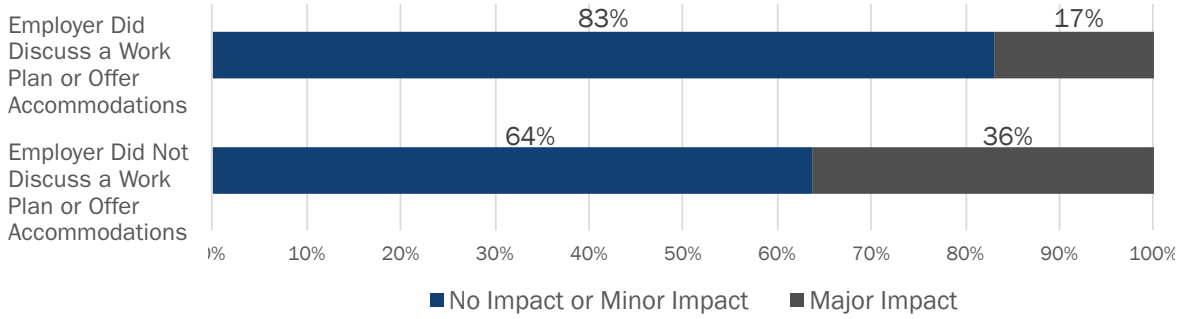
Table 11

Predictors Associated with Major Impact in Ability to Afford Essential Payments

Worker Characteristics	
Age	Younger workers had increased odds of reporting a major impact in their ability to afford essential payments due to their injury. Compared to workers over 60, the odds of workers reporting a major impact in their ability to afford essential payments increased by a factor of 3.2 for workers 55 to 60, increased by a factor of 3.6 for workers 40 to 54, increased by a factor of 6.3 for workers 30 to 39, and increased by a factor of 15.5 for workers under 30. Age was a moderate predictor of reporting a major impact in ability to afford essential payments.
Health insurance	Workers who reported having health insurance at the time of their injury had decreased odds of reporting a major impact in their ability to afford essential payments due to their injury. For workers who reported not having health insurance, the odds of reporting a major impact in their ability to afford essential payments increased by a factor of 3.4. Health insurance was a moderate predictor of reporting a major impact in ability to afford essential payments.
Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting a major impact in their ability to afford essential payments after their injury. Compared to workers who were not concerned, the odds of reporting a major impact in their ability to afford essential payments for workers who were very concerned increased by a factor of 5.3. Concern for being fired or laid off after injury was a moderate predictor of reporting a major impact in ability to afford essential payments.
Employer discussed work plan/ offered accommodations	Workers who reported their employer discussed a work plan with them or offered accommodations after their injury, such as fewer hours, modified duty, or additional breaks, had decreased odds of reporting a major impact in their ability to afford essential payments after their injury. For workers who reported their employer did not discuss a work plan or offer accommodations after their injury, the odds of reporting a major impact on their ability to afford essential payments increased by a factor of 3. Whether an employer discussed a work plan or offered accommodations was a moderate predictor of reporting a major impact in ability to afford essential payments.
Other Characteristics	
Disability duration	Workers who reported longer disability duration or no substantial return to work had increased odds of reporting a major impact in their ability to afford essential payments after their injury. For workers who reported they were out of work for greater than 180 days before achieving substantial return to work or who did not achieve substantial return to work, the odds of reporting a major impact in their ability to afford essential payments after their injury increased by a factor of 7.1. Disability duration was a very strong predictor of reporting a major impact in ability to afford essential payments.

Figure 23

Impact in Ability to Afford Essential Payments by Whether Employer Discussed a Work Plan or Offered Accommodations After Injury



Workers who did not achieve substantial return to work within 180 days or did not achieve substantial return to work at all had **7x increased odds** of reporting a major impact in their ability to afford essential payments due to their injury.

Figure 24

Impact in Ability to Afford Essential Payments by Disability Duration

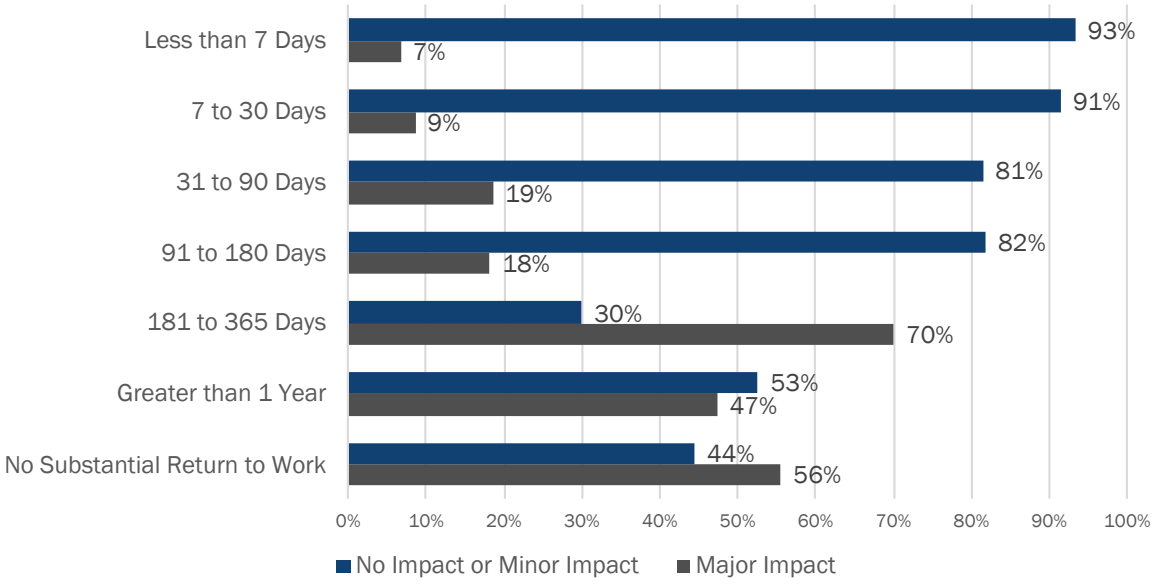


Figure 25

Impact in Ability to Afford Essential Payments by Whether Worker Reported Having Health Insurance Prior to Injury

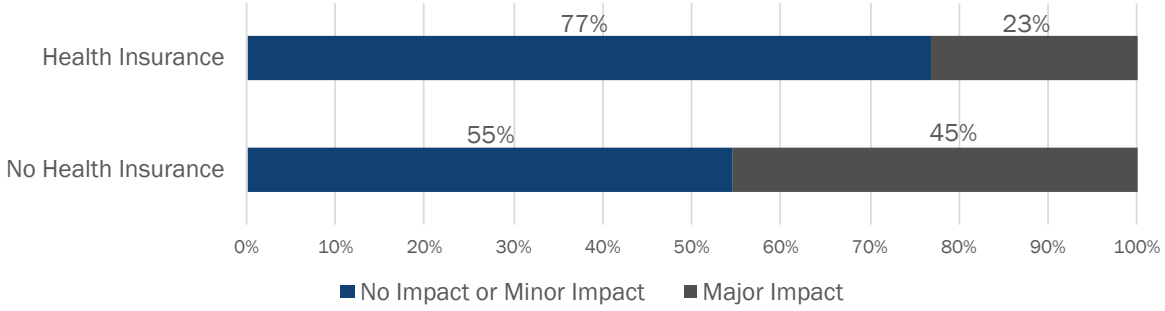
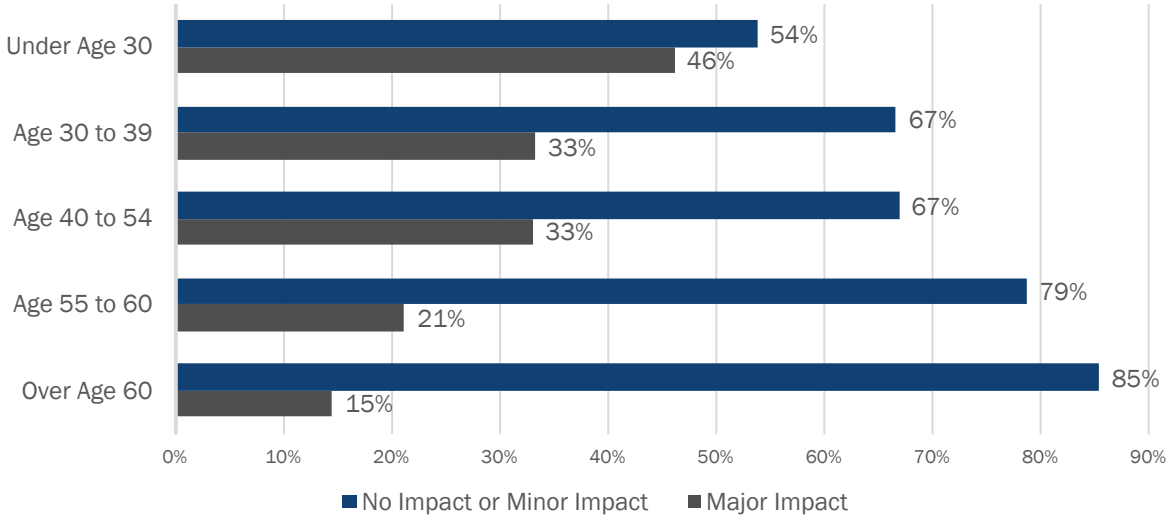


Figure 26

Impact in Ability to Afford Essential Payments by Age



Workers over 60 had the **lowest odds** of reporting a major impact in their ability to afford essential payments due to their injury.

Financial Recovery & Earnings Loss

Workers who achieved substantial return to work answered additional questions about the financial impact of their injury, including how long it took the worker to recover financially after returning to work to where the worker was financially before their injury (Figure 27) and whether the worker experienced a loss in earnings since returning to work (Figure 28). A quarter of workers reported financial recovery took greater than a year or they had not yet financially recovered at the time of the survey. A worker may experience a loss in earnings even after returning to work, for example, from a change in jobs or a change in employers; 25% of respondents reported a loss in earnings attributed to their work injury since returning to work.

Figure 27

Time to Financial Recovery After Substantial Return to Work

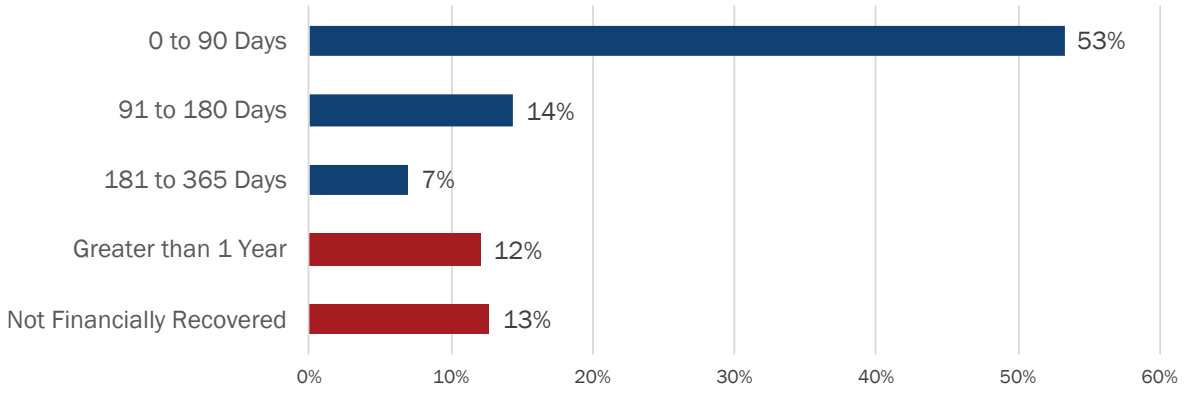
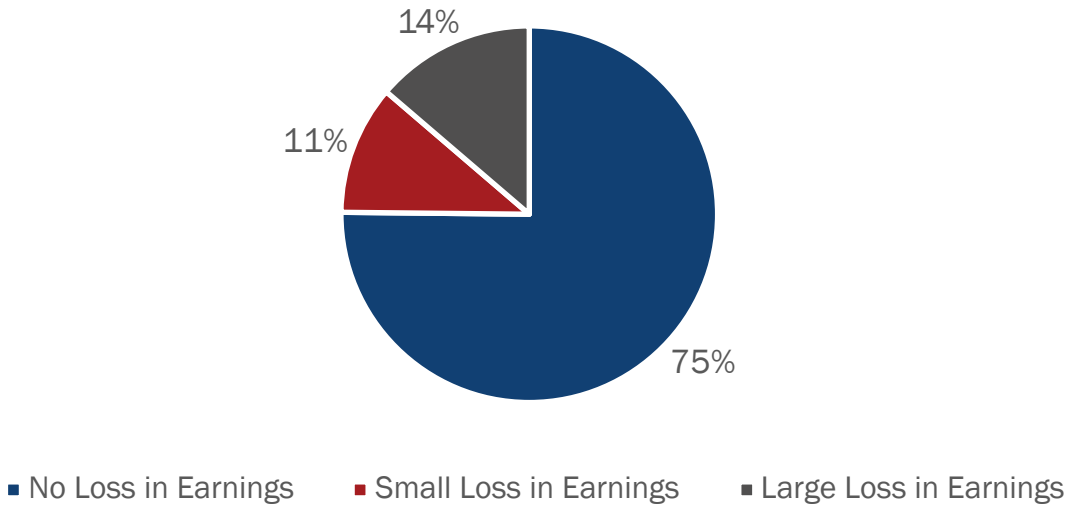


Figure 28

Loss in Earnings Since Substantial Return to Work



Predictors of a Loss in Earnings

A logistic regression model was used to analyze factors associated with workers who experienced a loss in earnings since achieving substantial returning to work as a result of their injury. The model estimates the odds of a worker reporting they experienced a small loss in earnings or a large loss in earnings as a result of their injury, versus a worker reporting no loss in earnings, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 12

Predictors Associated with a Loss in Earnings

Worker Characteristics	
Gender	Females had increased odds of reporting a loss in earnings due to their injury since achieving substantial return to work. For female workers, the odds of reporting a loss in earnings increased by a factor of 5 compared to males. Gender was a moderate predictor of a loss in earnings.
Employment Characteristics	
Concern for being fired or laid off	Workers who were very concerned with being fired or laid off after their injury had increased odds of reporting a loss in earnings due to their injury since achieving substantial return to work. Compared to workers who were not concerned, the odds of reporting a loss in earnings for workers who were very concerned increased by a factor of 7.2. Concern for being fired or laid off after injury was a strong predictor of a loss in earnings.
Employer discussed work plan/ offered accommodations	Workers who reported their employer discussed a work plan or offered accommodations after their injury, such as fewer hours, modified duty, or additional breaks, had decreased odds of reporting a loss in earnings since achieving substantial return to work due to their injury. For workers who reported their employer did not discuss a work plan or offer accommodations after their injury, the odds of reporting a loss in earnings increase by a factor of 5.9. Whether an employer discussed a work plan or offered accommodations was a strong predictor of a loss in earnings.
Injury Characteristics	
Perceived injury severity	Workers who perceived their injury to be more severe had increased odds of reporting a loss in earnings since achieving substantial return to work due to their injury. Compared to workers with perceived injury severity of under 15 points, the odds of reporting a loss in earnings increase by a factor of 4.9 for workers with perceived injury severity of 25 to 34 points, and the odds increase by a factor of 6.6 for workers with perceived injury of 35 points or greater. Perceived injury severity was a moderate predictor of a loss in earnings.
Other Characteristics	
Metropolitan	Workers who lived in metropolitan areas at the time of their injury had decreased odds of reporting a loss in earnings due to their injury since achieving substantial return to work. For workers who did not live in a metropolitan statistical area, the odds of a loss in earnings increase by a factor of 4.6. Whether a worker lived in a metropolitan area was a moderate predictor of a loss in earnings.

Figure 29

Loss in Earnings by Gender

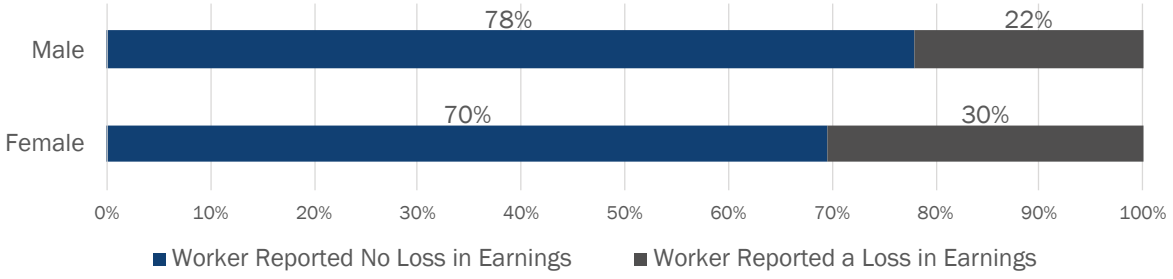


Figure 30

Loss in Earnings by Concern for Being Fired or Laid Off

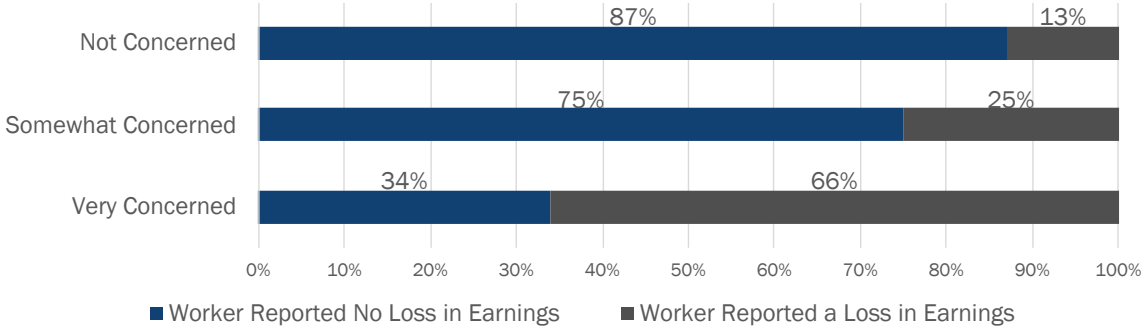


Figure 31

Loss in Earnings by Whether Employer Discussed a Work Plan or Offered Accommodations

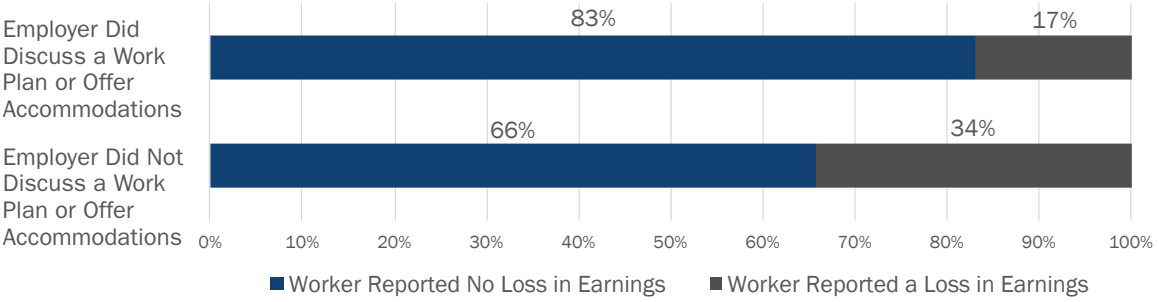
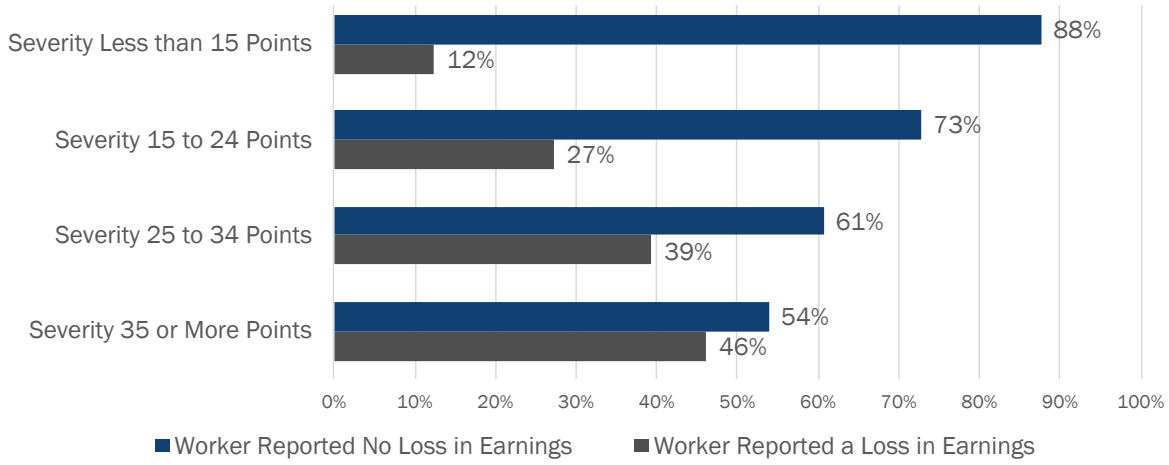


Figure 32

Loss in Earnings by Perceived Injury Severity



Workers with more severe injuries had increased odds of reporting a loss in earnings due to their injury. Relative to workers with perceived severity of under 15 points, the odds increased **4.9x** for workers with perceived severity of 25 to 34 points and **6.6x** for workers with perceived severity of 35 or more points.

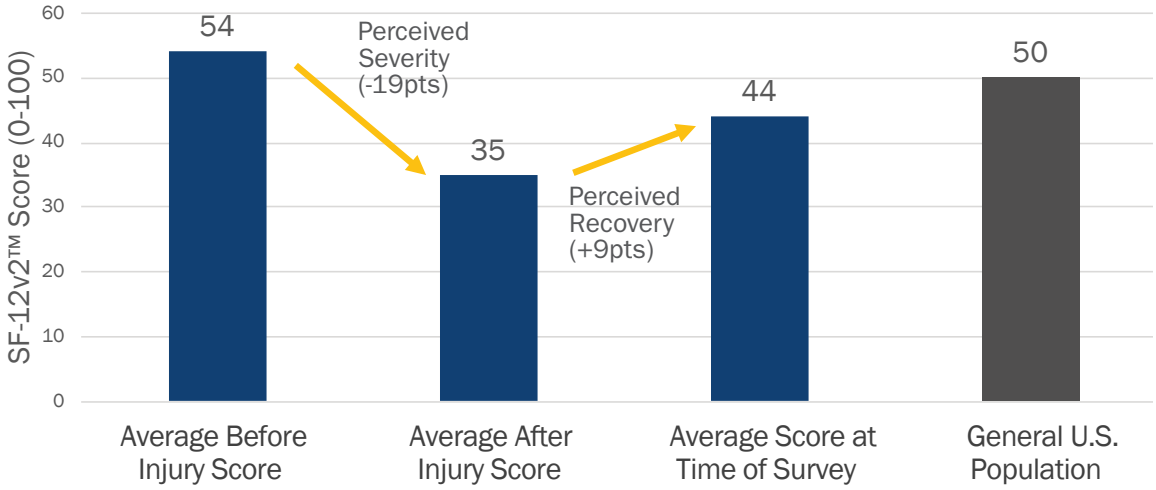
Recovery of Health

Recovery of health was measured utilizing the SF-12v2™ health survey tool. The SF-12v2™ survey is comprised of twelve questions about an individual's health and function that are combined to calculate a single score on a scale from 0 to 100 with higher scores indicating better health. Section 5 of the Montana Injured Worker Survey asked workers to answer the SF-12v2™ survey questions for three different points in time: part (a) asked workers to answer the SF-12v2™ survey questions thinking about their health before their injury, part (b) asked workers to respond about their health after their injury, and part (c) asked workers to respond about their health at the time of their survey. Accordingly, each respondent had three distinct scores. A *worker's perceived recovery of health* is measured as the difference between the worker's score at the time of survey and the worker's score after their injury. Similarly, the difference between a worker's score before injury and their score after their injury represents perceived *injury severity*, a predictor of interest.

Figure 33 illustrates respondents' average SF-12v2™ score before injury, their average score after injury, and their average score at the time of survey.[vi] The general U.S. population is included as a point of reference, but comparisons with norms may be compromised due to altering the recall period of the SF-12v2™ survey. However, as WCRI notes, it is expected that the average before injury score of respondents be above that of the general U.S. population because it is reasonable to expect a working population to be healthier compared to a general population. Although a similar pattern for workers in states interviewed by WCRI, exists, no meaningful conclusions can be drawn from comparing average scores, as the Montana Injured Worker survey diverged from WCRI in how SF-12v2™ survey questions were administered.

Figure 33

Average SF-12v2™ Health Scores



Injured workers in Montana experienced an average perceived injury severity of 19 points and an average perceived recovery of 9 points, indicating most injured workers did not return to their pre-injury level of health. This point is further demonstrated by the distribution of workers' perceived injury severity and recovery in Figure 34. Most workers' perceived injury severity and recovery was less than 15 points. However, while 10% of workers had a perceived injury severity score of 35 points or greater, only 1% of workers recovered as many points.

Figure 34

Distribution of Injury Severity and Recovery

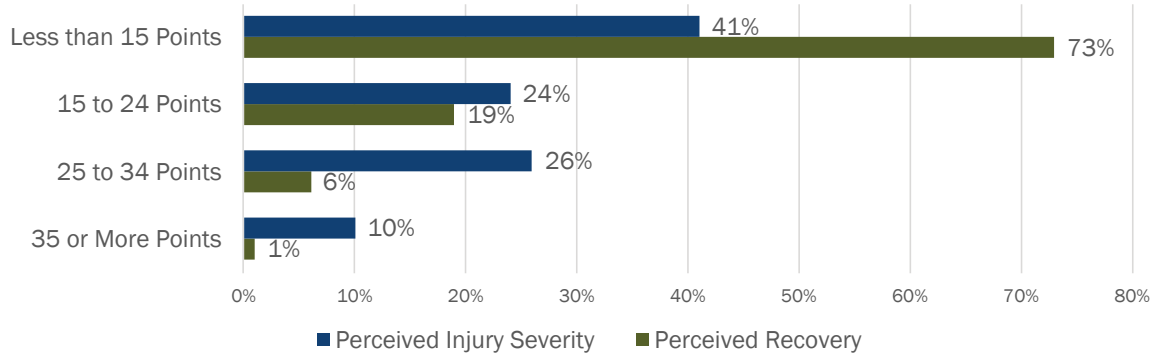
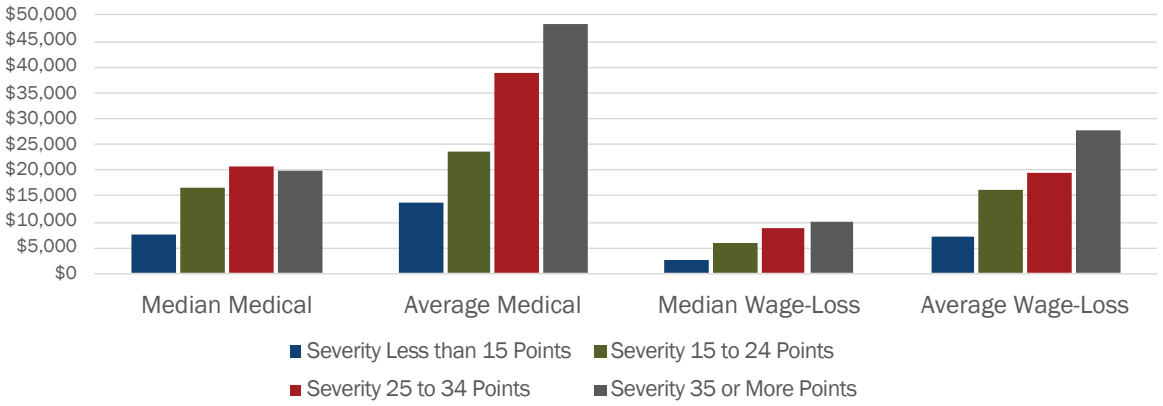


Figure 35 ccompares perceived injury severity to median and average claim costs, and, as expected, workers who perceived their injury as more severe generally had higher costs associated with their injury.

Figure 35

Perceived Injury Severity by Claim Costs



**Rounded to the nearest 100th*

Predictors of Recovery of Health

An ordinary least squares regression model was utilized to analyze factors associated with workers' recovery of health. The model estimates the change in recovery for a one-unit change or factor change for a given predictor, with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

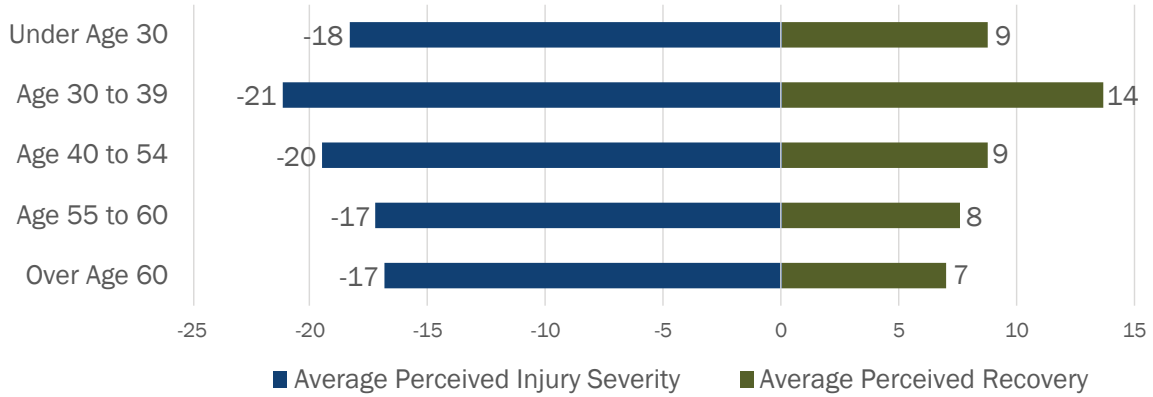
Table 13

Predictors Associated with Recovery of Health

Worker Characteristics	
Age	Younger workers had greater recovery than older workers. Compared to workers under the age of 30, workers age 55 to 60 had 3.9 less points of recovery and workers over the age of 60 had 4.5 less points of recovery. Age was a moderate predictor of recovery.
Educational attainment	Workers with less than a high school diploma experienced less recovery than workers in other educational attainment categories. Compared to workers with less than a high school diploma, recovery for workers with a high school diploma or equivalent increased by 6.1 points, recovery for workers with some college increased by 5.8 points, and recovery for college graduate or post-graduate workers increased by 6.2 points. Educational attainment was a moderate predictor of recovery.
Employment Characteristics	
Preinjury wage	Workers with higher preinjury weekly wages experienced greater recovery than workers with lower preinjury weekly wages. A $275 increase in preinjury weekly wage was associated with 1 additional point of recovery. Wage was a moderate predictor of recovery.
Concern for being fired or laid off	Workers who were very concerned for being fired or laid off after injury had 6.2 less points of recovery than workers who were not concerned. Concern for being fired or laid off after injury was a very strong predictor of recovery of health.
Injury Characteristics	
Injury type	Perceived recovery varied significantly by injury type. Sprains and strains of the back or neck experienced the least recovery after controlling for other predictors, followed by inflammations and other sprains and strains. Fractures and cumulative disorders had the greatest recovery, followed by lacerations or contusions and other injuries. Injury type was a strong predictor of recovery.
Perceived injury severity	Workers who perceived their injuries as more severe experienced greater recovery. Compared to workers with a perceived severity of less than 15 severity points, recovery for workers with a perceived severity of 15 to 24 points increased by 8.8 points, recovery for workers with a perceived severity of 25 to 34 points increased by 13.1 points, and recovery for workers with a perceived severity of 35 points or greater increased by 16 points. Perceived injury severity was a very strong predictor of recovery.
Other Characteristics	
Claim status	Workers whose claim was still open at the time of survey had 5 less points of recovery than workers whose claim was closed. Claim status was a very strong predictor or recovery.
Injury year	Workers with more mature claims had greater recovery than workers with less mature claims. A one-year increase in claim maturity was associated with an additional 1.5 points of recovery. Injury year was a moderate predictor of recovery.
Healthcare provider reassigned	Workers who reported their insurer reassigned their primary healthcare provider at any point after their injury had 5.7 less points of recovery than workers whose primary healthcare provider was not reassigned. Reassignment of a worker's primary healthcare provider by the insurer was a very strong predictor of recovery.

Figure 36

Average Injury Severity and Recovery of Health by Age



Workers at all levels of educational attainment had **similar average perceived injury severity, but perceived recovery increased at higher levels of education.**

Figure 37

Average Injury Severity and Recovery of Health by Educational Attainment

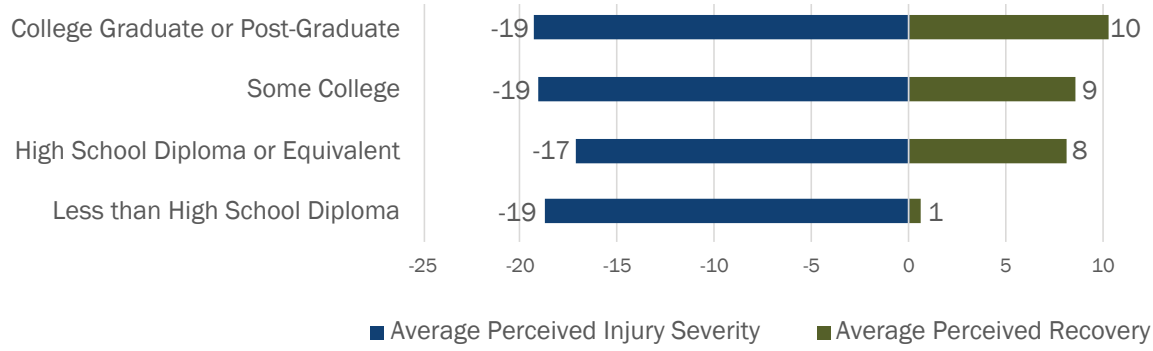
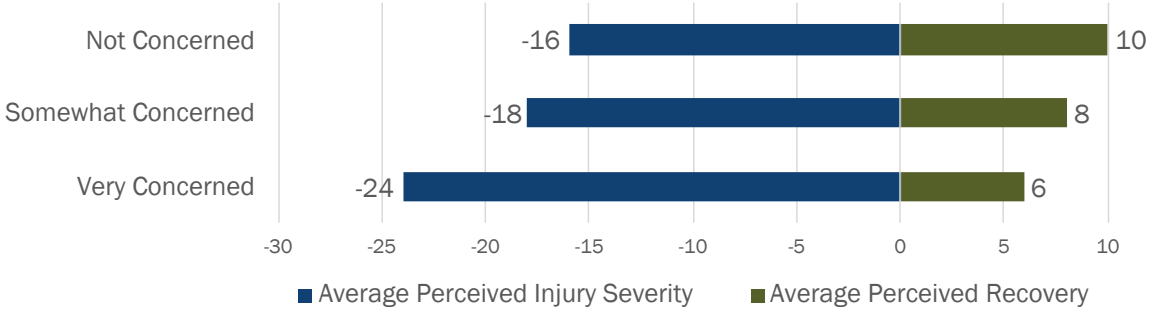


Figure 38

Average Injury Severity and Recovery of Health by Concern for Being Fired or Laid Off



Sprains and strains of the back or neck had the lowest recovery after controlling for other predictors. Although **cumulative disorders & ODs** had greater recovery than severity, potentially this can be attributed to symptoms beginning much earlier than the respondents date of diagnosis.[vii]

Figure 39

Average Injury Severity and Recovery of Health by Injury Type

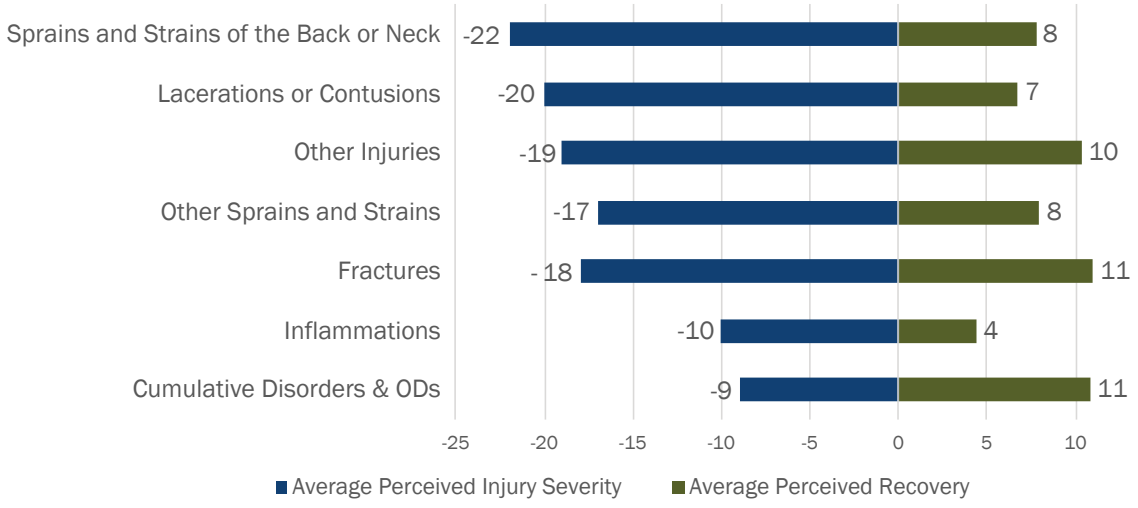


Figure 40

Average Injury Severity and Recovery of Health by Severity Groups

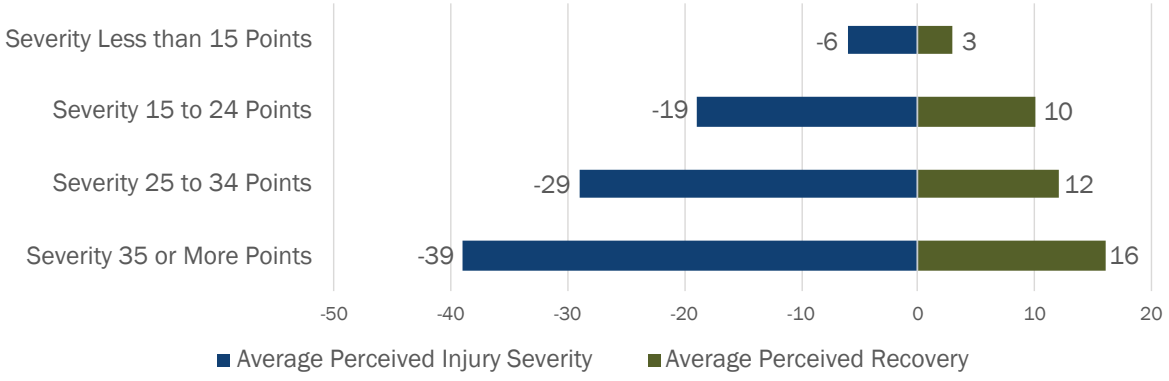
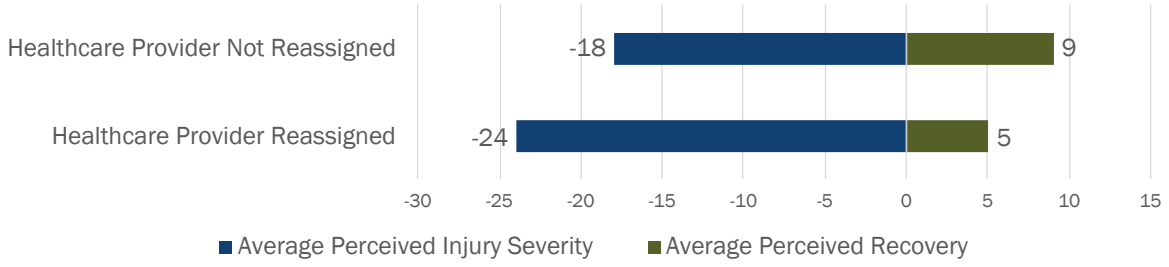


Figure 41

Average Injury Severity and Recovery of Health by Whether Primary Healthcare Provider was Reassigned



Return to Work & Disability Duration

Although timely return to work is one of the primary goals of the workers' compensation system, the available data lacks a reliable way to capture many key details related to understanding a worker's return to work status, including whether a worker has not returned to work as a result of their injury, at what point in time a worker returned to work, the length of time the worker was out of work, whether the worker was able to remain working, as well as other elements of return to work.

The return to work outcomes of interest include, *no substantial return to work primarily due to injury* and *not working at time of survey primarily due to their injury*. Substantial return to work is defined as being able to return to normal work hours for 30 consecutive days.[viii] The flowchart in Figure 42 demonstrates how we structured return to work questions to specify the outcome variables. From Figure 42, *no substantial return to work primarily due to injury* includes all respondents in box (11), and *not working at time of survey primarily due to their injury* includes all respondents in box (11) and box (7). Additionally, for workers who did achieve substantial return to work, disability duration was a third outcome of interest.

Figure 42

Flowchart of Return to Work Survey Questions

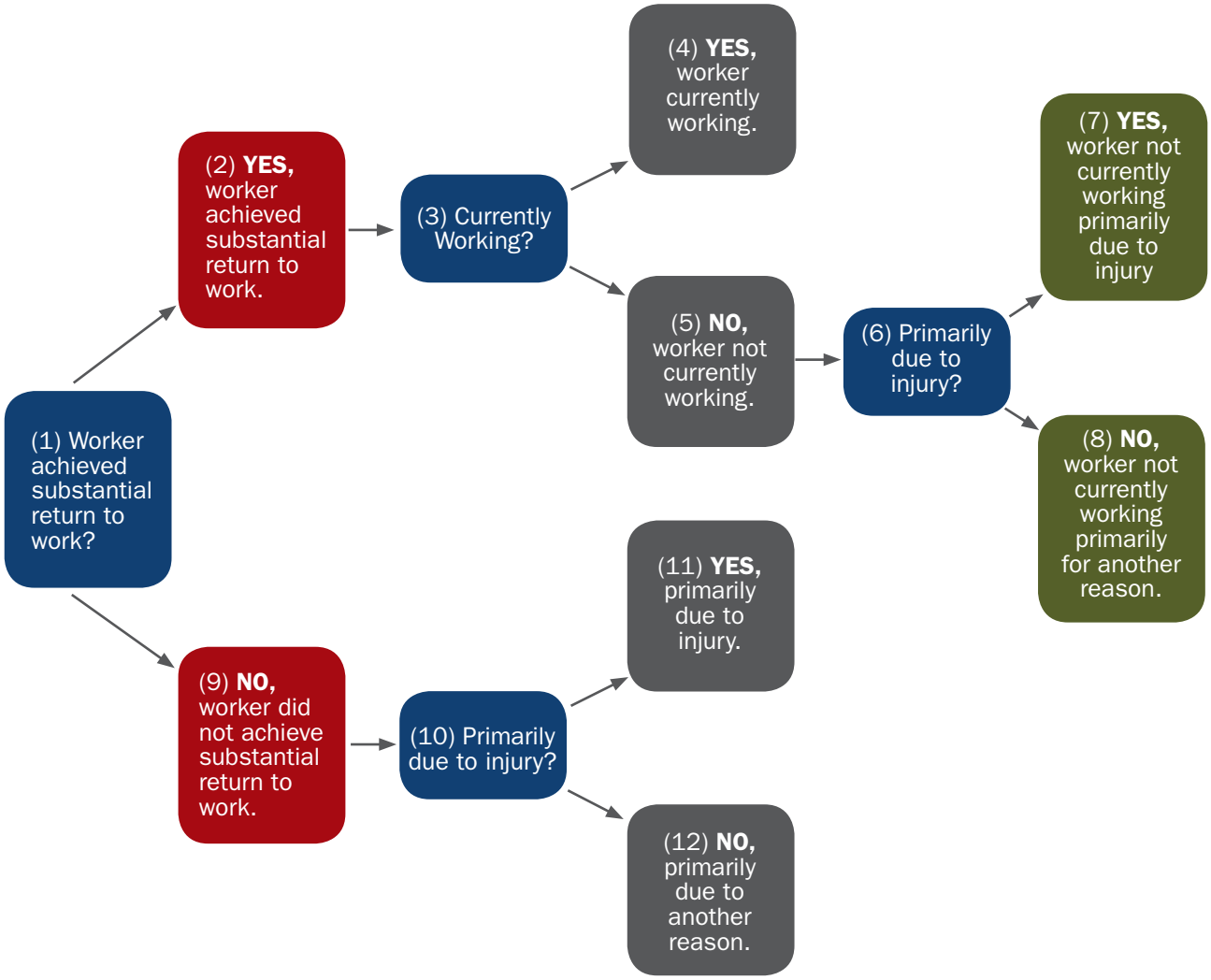


Figure 43

Percentage of Workers Who Did Not Achieve Substantial Return to Work and Percentage of Workers Who Were Not Working at Time of Survey Due to Injury

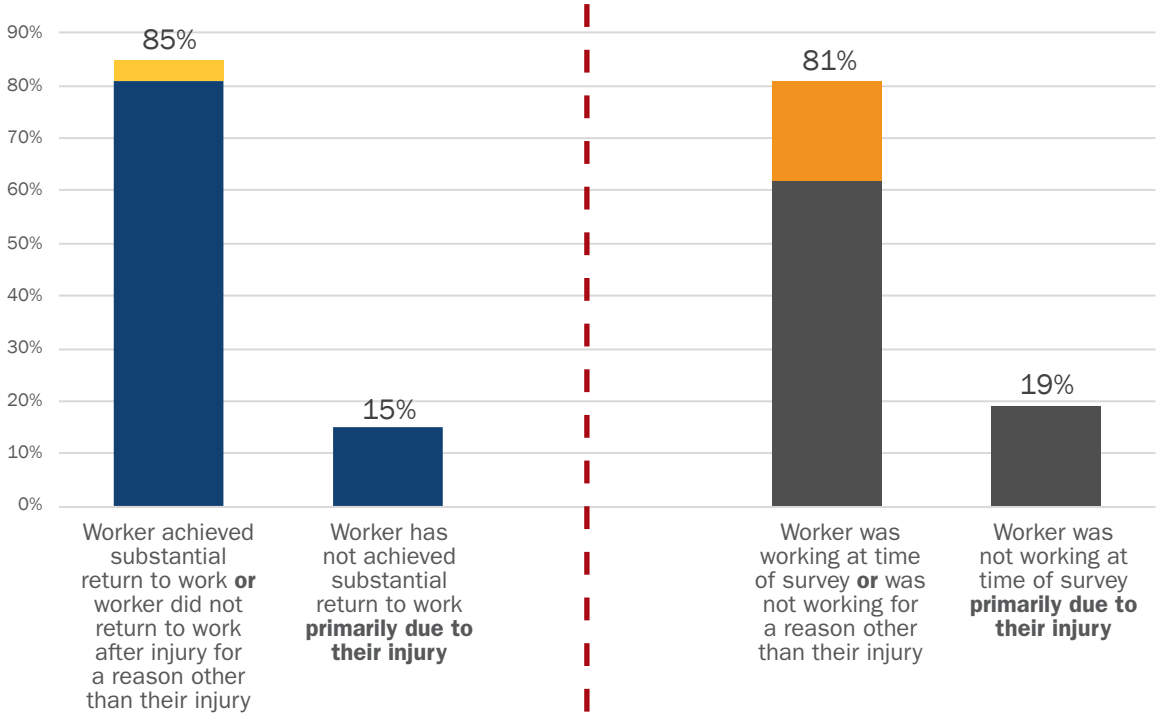


Figure 43 illustrates the results for both return to work outcomes.

The left side of Figure 43 shows that 85% of respondents were either able to achieve substantial return to work or they did not return to work after their injury but for a reason primarily other than their injury (4% of total respondents), while 15% of workers were unable to achieve substantial return to work primarily due to their work injury.

The right side shows that an additional 4% of workers were not working at the time of the survey due to their injury, evidence that initial return to work after an injury does not always guarantee the ability to remain at work. Additionally, the increase in the percent of workers not working for a reason other than their work injury, from 4% to 19%, can be attributed primarily due to workers who have since retired.

Figure 44

Average SF-12v2™ Health Scores by Return to Work

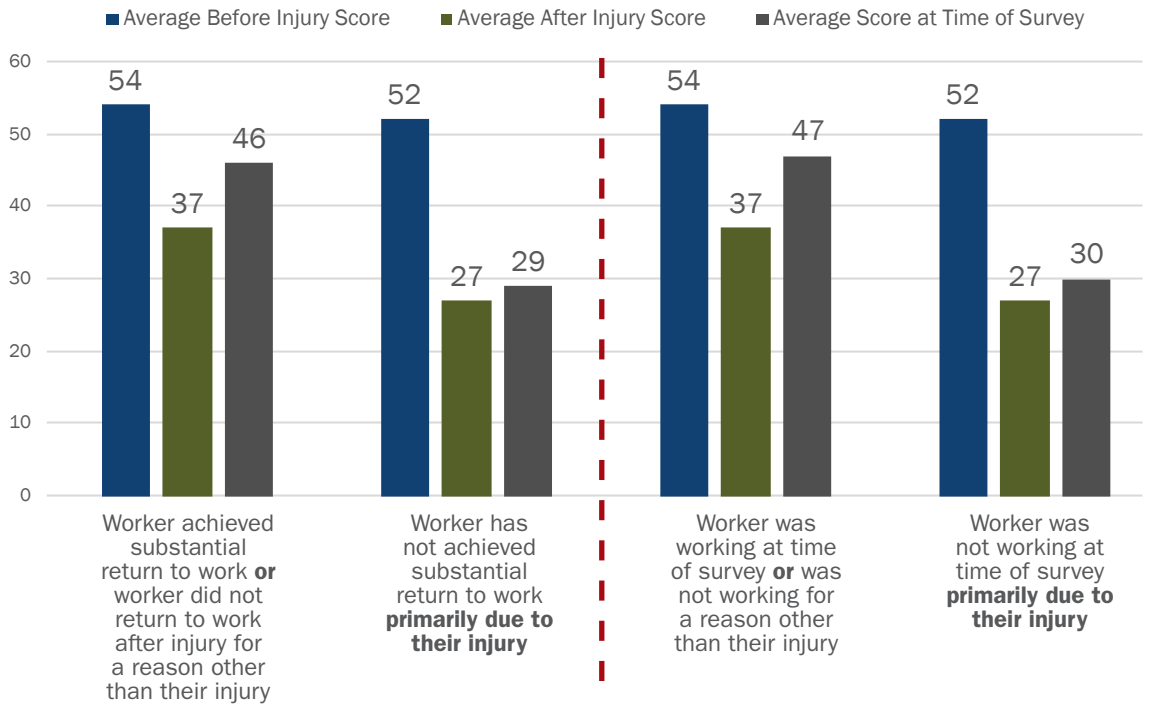


Figure 44 looks at workers' average recovery of health by whether the worker achieved substantial return to work and whether the worker was working at the time of their survey. In both cases where respondents were not working primarily due to their injury, there was a much greater drop between the average before injury score and the average after injury score indicating higher perceived severity and only a minimum increase between average after injury scores and average score at time of survey, suggesting minimal perceived recovery of health.

Workers with **sprains or strains of the neck or back** had the highest proportion of respondents who did not achieve substantial return to work primarily due to injury (27%) and the highest proportion of respondents not working at the time of survey primarily due to injury (31%).

Conversely, workers with **fractures** had the highest proportion of respondents who did achieve substantial return to work or who did not return to work after injury for a reason other than their injury (96%) and the highest proportion of respondents working at the time of survey or who were not working for a reason other than their injury (95%).

Figure 45 illustrates how the 85% of workers who did achieve substantial return to work responded about their disability duration before returning to work for at least 30 consecutive days; 38% reported disability duration of 30 days or less, and 73% reported disability duration of 90 days or less.

The Workers' Compensation Annual Report, published each fiscal year by the Department, estimates average paid disability duration using temporary total disability and temporary partial disability payments and the weekly benefit rate for each claim. Using the same methodology, the distribution of temporary disability duration was calculated for claims within the study period (Figure 46). Although Figure 46 may appear to suggest a greater proportion of workers were out of work *longer*, this is not necessarily true as Figure 46 uses the *total* number of weeks benefits were paid rather than consecutive weeks.[ix] Workers may therefore achieve substantial return to work and then later leave work again. Since one third of respondents reported additional absences after substantial return to work due to the same injury (Figure 54), additional payments are possible.

Figure 45

Distribution of Reported Disability Duration Before Substantial Return to Work

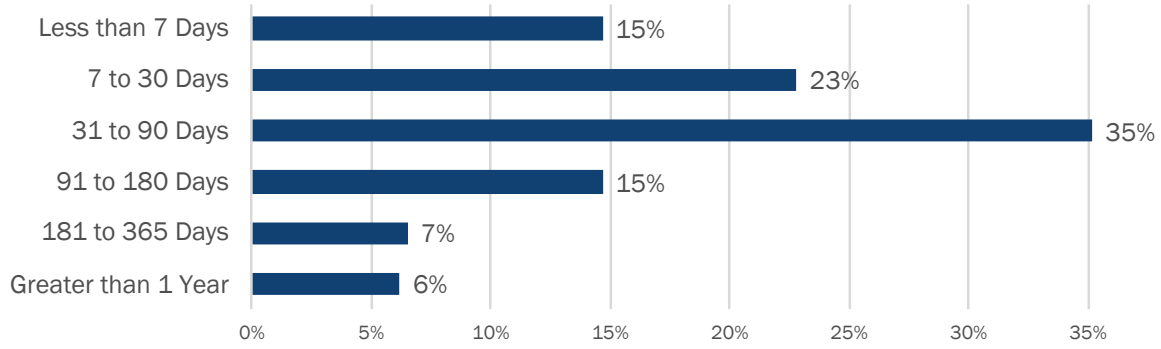
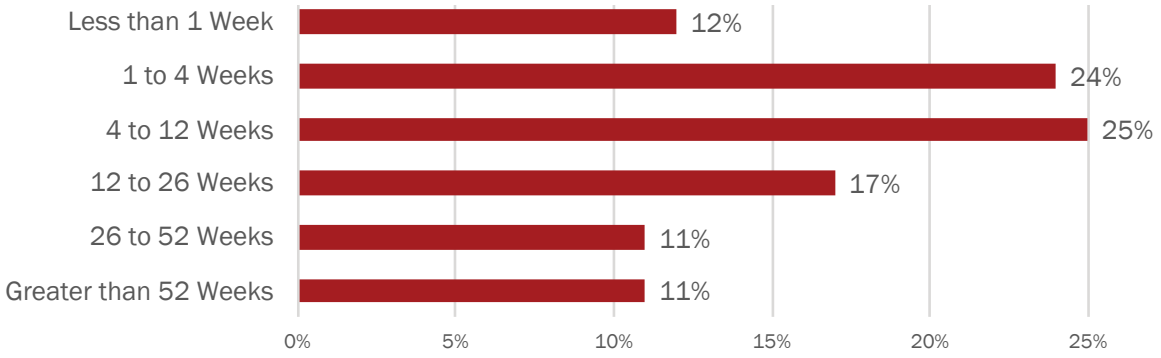


Figure 46

Distribution of Temporary Disability Paid Duration



Source: MTDLI, Workers' Compensation Administrative Network (2013-2015)

Predictors of No Substantial Return to Work

A logistic regression model was used to analyze factors associated with workers achieving substantial return to work. The model estimates the odds of a worker reporting they had not achieved substantial return to work primarily due to their injury, versus a worker reporting they had either achieved substantial return to work or they had not achieved substantial return to work primarily for a reason other than their work injury, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 14

Predictors Associated with No Substantial Return to Work

Employment Characteristics	
Tenure with employer	Workers with tenure of less than one year at the time of their injury had increased odds of reporting no substantial return to work primarily due to their work injury. Compared to workers with tenure of more than 5 years, the odds of not achieving substantial return to work for workers with tenure of 6 to 12 months increased by a factor of 5.4 and the odds of not achieving substantial return to work for workers with tenure of less than 6 months increased by a factor of 4.2. Tenure with employer was a moderate predictor of achieving substantial return to work.
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting no substantial return to work primarily due to their work injury. Compared to workers who not concerned, the odds of not achieving substantial return to work for workers who were very concerned increased by a factor of 6. Concern for being fired or laid off after injury was a strong predictor of achieving substantial return to work.
Injury Characteristics	
Perceived injury severity	Workers with greater perceived injury severity scores had increased odds of reporting no substantial return to work primarily due to their work injury. Compared to workers with perceived injury severity scores of less than 15 points, the odds of reporting no substantial return to work for workers with perceived injury severity of 25 to 34 points increased by a factor of 3.1 and the odds of reporting no substantial return to work for workers with perceived injury severity of 35 or more points increased by a factor of 5. Perceived injury severity was a moderate predictor of achieving substantial return to work.
Other Characteristics	
Claim status	Workers whose claim was still open at the time of survey had increased odds of reporting no substantial return to work primarily due to their injury. For workers whose claim was open, the odds of reporting no substantial return to work increase by a factor of 6.1. Claim status was a very strong predictor of achieving substantial return to work.

For Figures 47 through 49, note that *Achieved Substantial Return to Work* includes respondents who did not return to work for a reason primarily other than their injury and *Did Not Achieve Substantial Return to Work* only includes respondents who did not achieve substantial return to work primarily due to their injury.

Figure 47

Substantial Return to Work by Tenure with Employer

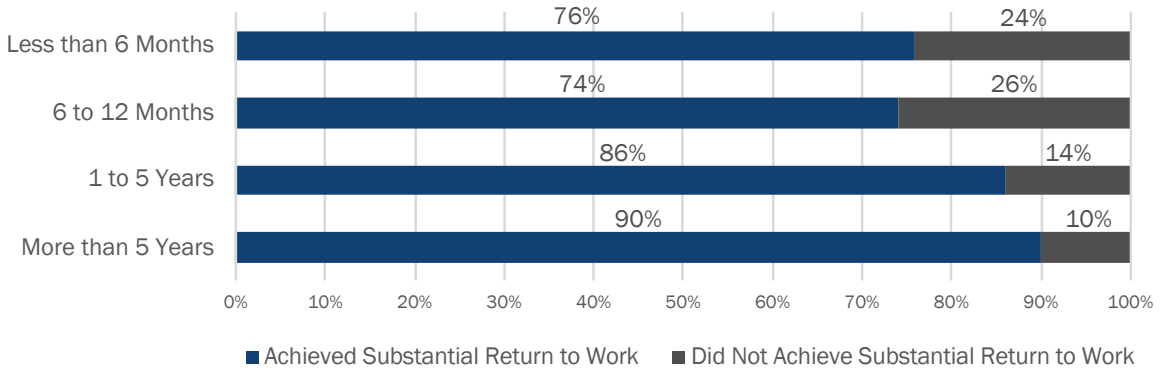


Figure 48

Substantial Return to Work by Concern for Being Fired or Laid Off

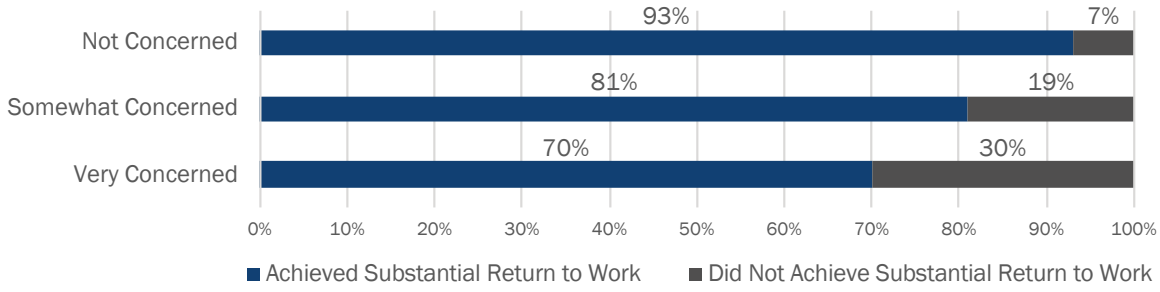
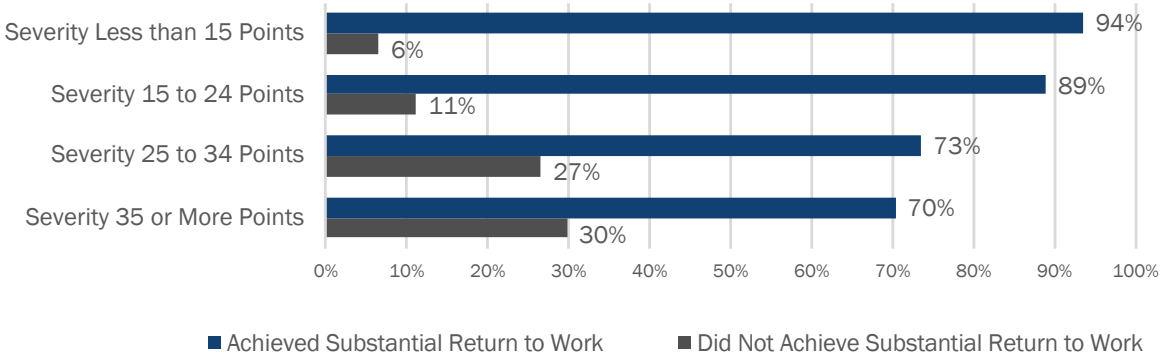


Figure 49

Substantial Return to Work by Perceived Injury Severity



Predictors of Not Working at the Time of Survey

A logistic regression model was used to analyze factors associated with workers not working at the time of survey primarily due to their injury. The model estimates the odds of a worker reporting they were not working at the time of survey primarily due to their injury, versus a worker reporting they were working at the time of survey or they were not working at the time of survey primarily for a reason other than their work injury, for each predictor with respect to all other variables within the model. The association is described as very strong, strong, or moderate.[v]

Table 15

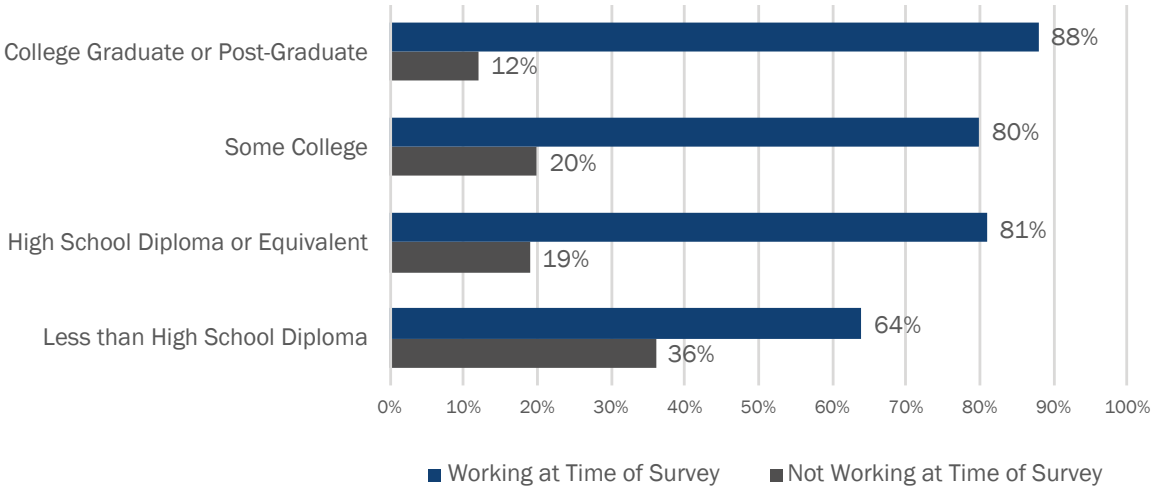
Predictors Associated with Not Working at the Time of Survey

Worker Characteristics	
Educational attainment	Workers with less educational attainment had increased odds of reporting not working at the time of survey primarily due to their injury. Compared to workers with a college-graduate or post-graduate degree, the odds of reporting not working at the time of survey for workers with a high school diploma (or equivalent) or less than a high school diploma increased by a factor of 3.5. Educational attainment was a moderate predictor of not working at the time of survey.
Employment Characteristics	
Concern for being fired or laid off	Workers who were concerned with being fired or laid off after their injury had increased odds of reporting not working at the time of survey primarily due to their injury. Compared to workers who were not concerned, the odds of reporting not working at the time of survey for workers who were somewhat concerned increased by a factor of 3.4 and the odds for workers who were very concerned increased by a factor of 5.7 Concern for being fired or laid off after injury was a strong predictor of not working at the time of survey.
Employer discussed work plan/offered accommodations	Workers who reported their employer discussed a work plan or offered accommodations after their injury, such as fewer hours, modified duty, or additional breaks, had decreased odds of reporting not working at the time of survey primarily due to their injury. For workers who reported their employer did not discuss a work plan or offer accommodations after their injury, the odds of reporting not working at the time of survey increase by a factor of 2.2. Whether an employer discussed a work plan or offered accommodations was a moderate predictor of not working at the time of survey.
Injury Characteristics	
Perceived injury severity	Workers with greater perceived injury severity scores had increased odds of reporting not working at the time of survey primarily due to their injury. Compared to workers with perceived injury severity scores of less than 15 points, the odds of reporting not working at the time of survey for workers with perceived injury severity of 25 to 34 points increased by a factor of 5.4 and the odds of reporting not working at the time of survey for workers with perceived injury severity of 35 or more points increased by a factor of 6.2. Perceived injury severity was a strong predictor of not working at the time of survey.
Other Characteristics	
Claim status	Workers whose claim was still open at the time of survey had increased odds of reporting not working at the time of survey primarily due to their injury. For workers whose claim was still open, the odds of reporting not working at the time of survey increase by a factor of 6. Claim status was a very strong predictor of not working at the time of survey.

For Figures 50 through 53, note that *Working at Time of Survey* includes respondents who were not working at the time of survey for a reason primarily other than their injury and *Not Working at Time of Survey* only includes respondents who were not working at the time of survey primarily due to their injury.

Figure 50

Work Status at Time of Survey by Educational Attainment



Workers with a high school diploma or equivalent and workers with less than a high school diploma had 3.5x increased odds of reporting not working at the time of survey primarily due to their injury compared to workers with a college graduate or post-graduate degree.

Figure 51

Work Status at Time of Survey by Concern for Being Fired or Laid Off

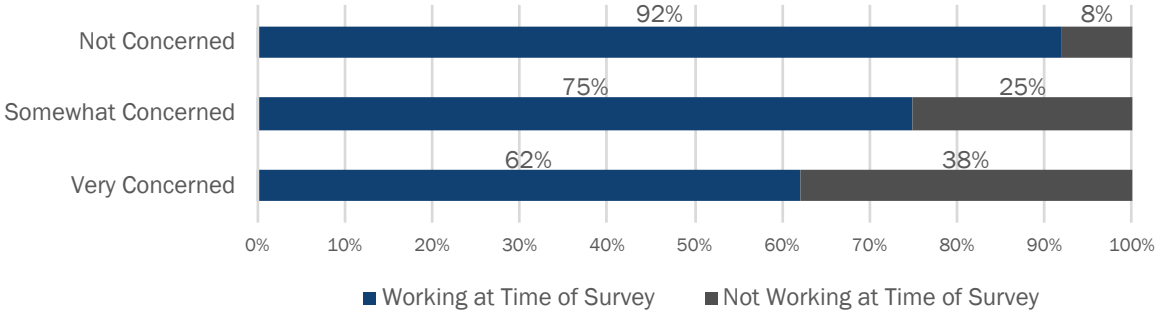
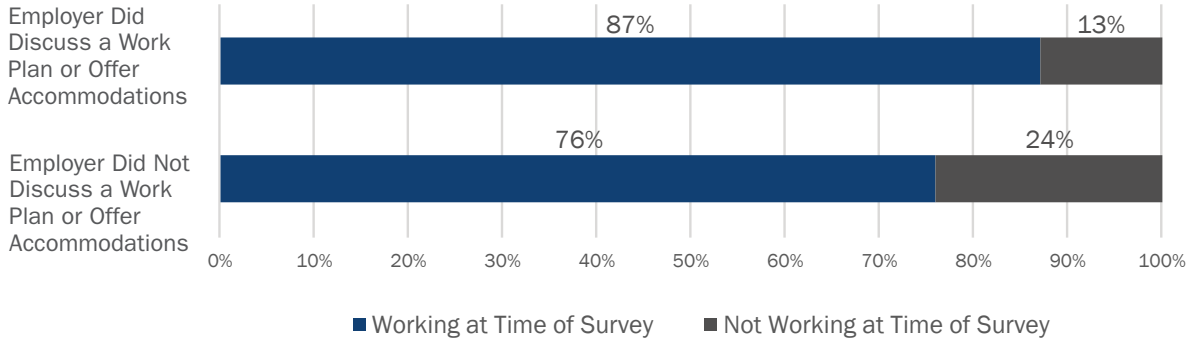


Figure 52

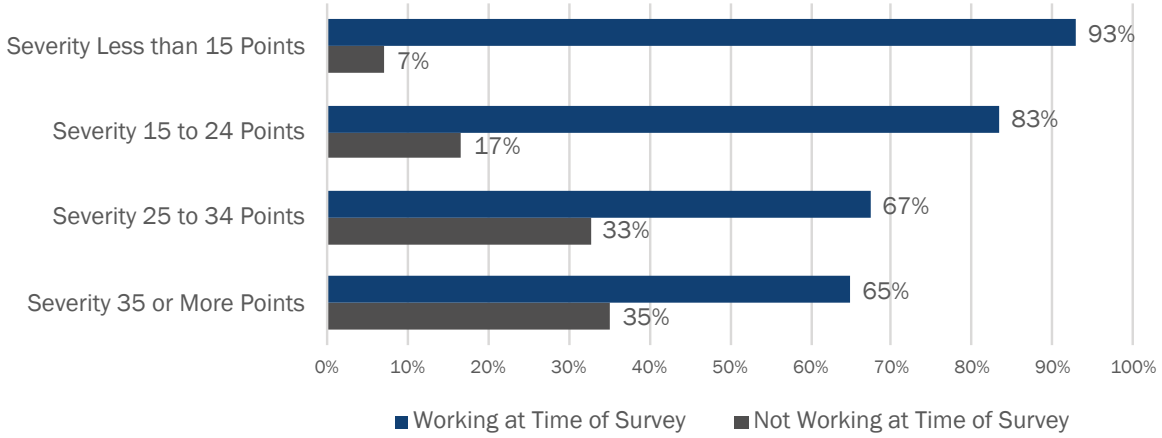
Work Status at Time of Survey by Whether Employer Discussed a Work Plan or Offered Accommodations



Workers who reported that their employer did not discuss a work plan or offer accommodations after their injury, such as fewer hours, modified duty, or additional breaks, were twice as likely to report not working at the time of survey.

Figure 53

Work Status at Time of Survey by Perceived Injury Severity

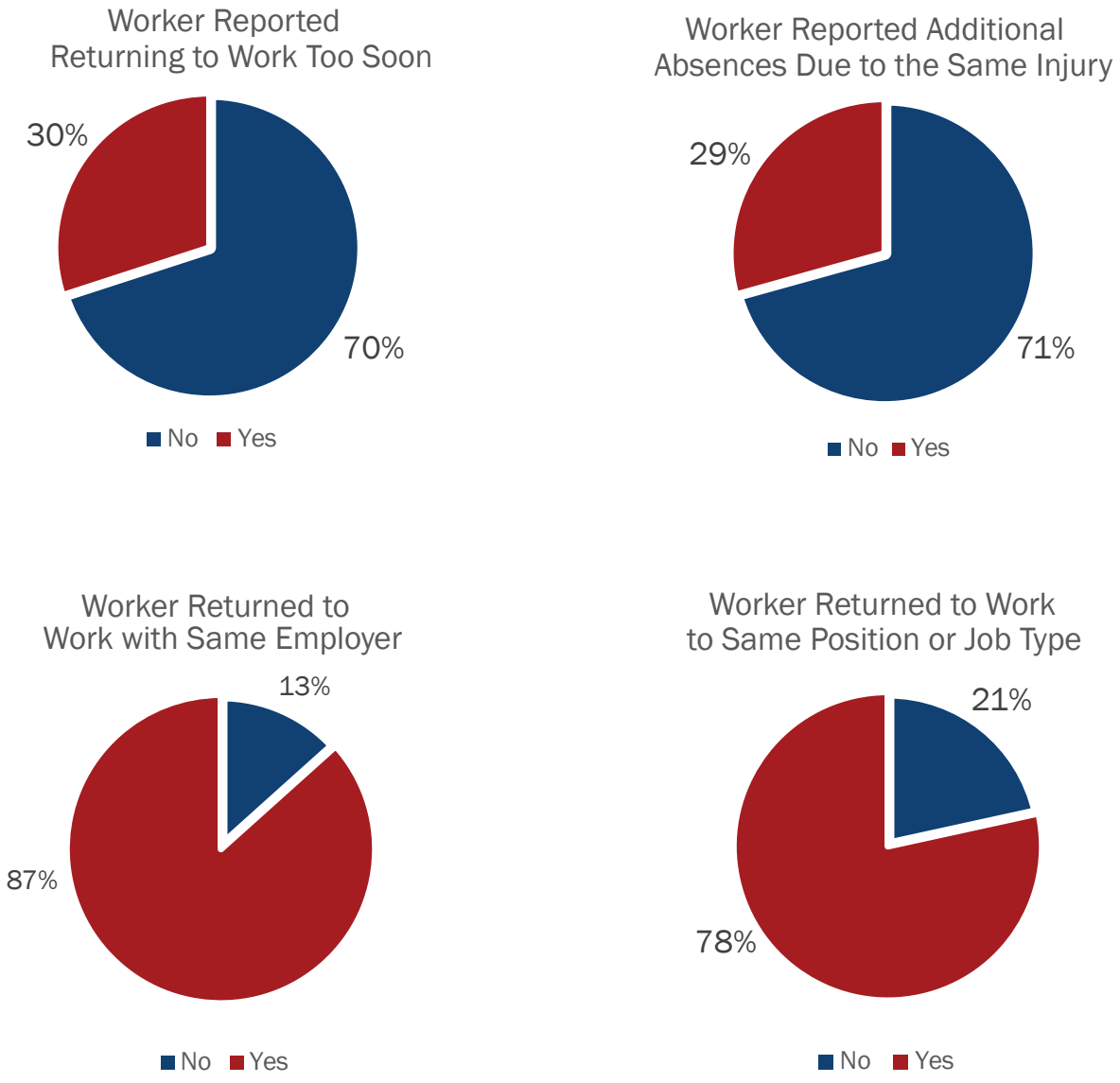


Other Elements of Return to Work

Figure 54 illustrates four additional elements of return to work for workers who did achieve substantial return to work.

Figure 54

Other Elements of Return to Work



Other

Since insurers and the Montana Department of Labor & Industry are two other key workers' compensation stakeholder groups, workers were also asked about their level of satisfaction with both their claims adjustor and with the Department's customer service.[x] Per Figures 55 and 56, respondents generally reported being satisfied with both their claims adjustor and with the Department. Since not every injured worker will have reason to contact the Department about their claim, the *Neither Satisfied nor Dissatisfied* category comprises over a third of all respondents in Figure 55.

Figure 55

Satisfaction with Montana Department of Labor & Industry Customer Service

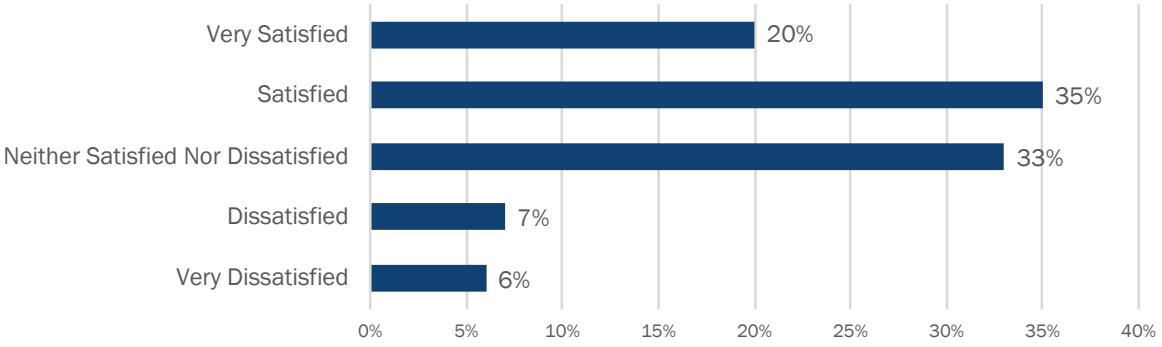


Figure 56

Satisfaction with Claims Adjustor

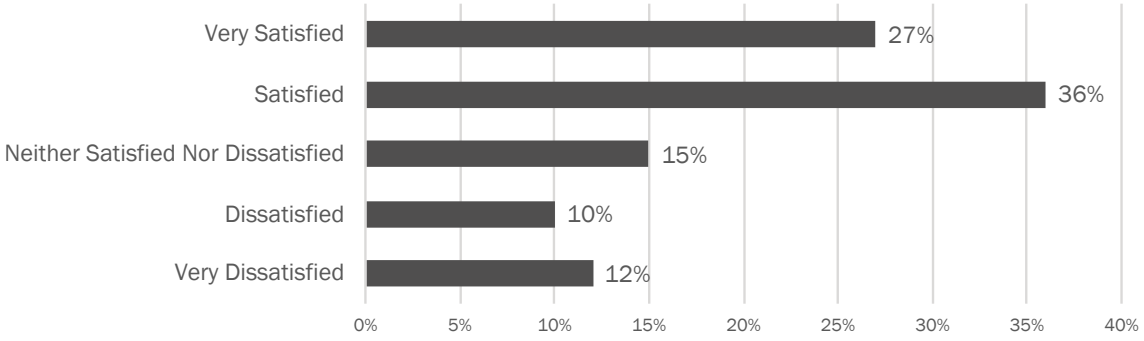
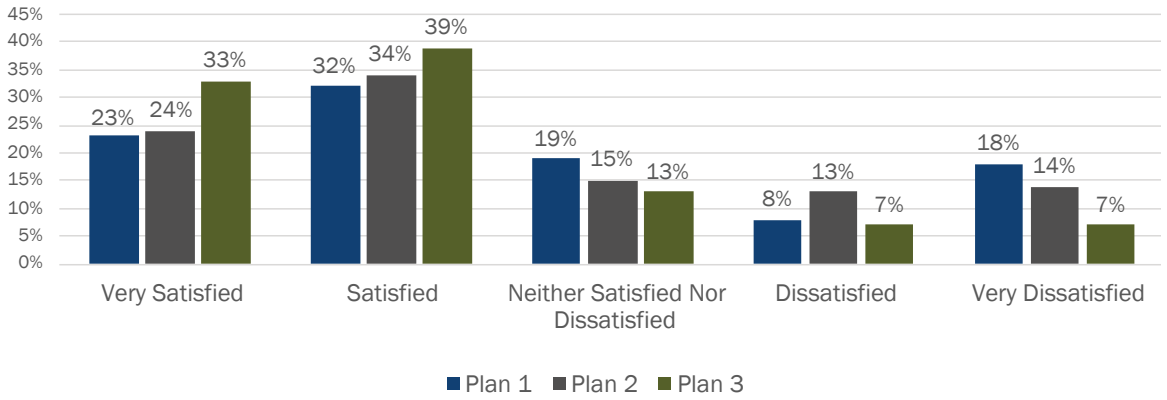


Figure 57

Satisfaction with Claims Adjustor by Plan Type

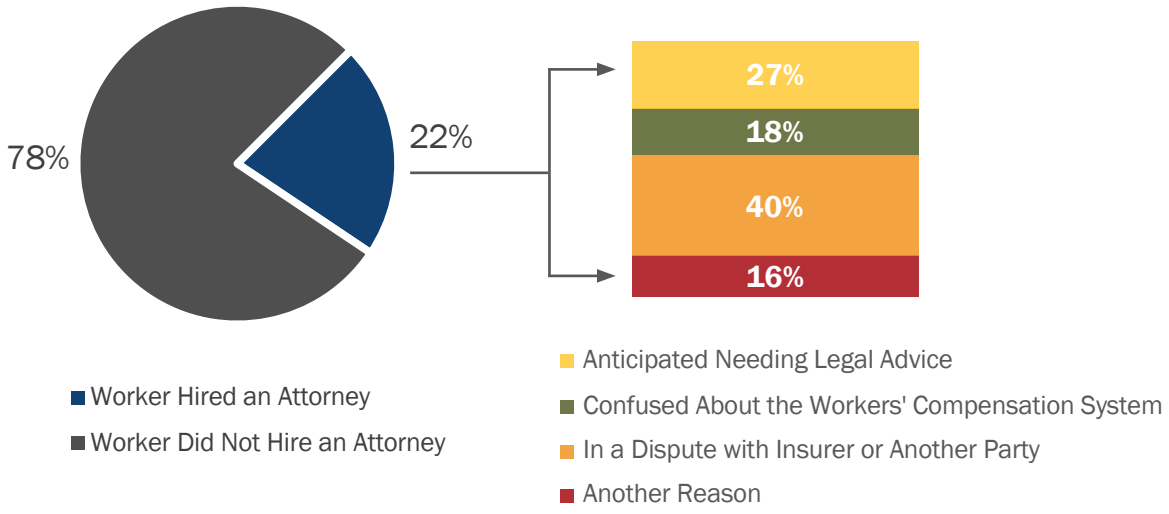


When workers' satisfaction with their claims adjustor is divided by plan type, workers tended to report greater levels of satisfaction from Plan 3 adjustors: 73% of workers were satisfied or very satisfied with their Plan 3 adjustor compared to 58% for private insurers and 55% for self-insured. It should be noted that, of the over 200 private insurers and over 30 self-insured groups in Montana, not all were represented within the group of respondents.

Finally, workers were asked to respond about whether they hired an attorney at any point after their injury and, if yes, what was the reason. Predictably, workers reported that involvement in a dispute was the primary reason for hiring an attorney.

Figure 58

Attorney Involvement and Reported Reason for Hiring an Attorney



Conclusion

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- Endnotes

Conclusion

In addition to presenting workers with an opportunity to share their experience going through Montana's workers compensation system, an injured worker survey provides a systematic approach to measuring worker outcomes and expanding stakeholder understanding of the impacts of a work-related injury, which may be used to better inform workers' compensation policy decisions. Moreover, understanding the predictors that impact those outcomes may benefit insurers, healthcare providers, and employers in identifying workers at risk for worse outcomes and assisting those workers early in the claim.

The Montana Injured Worker Survey results indicate that, although most workers with wage-loss claims and injuries three to five years matured reported positive outcomes, there is still room to improve worker outcomes:

- **Access to Care:** 21% of workers reported problems accessing their desired healthcare provider, with 10% reporting those problems were *big*; 30% of workers reported problems accessing their desired medical treatment or services, with 15% reporting those problems were *big*.
- **Satisfaction with Care:** 17% of workers reported dissatisfaction with the medical care they received from their primary healthcare provider, and 6% reported they were *very* dissatisfied; 16% of workers reported dissatisfaction with the medical care they received overall, and 6% reported they were very dissatisfied.
- **Financial Impact:** 26% of workers reported *major* problems in their ability to afford essential payments after their injury; for workers who achieved substantial return to work, 25% reported time until financial recovery took greater than a year or that they had not yet financially recovered, and 25% reported a loss in earnings since returning to work, with 14% reporting their loss in earnings was *large*.
- **Recovery of Health:** As measured by the SF-12v2™ survey, on average, most workers did not fully recover to their before-injury level of health. Workers' average perceived injury severity was -19 points, and workers' average perceived recovery was only 9 points.
- **Return to Work & Disability Duration:** 19% of workers reported they were not working at the time of survey primarily due to their injury, and 15% reported they had not achieved any substantial return to work since their injury; for workers who achieved substantial return to work, 13% reported a disability duration of greater than 180 days, with 6% reporting disability durations of greater than a year.

Of the predictors of interest, workers' trust in the workplace, as measured by workers' concern for being fired or laid off after injury, stood out as the predictor most commonly associated with injured worker outcomes. For all outcomes of interest, workers who reported being very concerned for being fired or laid off after their injury had *worse* outcomes. Although underlying differences in survey methodology create issues with comparison between the Montana Injured Workers Survey results and results from states interviewed by WCRI, researchers at WCRI also identified workers' trust in the workplace to be a major predictor of worker outcomes.

A moderate, but consistent predictor of interest was whether a worker reported their employer discussed a work plan or offered accommodations after their injury. Workers who reported their employer did not discuss a work plan had increased odds of reporting major problems in their ability to afford essential payments after their injury, increased odds reporting a loss in earnings, and increased odds of not working at the time of their survey primarily due to their injury after controlling for other correlates. Similarly, workers had better satisfaction with care outcomes when they reported their provider discussed a work plan or suggested work accommodations after

their injury. These findings suggest that participation from multiple parties involved in a workers' compensation claim and actively engaging a worker at those multiple levels concerning return to work may lead to better worker outcomes.

Another predictor that stood out as having a strong association with access to care and satisfaction with care outcomes was whether a worker reported their insurer reassigned their primary healthcare provider per §39-71-1101, MCA. While only 10% of respondents reported their provider was reassigned, those workers odds of reporting problems getting their desired healthcare provider, problems getting their desired medical treatment or services, dissatisfaction with the medical care they received from their healthcare provider, and dissatisfaction with their overall medical care all significantly increased after controlling for other correlates. The relationship *cannot* be described as causal, but the association was meaningful nonetheless.

Perceived injury severity was associated with both measures of return to work, as well as whether a worker reported a loss in earnings. Workers with more severe injures had increased odds of reporting no substantial return to work and increased odds of reporting not working at the time of the survey. Workers with more severe injuries who did achieve substantial return to work had increased odds of reporting a loss in earnings. Injury severity may seem like an obvious predictor of outcomes, but the relationship underscores why employer safety training and a safety culture in the workplace are desirable to reduce the likelihood of a severe injury occurring.

Future research would seek to build on the foundation established by the first Montana Injured Worker Survey and to track injured worker outcomes over time. Due to bias across age and more financially serious claims, caution should be used before attempting to generalize results to all injured workers. A follow-up survey would seek ways to eliminate or reduce these biases. As Montana's workers' compensation system evolves, continuing efforts to study injured worker outcomes and associated factors would offer further understanding into how changes in policy impact workers injured on the job.

If you have any questions or comments about this report, you may contact Bri Lake by phone at (406) 444-6527 or email bri.lake@mt.gov.

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i. As part of the 2011 workers' compensation reform bill (HB 334), an injured worker may choose their initial treating physician, but an insurer may reassign an injured worker's treating physician at any point after the claim is accepted. (§39-71-1101, MCA)

ii. The SF-12v2™ survey includes questions about an individual's physical and mental health. WCRI injured worker survey asks respondents to answer the full set of questions for the time of survey score and asks respondents to answer only the physical questions for the before injury score and the after injury score. Refer to WCRI's "Predictors of Worker Outcomes" studies for more information (Victor et al., 2014 and 2015).

iii. The association between age and injury severity is not always clear, as previous research may show that age is a driving factor of severity or may suggest the opposite, that age is not a driving factor of severity (Besen et al., 2016; MT DLI, 2012; Restrepo & Shuford, 2011; Restrepo et al., 2006).

iv. Regional states include AK, AZ, CO, HI, ID, NM, NV, OR, and UT. Countrywide states include AK, AL, AR, AZ, CO, CT, DC, FL, GA, HI, IA, ID, IL, IN, KS, KY, LA, MD, ME, MI, MN, MO, MS, MT, NC, NE, NH, NJ, NM, NV, OK, OR, RI, SC, SD, TN, UT, VA, VT, WI, and WV. Self-insured groups not included.

v. Interaction terms were not included within the model to avoid complex interpretations of the coefficients. The association is described as very strong when the p-value is below $\alpha = .001$, we describe an association as strong when the p-value is below $\alpha = .01$, and we describe an association as moderate when the p-value is below $\alpha = .05$. Weak associations are not included.

vi. Median SF-12v2™ scores were 56, 34, and 46, respectively.

vii. Since the date of injury for occupational diseases and cumulative disorders can be difficult or impossible to pin down, workers with these types of injuries were asked to respond to survey questions based on their date of diagnosis.

viii. Substantial return to work was not defined as 30 consecutive work days to limit potential confusion that would have been impossible to clarify via a paper survey.

ix. The Department receives benefit totals as reported by insurers but does not receive specific dates on when those benefits were paid-out.

x. We made efforts within the survey to clarify that the Montana Department of Labor & Industry was the regulatory body and is separate from the Montana State Fund.

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