Evaluating PTSD claims in Minnesota's workers' compensation system: Findings and recommendations

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Acknowledgments

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We gratefully acknowledge the leadership and staff from the Minnesota Department of Labor and Industry, whose operational knowledge of claims processing, policy development and system administration provided critical insights into existing practices and challenges. Their engagement ensured that the report's findings are grounded in the practical realities of the current workers' compensation framework.

Representatives from public safety organizations, including firefighter unions, law enforcement agencies and emergency medical services personnel, offered essential frontline perspectives. Their firsthand experiences illuminated the occupational stressors unique to these professions and underscored the importance of accessible, evidence-based mental health support within the claims process.

Mental health clinicians and healthcare providers specializing in occupational trauma contributed clinical expertise regarding diagnostic criteria, treatment modalities and barriers to effective care. Their input was crucial in evaluating the adequacy of current treatment options and identifying opportunities for improving clinical support within the system.

Employee advocates and workers' compensation advocacy groups participated by sharing the perspectives and concerns of claimants, highlighting areas where procedural transparency and fairness could be enhanced. Their voices ensured that the report reflects the needs and experiences of the workforce affected by PTSD.

Employers and insurers shared their experiences navigating the administrative process and the complexities of communication throughout the system. Their participation ensured their voices were heard in support of reforms for transparency, improved education for claimants and support for coordinated return-to-work programs.

Policy advisors and researchers also played a key role by providing analytical context related to legislative frameworks, administrative processes and evidence-based best practices. Their guidance helped shape the report's recommendations for policy and administrative reforms that balance clinical, operational and worker-centered considerations.

We extend our sincere thanks to all stakeholders for their willingness to contribute their time, knowledge and insights. Their collaborative spirit and commitment to advancing occupational mental health have been fundamental in producing a report aimed at fostering a more transparent, consistent and equitable workers' compensation system for PTSD claims.

Preface

Post-Traumatic Stress Disorder (PTSD) has been recognized as an occupational disease in Minnesota since October 2013. It is the only work-related mental injury that is compensable without an accompanying physical injury in Minnesota's workers' compensation system. Also, workers must ordinarily prove that their injury is compensable. In January 2019, the Minnesota legislature passed a law presuming the compensability of PTSD for workers in specific occupations, referred to in this report as the rebuttable presumption. The rebuttable presumption applies to workers with dates of injury on or after January 1, 2019, who were employed on active duty as a licensed police officer; a firefighter; a paramedic; an emergency medical technician; a licensed nurse employed to provide emergency medical services outside of a medical facility; a public safety dispatcher; a correctional officer or security counselor employed by the state or a political subdivision at a corrections, detention, or secure treatment facility; a sheriff or full-time deputy sheriff of any county; or a member of the Minnesota State Patrol (Minn. Stat. §176.011, subd. 15 (e)). Although PTSD claims account for only 1% of all non-COVID-19 claims reported to DLI in 2022, their uniqueness within a system designed for physical injuries has resulted in much discussion.

In 2023, the Minnesota Legislature, at the recommendation of the Workers' Compensation Advisory Council, passed a bill directing the Minnesota Department of Labor and Industry to conduct a study to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related PTSD.

DLI contracted with the Midwest Center for Occupational Health and Safety (MCOHS) at the University of Minnesota to complete this report. DLI has a history of partnering with MCOHS to research and understand issues affecting workers and employers in Minnesota. Throughout this study, the MCOHS team consistently provided thorough research into and analysis of PTSD in the workers' compensation system. Together with DLI staff, the MCOHS team developed a report that expands our understanding of the issues related to PTSD in the workers' compensation system for all system stakeholders. DLI appreciates the diligence and dedication of the MCOHS research team under the leadership of MCOHS Deputy Director Dr. Bruce Alexander.

As you read through this report, please bear in mind the following. First, this report represents a significant deep dive into available regulatory data and is the most comprehensive analysis of work-related PTSD in Minnesota since work-related PTSD became a compensable injury in 2013. However, note those parts of the report referencing gaps in available data and where more robust data and study are needed to recommend meaningful change.

Second, mental injuries behave differently from physical injuries in the workers' compensation system. It is where they behave differently that the opportunity resides to make the most significant impact.

Third, the goal of this report is to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related PTSD. Based on the quantitative and qualitative data gathered and analyzed in this report, dramatic and multi-faceted improvement is needed to meet this goal.

Minnesota's workers' compensation system is over 110 years old and has been honed over time to meaningfully address physical injuries. The same can be done to meaningfully address work-related PTSD. This report identifies multiple areas where changes could be made to improve the experience and outcomes of workers with PTSD and highlights where more information or research on work-related PTSD is needed. DLI expects that future discussions related to the results of the PTSD study and opportunities for system improvement will come before the WCAC. DLI is looking forward to working with the WCAC, legislators and other system stakeholders to further explore the findings and recommendations included in this report.

Thank you to everyone who participated in the development of this report from the researchers who analyzed the data to the stakeholders who sat for panel discussions and shared openly about their experiences. DLI strives to create an environment where the workers' compensation system operates efficiently, fairly and effectively for all workers, employers and insurers. We will continue to work together with all stakeholders to achieve this goal.

1. Executive summary

This report presents the research, analysis and findings of the Post-Traumatic Stress Disorder Study (Laws of Minnesota 2023, chapter 51, article 5). The purpose of the study was to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related post-traumatic stress disorder (PTSD). In partnership with the Department of Labor and Industry (DLI), researchers from the University of Minnesota conducted a comprehensive examination of PTSD in workers' compensation systems. Research objectives included:

- reviewing current Minnesota statutory and case law on work-related PTSD (including Minnesota's definition of PTSD), considering the occupations subject to Minnesota's rebuttable presumption and comparing Minnesota law with other jurisdictions (Section 3);
- reviewing and analyzing PTSD claims in the Minnesota workers' compensation system (Section 4);
- seeking input and policy recommendations from interested stakeholders, through a public survey, interviews and panel discussions (Sections 5 and 6);
- reviewing evidence-based approaches and best practices for PTSD screening, diagnosis and treatment (Section 7); and
- identifying programs with effective prevention and programs with high return-to-work outcomes (Section 8).

PTSD definition and impact

According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM), 5th Edition, post-traumatic stress disorder (PTSD) is a mental health condition that develops after being exposed to a traumatic event or series of events that involve actual or threatened death, serious injury or sexual violence. PTSD is characterized by persistent re-experiencing of the event(s), avoidance of trauma-related stimuli, hyperarousal or reactivity, and negative alterations in cognition or mood. Symptoms must persist for a minimum of one month and cause clinically significant distress or impairment in social, occupational or other important areas of functioning.

PTSD is a serious condition for workers who experience traumatic incidents while at work. PTSD also affects the workers' families and relationships with coworkers. PTSD presents challenges for workers' compensation systems that allow PTSD as a covered injury. In Minnesota, PTSD is the only mental condition that is compensable without an accompanying physical injury or physical symptom. While the same timelines for claims reporting and liability acceptance or denial apply to PTSD as for any other work injury, this report shows that the handling of PTSD claims has become significantly different from the handling of claims for physical injuries. Although workers' compensation has proven to be a resilient and dynamic system over its more than 110 years in Minnesota, mental injuries are providing a challenge to the operation of the system, to the workers seeking treatment and wage-loss benefits to address their condition, and to their employers.

Key findings from this report are presented below.

Minnesota's legal framework for PTSD in workers' compensation

Minnesota is one of 42 states in the United States where PTSD is a compensable work-related injury without an accompanying physical injury. Minnesota's definition of PTSD and diagnostic requirements are consistent with many other states. Minnesota is also one of nine states with a PTSD rebuttable presumption statute. In

Minnesota, rebuttable presumption means that for certain occupations a diagnosis of PTSD is presumed to be work-related and compensable through workers' compensation unless the employer provides evidence that it is not. The occupations covered by the rebuttable presumption vary by state. Firefighters are universally covered in all states with a PTSD rebuttable presumption, followed by police officers, who are covered in eight states (including Minnesota). In comparison to other states, Minnesota's list of covered occupations is moderately inclusive, for example, Minnesota is one of three states to include 911 dispatchers and all corrections officers in the presumption but has not extended it to include nurses like Washington, nor excluded most occupations like New Mexico.

PTSD claim trends in Minnesota

Identifying and tracking mental-injury-related claims in the workers' compensation system is a significant challenge. Among the PTSD claims identified for this study, less than half were originally coded as PTSD. Insurers issued an initial denial of primary liability for more than 90% of all PTSD claims from 2014 to 2023. This rate was far higher than the denial rate among all non-COVID-19 claims during the same period, which did not exceed 20% (Minnesota Workers' Compensation System Report, 2025). The initial denial rate among PTSD claims by workers in presumption occupations did not decrease after the rebuttable presumption came into effect in 2019 and remained high in 2020. Further, initial denial rates for PTSD claims among presumption workers exceeded those among non-presumption workers each year from 2017 onward.

High rates of initial denial among PTSD claims may be influenced by several intersecting factors and statutory timelines at the beginning of a claim. First, there is variability and uncertainty regarding the date of injury for PTSD claims, for example, whether it is the date of trauma or diagnosis, the first date of treatment or first date of lost time. Second, for PTSD to be compensable under the law, the worker must have a diagnosis of PTSD from a licensed psychologist or psychiatrist after experiencing at least one month of persistent symptoms as required by the DSM-5 TR. Third, current statutory timelines were drafted for physical traumas with more than three days of claimed disability, and require timely action by all parties within a shorter timeframe than the requirement for at least one month of persistent symptoms for a PTSD diagnosis. Specifically, the employee must report an injury within 14 days of occurrence; the employer must submit a report of injury to their insurer within 10 days of the disability; and the insurer must accept or deny the claim and begin payment of benefits within 14 days of the employer receiving notice of disability. The high denial rates may be in part because the concepts of date of injury, required notice and a determination of compensability for a physical injury do not clearly align with requirements for a PTSD diagnosis under the DSM-5 TR.

Workers in all occupations filed claims more quickly after a mental injury in the post-presumption law period compared to before the law, which may demonstrate improvements in recognizing early symptoms of PTSD among workers.

A primary goal of the workers' compensation system is to maximize the potential for injured workers to return to work. Four in five PTSD claims by non-presumption workers resulted in the workers returning to work within a year after the claims closed. However, return-to-work rates were lower among presumption occupation workers, dropping to below 60% after the presumption. The decrease in the return-to-work rate among presumption workers was driven mainly by police officers, the largest occupation group among presumption workers in this study.

Stakeholders highlighted the complexity of PTSD in workers' compensation

Researchers sought input from interested stakeholders through an online survey, stakeholder interviews and panel discussions. Stakeholder engagement and opinion are a valuable part of this report; however, due to the scope of this study, the opinions expressed by stakeholders cannot be considered representative of all affected stakeholders in Minnesota.

Many stakeholders who provided input for this report expressed concerns with the legal complexity of PTSD in workers' compensation. Stakeholders reported there was often inadequate communication regarding claim status and a lack of accessible data about PTSD claims. They also reported concerns with statutory timelines and, in some cases, expressed confusion regarding existing Minnesota law. Workers, in particular, reported concerns with the stigma of reporting work-related PTSD. Overall, stakeholders who participated in the survey, interviews or panel discussions highlighted the need for targeted changes to improve the experiences and outcomes of workers with PTSD.

Minnesota's treatment parameters align with evidence-based best practices

Minnesota's current treatment parameters align with the best practices identified in this report. However, provider wait-times and the limited list of providers that can diagnose work-related PTSD in Minnesota are barriers to receiving timely and effective care.

This report also included an assessment of evidence-based best practices for PTSD screening tools. The effectiveness of these screening tools may depend on how well employers integrate the tools in workplace wellness programs and the acceptance of the tools by the working population.

PTSD prevention and return-to-work strategies

Work-related PTSD prevention strategies and return-to-work programs are continually evolving. Mental health wellness training programs, along with embedding PTSD prevention into occupational safety and health systems, is the foundation of PTSD prevention. Minnesota has actively embraced this model through programs such as the *Minnesota Responder Resilience Program* and the *MnFIRE Emotional Resilience Training*.

Researchers found phased integration, supervisor support, peer support networks and flexibility in duty modification are key components of a successful return-to-work program. Many of these practices are currently included in statewide pilots and organizational return-to-work protocols for first responders in Minnesota. Programs in California and Ontario also provide practical examples of return-to-work programs for peace officers and first responders.

Recommendations

The workers' compensation system in Minnesota strives to create an environment where injured workers promptly receive benefits and services and where the system operates efficiently and effectively. The goal of this report is to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related PTSD. Making the following improvements would provide workers with a better experience throughout the process of diagnosing PTSD, filing a work-related PTSD claim, receiving effective treatment and returning to work. Some changes relate to administration, education and outreach, which can be made within DLI, while others would require legislative action to amend statutes that were designed for physical injuries to the realities of compensable mental injuries in the workplace.

Improving the administrative processing of claims

The delayed onset of PTSD, combined with the complexity of mental health assessments, presents challenges for the timely and accurate processing of PTSD claims. The data show some claims are denied early in the process, often before a definitive diagnosis has been established by a qualified mental health professional. Such early denials may lead to more claims being resolved through legal settlements, which can increase both financial and emotional burdens on workers, rather than administrative adjudication. Additionally, current administrative data do not consistently include specific markers to identify mental injury claims, which limits the ability to monitor trends and outcomes effectively.

- **Improve data quality on the First Report of Injury (FROI) for mental injury claims.** The absence of explicit data fields or standardized indicators for PTSD claims within the FROI complicates comprehensive monitoring and evaluation of these claims. At a high rate, insurers and self-insured employers inconsistently or inaccurately identify PTSD and mental injury claims on FROI forms. Education and outreach to insurers and improved data capture along with monitoring capabilities will enable more informed policy decisions and support ongoing efforts to address systemic challenges related to work-related PTSD claims.
- **Standardize the date of injury definition for PTSD.** There is variability and uncertainty regarding the "date of injury" for PTSD claims. Statutes and administrative guidelines should clearly define the "date of injury" for PTSD claims as the date on which a qualified mental health professional provides a formal diagnosis. This clarification will support consistent claim processing and reduce premature denials based on traumatic event dates.
- **Align early claim timelines to the PTSD diagnosis date and provide education around statutory requirements.** Current statutory timelines written for physical injuries are not compatible with the nature of PTSD injuries and the DSM-5 requirement of one month of persistent symptoms. Aligning early claim timelines to the clinical diagnosis date will enhance fairness and consistency in claims administration.
- **Increase education and enforcement around PTSD denial narratives.** Many stakeholders reported that denial notifications often lack sufficient detail about the reasons for denial and the evidence supporting that decision. This can lead to confusion and uncertainty for injured workers and result in unnecessary litigation.
- **Continue collection and analysis of detailed claims data to inform future policy decisions regarding the PTSD presumption.** The rebuttable presumption law is intended to reduce the burden of proof that PTSD is work-related for workers in specified occupations and to ensure such cases are managed appropriately and efficiently. Analysis of Minnesota workers' compensation claims data shows that denial rates for claims filed by workers in covered occupations are like those for non-covered occupations. Claims from occupations covered by the presumption settle at a higher rate and claimants covered under the rebuttable presumption do not demonstrate higher return-to-work rates compared to other claimants. Current data are insufficient to provide recommendations about the rebuttable presumption law, including which occupations are covered and additional analysis of this law and its effects should be conducted following implementation of the recommendations above.

Expanding access to PTSD diagnosis and treatment and vocational rehabilitation services

Current workers' compensation regulations restrict the authority to diagnose PTSD for workers' compensation purposes exclusively to psychiatrists and doctoral-level psychologists. This limitation creates access barriers, delaying timely diagnosis and complicating effective management of PTSD claims. Delays in diagnosis can subsequently impede timely access to necessary treatment services and benefits. Treatments for PTSD are continually evolving and it is essential that workers' compensation programs provide access to effective, evidence-based treatment options to support recovery and return to work.

- **Expand the list of qualified diagnosing providers.** Authorize licensed master's-level mental health clinicians — including Licensed Independent Clinical Social Workers (LICSW), Licensed Marriage and Family Therapists (LMFT), Licensed Professional Clinical Counselors (LPCC) and/or Psychiatric Mental Health Nurse Practitioners (PMHNP) — to perform PTSD diagnostic assessments for compensation purposes, consistent with broader state licensing standards. Expanding diagnostic eligibility promotes timely recognition of PTSD, enabling more effective claim processing and treatment access and, particularly, benefiting workers in rural and underserved communities.
- **Regularly update best practices for diagnosis and treatment.** DLI and the Medical Services Review Board should conduct periodic reviews of PTSD treatment guidelines, ideally every two to three years. A panel of experts could be convened to assess whether:
    - new treatments warrant inclusion on the list of evidence-based options;
    - recent research strengthens or modifies the evidence supporting existing treatments; and
    - any treatments should be removed due to evidence of ineffectiveness or safety concerns.
- **Target outreach regarding vocational rehabilitation services available from DLI's Vocational Rehabilitation unit for denied PTSD claims.** The DLI Vocational Rehabilitation unit provides vocational rehabilitation services to injured workers eligible for rehabilitation services whose claims have been denied, while the worker is challenging the denial (Minnesota Statutes § 176.104). For example, DLI could increase outreach specifically to employee assistance programs or nonprofit organizations that support first responders and their families, outreach to attorneys who represent injured workers and outreach to the broader workers' compensation community through DLI publications.

2. Introduction

2.1 Context and importance of work-related PTSD

2.1.1 What is post-traumatic stress disorder?

According to the American Psychiatric Association's Diagnostic and Statistical Manual of Mental Disorders (DSM), 5th Edition, post-traumatic stress disorder (PTSD) is a mental health condition that develops after being exposed to a traumatic event or series of events that involve actual or threatened death, serious injury or sexual violence. PTSD is characterized by persistent re-experiencing of the event(s), avoidance of trauma-related stimuli, hyperarousal or reactivity, and negative alterations in cognition or mood. Symptoms must persist for a minimum of one month and cause clinically significant distress or impairment in social, occupational or other important areas of functioning. Acute stress disorder is the precursor to PTSD in which symptoms last for at least three days but less than one month. Symptoms of PTSD can also be classified "with delayed expression" if the full diagnostic criteria are not met until at least six months after the event. A more complete definition and listing of the criteria for identifying a mental health condition of PTSD is provided in Appendix A.

2.1.2 Impact of work-related PTSD on employees and the workers' compensation system

Worker mental health is increasingly recognized as an important issue to be addressed by workers and their employers. Articles about workplace stress, burnout and work-life balance fill the pages of scientific journals and workplace safety, business, insurance and health magazines, and hardly a week goes by without the availability of a conference, webinar or presentation about the topic. When a health issue becomes a work disability that requires medical attention and leads to lost workdays and lost wages, policymakers may call upon the workers' compensation system to attend to this issue. This has been the case with PTSD.

PTSD is a serious condition for workers who experience traumatic incidents while at work. PTSD also affects the workers' families and relationships with coworkers. PTSD presents challenges for workers' compensation systems that allow PTSD as a covered injury. In Minnesota, PTSD is the only mental condition that is compensable without an accompanying physical injury or physical symptom. While the same timelines for claims reporting and liability acceptance or denial apply to PTSD as for any other work injury, this report shows that the handling of PTSD claims has become significantly different from the handling of claims for physical injuries. Although workers' compensation has proven to be a resilient and dynamic system over its more than 110 years in Minnesota, mental injuries are providing a challenge to the operation of the system, to the workers seeking treatment and wage-loss benefits to address their condition, and to their employers.

The course of PTSD as a work-related illness is different from almost all other conditions covered by workers' compensation. PTSD may take many weeks to develop after a worker's exposure to a traumatic incident. For some workers, PTSD may not develop following a single event but following the cumulative exposure to multiple traumatic incidents. Exposure to traumatic workplace incidents may occur, for example, because of the worker: being the victim of a violent attack or attempted attack, such as an armed robbery; participating in a dangerous situation, such as responding to a domestic violence emergency; witnessing a serious injury or death of a coworker; or encountering seriously injured or deceased people. During the first month after a traumatic event, workers may suffer from an acute stress disorder, which is not a compensable condition in Minnesota. The diagnosis of PTSD is often delayed due to lack of available health care resources or workers delaying seeking treatment due to stigma associated with PTSD.

DLI has regularly monitored and publicly reported the number of PTSD and mental injury claims and their characteristics. DLI's Research and Data Analytics unit published three *COMPACT* newsletter articles about PTSD claims in recent years (2017, 2020 and 2021)[1] and also wrote a PTSD claims appendix focusing on first responders in the *Adequacy of Disability Benefits for Minnesota Police Officers* study report in 2023.[2] DLI researchers gave presentations about PTSD claim statistics to the Workers' Compensation Advisory Council in 2018 and 2023[3], at the Central States Occupational and Environmental Medicine Association annual conference in Minneapolis in 2023, at the Minnesota Employers Workers' Compensation Alliance quarterly membership meeting in June 2024, and at the 2024 Minnesota Workers' Compensation Summit.

Although there are few PTSD claims in Minnesota's workers' compensation system relative to other injuries, they have a significant impact on parts of the system because PTSD claims are concentrated in a small number of industry sectors, denied at high rates and often resolved in costly settlements. For first responders whose occupations are listed under Minnesota's PTSD presumption, their employers are mostly self-insured local government entities, meaning the benefits are paid from local tax revenues. Given these considerable differences between PTSD and other claims in the workers' compensation system, this report is warranted.

2.2 Scope of study

At the recommendation of the Workers' Compensation Advisory Council, the Minnesota Legislature passed a law in 2023 requiring DLI to conduct a study to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related PTSD, including the following tasks:

- identify evidence-based methods and best practices for early detection and treatment of PTSD;
- review models, including those used in other jurisdictions and systems, for delivering mental health wellness training or employee assistance programs, treatment for PTSD and benefits related to PTSD (review must include outcomes and cost considerations);
- identify any programs in other jurisdictions with effective prevention, timely and effective medical intervention or high return-to-work rates for employees with work-related PTSD;
- review the definition of PTSD provided in Minnesota Statutes, section 176.011, subdivision 15, paragraph (d), and compare it to the definitions in other jurisdictions; and
- consider the list of occupations subject to the rebuttable presumption in Minn. Stat., section 176.011, subd. 15, paragraph (e).

This report examines the legal and administrative context within which PTSD claims are filed, the characteristics of the claims that have been filed, how those claims have been processed and the medical care provided to injured workers. This report also includes opinions, observations and recollections of workers' compensation

[1] *COMPACT*, Minnesota Department of Labor and Industry, February 2017, September 2020, and December 2021.
https://www.dli.mn.gov/sites/default/files/pdf/compact_0217_ptsd_study_reference.pdf
https://www.dli.mn.gov/sites/default/files/pdf/compact_0920_ptsd_study_reference.pdf
https://www.dli.mn.gov/sites/default/files/pdf/compact_1221_ptsd_study_reference.pdf
[2] *Adequacy of Disability Benefits for Minnesota Police Officers* (January 2023, Fonseca-Sarmiento, et al.).
dli.mn.gov/sites/default/files/pdf/police_benefit_adequacy_study.pdf
[3] Presentation to Workers' Compensation Advisory Council, December 2023.
https://www.dli.mn.gov/sites/default/files/pdf/wcac_PTSD_claims_nursing_020823.pdf

experiences from workers, employers, insurers and other stakeholders in the workers' compensation system. The efficacy of treatments and preventive programs are also examined.

2.3 Methodology

This study employed a multi-method research approach to evaluate the statutory, administrative, clinical and experiential dimensions of PTSD claims. The methods included: (1) comparative legal analysis of PTSD presumption statutes across nine U.S. states; (2) administrative data analysis of mental injury claims and return-to-work outcomes in Minnesota; (3) systematic reviews of evidence-based PTSD treatments and screening tools; (4) stakeholder engagement through surveys, interviews and group discussions; and (5) a synthesis of PTSD prevention and reintegration strategies. Each method addressed a core component of the research aims and enabled triangulation of evidence across legal, empirical and stakeholder-informed perspectives.

2.3.1 Comparative legal analysis of PTSD laws (Section 3)

A comparative legal analysis evaluated the compensability of PTSD in workers' compensation throughout the United States and presumption statutes across nine U.S. states: Minnesota, California, Louisiana, Maine, New Hampshire, New Mexico, Oregon, Vermont and Washington. The analysis used systematic legal research, statutory review, and structured comparative assessment of presumption frameworks, diagnostic criteria, evidentiary standards, occupational coverage, rebuttal mechanisms and procedural requirements.

Primary legal sources included state statutes, legislative histories, administrative regulations and case law where available. Statutes were identified through direct queries of official state legislative websites and corroborated with secondary sources, such as legal databases (for example, Westlaw, LexisNexis) and official workers' compensation board publications. State laws were reviewed as enacted through December 2024, ensuring the most current legislative language was analyzed, including any amendments pending implementation in 2025.

The comparative framework was organized into five analytic domains.

- Terminology and diagnostic criteria: Reviewed the statutory definitions of PTSD, use of the DSM as a diagnostic anchor and professional qualifications required for diagnosis.
- Legal presumption frameworks: Assessed the type of presumption (for example, rebuttable, prima facie), evidentiary thresholds for rebuttal (for example, substantial factors, clear and convincing evidence, preponderance of the evidence) and procedural fairness protections (for example, mandatory disclosure requirements).
- Covered occupations: Identified and compared the range of occupational groups eligible for presumption coverage, including law enforcement, firefighters, emergency medical personnel, dispatchers, correctional officers and nurses.
- Rebuttal standards and employer obligations: Analyzed state-specific rebuttal standards for PTSD claims, including procedural obligations to disclose rebuttal factors and the relative strength of worker protections.
- Procedural requirements and limitations: Compared timelines for injury notification, claim filing deadlines, diagnosis requirements and administrative exclusions affecting claim eligibility.

Data extraction was performed manually for each jurisdiction, with findings summarized into structured comparative tables for cross-state analysis. To ensure accuracy and consistency, extracted data were independently verified by two legal research analysts and discrepancies were resolved through team consensus.

The analysis emphasizes Minnesota's statutory model as a reference point, evaluating its relative strengths and weaknesses compared to peer states. Policy implications were derived based on thematic synthesis across domains, highlighting best practices and opportunities for statutory refinement. The final synthesis integrates legal analysis with occupational health and public policy perspectives to inform future legislative and administrative reforms.

2.3.2 Review of PTSD claims in Minnesota's workers' compensation system (Section 4)

This section used administrative datasets from three primary sources:

- DLI's workers' compensation claims database;
- the Medical Data Call collected by the National Council on Compensation Insurance on behalf of the Minnesota Workers' Compensation Insurers Association; and
- quarterly wage detail records maintained by the Minnesota Department of Employment and Economic Development (DEED).

The study cohort was developed from workers' compensation claims with injury dates from January 2014 through June 2023, reported by Sept. 30, 2023. The DLI workers' compensation claims database does not include medical treatment data and only a few claims include medical diagnosis codes. Claims were selected if they exhibited any evidence of a mental injury based on DLI-coded or insurer-coded injury types or the presence of mental injury-related keywords in the first report of injury (FROI) injury narrative. Using these sources and available denial narratives, each claim was assigned a likelihood score for PTSD, stress or anxiety, other mental injuries, combined mental and physical injuries, or physical injuries only, with physical-only claims excluded from further analysis. Microsoft's prebuilt text recognition software was used to scan claim documents and refine the classification of mental injury types. Manual adjudication was applied to resolve ambiguous cases and duplicate or related claims were consolidated. This process resulted in an analytic cohort of 1,786 PTSD claims and 1,030 other mental injury claims.[4]

Medical treatment analysis was conducted using aggregated data from the full Medical Data Call dataset. Total payments, average payments per claim, service counts by location and provider type, and treatment durations were summarized for PTSD and comparison groups classified by ICD-10 codes.

Return-to-work outcomes were assessed by linking mental injury claims to DEED unemployment insurance records covering the January 2013 through June 2024 period. Return-to-work status was determined using filings of the Notice of Intention to Discontinue Workers' Compensation Benefits and vocational rehabilitation plan closure forms, and employer-reported wage earnings. Claims without employment data across all years were excluded, resulting in 2,357 mental injury claims reviewed in the return-to-work analysis.

2.3.3 Stakeholder engagement (Sections 5 and 6)

A multi-method qualitative and quantitative design was employed to engage key stakeholders involved in Minnesota's PTSD claims system. Data collection consisted of a public stakeholder survey and semi-structured one-on-one interviews and group discussions with stakeholder groups.

The primary goal of the stakeholder survey was to gather insights into potential systemic or regulatory changes that could improve the experience and outcomes of employees with work-related PTSD. Survey respondents

[4]An additional 47 consequential PTSD claims were identified; however, these were excluded from analysis.

constituted a convenience sample, offering initial perspectives on facilitators and barriers within the current workers' compensation process, with the intent to use the interviews and group discussions to probe these ideas in more depth.

The survey development began with qualitative data collected by DLI through an open-ended form on its public website. Respondents provided feedback on the PTSD workers' compensation claim process. The University of Minnesota (UMN) team reviewed and categorized these responses thematically. Based on these themes, UMN and DLI collaboratively developed a structured public survey that included categorical and scaled-response questions targeting a range of stakeholders — such as workers, attorneys, insurers and employers — that interact with the workers' compensation system in Minnesota and have experience with PTSD claims.

The survey was built in REDCap, a secure online platform for managing web-based surveys and databases. The survey link was launched Oct. 21, 2024, and distributed through multiple channels, including the DLI PTSD Study webpage, the December 2024 edition of DLI's *COMPACT* newsletter and direct email messages to previously identified interested parties. By the time the survey closed Dec. 31, 2024, it had been accessed 1,116 times. A total of 751 completed surveys were submitted, with 166 respondents indicating interest in participating in follow-up interviews.

A discussion guide was developed by UMN and DLI to support the semi-structured interviews and group discussions. The guide was designed to elicit detailed information about PTSD claim experiences from the perspectives of different stakeholders. The guide focused on treatment access, interactions with other parties (such as insurers, employers, attorneys and employees), return-to-work challenges, claim handling challenges and perceived legal or financial barriers.

Interview participant selection followed a standardized protocol for invitation, scheduling and follow-up. Survey respondents who expressed interest in interviews were stratified by occupational group, with additional stratification among workers based on presumption status. Participants were randomly selected within each stratum to ensure balanced representation. In parallel, UMN and DLI jointly identified additional key stakeholders and stakeholder organizations to invite to either one-on-one interviews or group discussions.

Group discussions were conducted between Feb. 19 and 21, 2025. Invitations were sent to 22 medical professionals, 14 insurers and eight legal professionals. Among those invited, three medical professionals, seven insurers and seven legal professionals participated. Invitees unable to attend their scheduled session were offered the opportunity to participate in a one-on-one interview and five health care providers accepted.

One-on-one interviews took place from Feb. 9 to March 11, 2025, and included workers (both presumption and non-presumption), employers, union and advocacy representatives, and retirement system administrators. For cases in which individuals identified with multiple stakeholder groups, interviews were conducted as scheduled and overlapping roles were documented.

Thematic coding of all interviews and discussions was conducted manually by trained researchers using both deductive and inductive approaches. Coding discrepancies were resolved by team consensus. Data were triangulated across sources to identify consistent themes, stakeholder-specific insights and broader systemic issues. While findings from group discussions were synthesized separately, they were integrated with interview data during analysis to capture macro-level policy and administrative patterns.

The synthesis of findings from stakeholder engagement informed a discussion of policy implications to improve the PTSD claim process, enhance return-to-work support and strengthen the mental health system's responsiveness to the needs of Minnesota's workers.

2.3.4 Evidence-based approaches for PTSD screening and treatment (Section 7)

Two systematic literature reviews were conducted to identify evidence-based treatments and validated screening tools for PTSD among workers. The first review focused on treatments demonstrating efficacy in reducing PTSD symptoms, while the second review examined screening strategies applicable to worker populations. Both reviews were conducted in January 2024 by a research librarian at the University of Minnesota using Medline and PsycInfo. Searches were restricted to English-language studies conducted in the United States.

For the treatment review, an umbrella review approach was used to identify systematic reviews and meta-analyses reporting PTSD outcomes. A total of 754 articles were identified; after removal of 148 duplicates, 606 articles underwent abstract screening by two trained social work reviewers based on predefined eligibility criteria. Seventy-nine articles were selected for full-text review and 64 were ultimately included in the final analysis. Two coders independently reviewed the articles and extracted relevant data elements, including publication information, study design, population characteristics, intervention descriptions, control conditions, outcome measures and main findings. Coding accuracy was reviewed by study investigators. Treatments were categorized by type and studies specific to worker populations were analyzed separately.

For the screening review, parallel search strategies focusing on early intervention, screening tools, PTSD and worker populations (for example, emergency responders, first responders) were used. A total of 136 articles were identified; after removing 23 duplicates, 113 articles underwent abstract screening. Fifty-three articles were selected for full-text review and 39 articles were eligible for inclusion, with two additional articles identified during data abstraction, yielding a total of 41 articles. Two coders independently abstracted study design, population characteristics, screening instruments, processes, positive PTSD screen rates and demographic data. Because of the large proportion of studies examining workers affected by the World Trade Center attacks, articles were grouped based on whether they involved World Trade Center worker cohorts. Specifically, a health screening program (including screening for trauma symptoms) was created for workers involved in the rescue and recovery of the 9/11 attacks at the World Trade Center. Given the uniqueness of this screening program, articles stemming from the World Trade Center cohorts were reviewed separately. Findings related to screening measures, screening program designs and PTSD prevalence among workers were synthesized thematically.

2.3.5 Effectiveness of PTSD prevention and return-to-work strategies (Section 8)

This analysis focused on identifying and evaluating prevention strategies aimed at reducing PTSD risk among first responders and supporting successful return-to-work outcomes. A systematic literature search was conducted in April 2023 across PubMed, PsycINFO, Scopus, Web of Science and the Cochrane Library. Searches included terms such as “PTSD prevention in first responders,” “peer support for PTSD,” “resilience training for first responders,” “critical incident stress management (CISM),” “occupational stress inoculation training (OSIT),” “PTSD return-to-work programs” and “first responder PTSD reintegration.” Searches were limited to peer-reviewed studies published in English between 2000 and 2023 and conducted in North America.

Eligible studies focused on prevention approaches, reported measurable psychological health or resilience outcomes, or evaluated return-to-work strategies following PTSD diagnosis. In addition to peer-reviewed articles, the review included Minnesota-specific program reports and other institutional reports, such as the Minnesota Department of Public Safety’s critical incident response guidance and evaluation summaries from local peer support programs administered by fire departments and police unions. Data from eligible studies

were synthesized thematically, categorizing prevention and RTW programs into resilience training, phased reintegration and peer support models. Effectiveness was evaluated based on reductions in PTSD symptoms, RTW success rates, participant satisfaction and program cost-effectiveness. Studies were critically appraised using the Joanna Briggs Institute (JBI) Critical Appraisal Checklist, with studies scoring below 70% excluded from final synthesis.

2.4 Roadmap of the report

This report is organized into 12 sections, each structured to build a comprehensive understanding of the current challenges surrounding PTSD claims within Minnesota's workers' compensation system and to propose a path forward grounded in evidence and stakeholder input.

Following this introduction, Section 3 reviews the legal and policy framework governing PTSD claims in Minnesota, including statutory provisions, case law and a comparative analysis of laws adopted in other U.S. states. This section provides essential context for understanding Minnesota's approach relative to other states.

Section 4 presents empirical findings from the analysis of PTSD and other mental injury claims reported to the DLI from 2014 through 2023. This section examines trends in claim volumes, demographic patterns, occupational distributions, claim denial rates, and the duration and outcomes of claims.

Section 5 reviews the findings from a statewide survey examining stakeholder experiences with work-related PTSD in the Minnesota workers' compensation system.

Section 6 summarizes the perspectives of stakeholders gathered through interviews and group discussions, including injured workers, employers, insurers, health care providers and legal professionals. This section highlights the practical experiences, challenges and system gaps identified by participants directly engaged with the claim process.

Section 7 synthesizes evidence from systematic literature reviews regarding best practices for PTSD screening, treatment and return-to-work programs.

Section 8 discusses prevention measures available, including measures to prevent PTSD in high-risk occupations, mental health wellness training programs, integration strategies and the role of employee assistance programs. This section identifies interventions shown to be effective in occupational contexts, particularly among first responders and includes an overview of return-to-work programs for workers living with PTSD.

Section 9 provides a conclusion.

Section 10 provides policy recommendations to improve the experience and outcomes of employees with work-related PTSD, summarizes best practices for screening, prevention and return-to-work and offers additional recommendations for system improvement.

Section 11 discusses the scope and limitations of the study. It outlines the parameters of the analysis, including the populations and timeframes examined, and identifies limitations in data availability and generalizability that should be considered when interpreting the findings.

Section 12 lists all references cited throughout the report, including legal statutes, academic research and administrative documents, to ensure transparency and facilitate further inquiry. It also includes a list of abbreviations and list of Minnesota statutes relevant to workers' compensation.

The appendices contain supplementary materials, such as additional claims data tables, detailed literature review tables, the survey instrument and interview protocols.

This structure is intended to provide a logical and coherent progression from background context, through analysis and findings, to practical recommendations for improving the workers' compensation claim experiences of Minnesotans with work-related PTSD so they get the care and support needed for successful outcomes.

3. Legal and policy framework for PTSD claims

3.1 Overview of the workers' compensation system

3.1.1 What is workers' compensation?

Workers' compensation is a no-fault insurance system that provides benefits to employees who sustain injuries or illnesses arising out of and in the course of employment (Minn. Stat. § 176.011, subds.15 (a) and 16). In Minnesota, the system is governed by the Minnesota Workers' Compensation Act (Minn. Stat. § 176.001). Benefits may include medical care, vocational rehabilitation services, partial wage replacement and payment for permanent impairment (Minn. Stat. §§ 176.135 and 176.101).

With limited exceptions, workers' compensation is the exclusive remedy for work-related injuries, meaning employees generally cannot sue their employers for damages outside the system (Minn. Stat. § 176.031). The law applies to both physical and certain psychological injuries, including PTSD, when specific statutory criteria are met (Minn. Stat. § 176.011, subd. 15).

3.1.2 How do claims progress through the system?

In Minnesota, the workers' compensation claim process begins when an employee reports a work-related injury or illness to their employer or an employer becomes aware of a worker injury. Employers are required to complete a First Report of Injury (FROI)[5] to submit to their workers' compensation insurer.[6] Insurers must report the injury to DLI if the worker has or is expected to have more than three days of disability (Minn. Stat. § 176.231).

The insurer has 14 days from the date the employer is notified or has knowledge of a reportable injury or illness to accept or deny primary liability and begin payment of wage-loss benefits, if applicable (Minn. Stat. § 176.221, subd. 1). If the claim is accepted, the worker receives benefits, including medical care and wage loss. If denied, the employee may petition the Office of Administrative Hearings (OAH)[7] or seek alternative dispute resolution services through DLI or OAH.

Claims can be resolved informally or proceed through litigation, including mediation, settlement conferences or hearings. Throughout the process, workers have the right to legal representation and may access assistance from DLI's Alternative Dispute Resolution (ADR) unit.

A Minnesota workers' compensation claim follows a defined sequence from initial injury to resolution.

- Injury occurs: The worker is injured or develops an occupational illness during the course of employment.

[5]The FROI process is inclusive of work-related injuries and illnesses, but it uses the term "injury" for brevity.
[6]Employers are required to carry workers' compensation insurance or be approved by the Minnesota Department of Commerce to self-insure for workers' compensation. Many self-insured employers contract with third-party administrators for reporting and claims handling. For ease of reading, this section refers only to the responsibilities of an insurer.
[7]Effective Aug. 1, 2025, the Office of Administrative Hearings will be known as the Court of Administrative Hearings. *See* Laws of Minnesota 2025, chapter 39, article 2, section 68.

- Notification: The worker must report the injury to the employer within 14 days of the occurrence of the injury to ensure eligibility, though reports made within 180 days may still be valid under certain conditions (Minn. Stat. § 176.141).
- Employer reporting: Where the worker's claimed disability exceeds three days, the employer completes and provides a FROI to its insurer within 10 days of the first date of disability. The insurer then submits the FROI data to DLI (Minn. Stat. § 176.231).
- Insurer response: Within 14 days of notice to or knowledge by an employer of a reportable injury, the insurer must either accept the claim and begin benefit payments or issue a denial (Minn. Stat. § 176.221, subd. 1).
- Benefit administration: If accepted, the insurer provides medical, vocational rehabilitation and/or wage-loss benefits according to the injury type and severity (Minn. Stat. §§ 176.101 and 176.135).
- Dispute resolution: If liability for the claim is denied, the worker may file a claim petition with OAH to initiate formal litigation. The worker may also request alternative dispute resolution, such as mediation, with DLI or OAH. Some claims begin with the filing of a claim petition.
- Resolution: Claim disputes may be resolved through agreement, mediation or a formal hearing. A compensation judge issues a decision if the dispute proceeds to litigation.
- Closure: The claim concludes when a denial is not contested, benefits end, a settlement or a judicial decision is reached, or the statutory benefit period expires.

3.1.3 What happens when a claim is denied?

If a workers' compensation insurer denies primary liability for a claim, it must notify the employee in writing using the Notice of Insurer's Primary Liability Determination (NOPLD) form and state specific reasons for the denial (Minn. Stat. § 176.221, subd. 1; Minnesota Rules 5220.2570). Denial does not preclude further action. The employee may challenge the decision by filing a claim petition with OAH and may seek mediation through DLI or OAH. DLI also offers assistance through its ADR unit, which facilitates communication between the parties to resolve disputes without a formal hearing. If the primary liability dispute is not resolved informally, the case may proceed to a hearing before a compensation judge, who will issue a binding decision based on submitted evidence. The decision of the workers' compensation judge may be appealed to the Workers' Compensation Court of Appeals (WCCA) and then to the Minnesota Supreme Court.

Claims can be denied for a range of reasons, including untimely injury reporting, lack of medical documentation, lack of work-relatedness or exclusionary criteria such as PTSD resulting from disciplinary action. These reasons must be legally supported and disclosed to the worker at the time of denial. Insurers may later reverse a denial if new evidence supports compensability or the claim may be resolved through a negotiated settlement.

While each workers' compensation claim is evaluated individually, certain reasons for denial occur more frequently than others. The table below summarizes common grounds insurers cite when denying primary liability in Minnesota, along with corresponding statutory or regulatory references. These reasons reflect patterns observed in legal decisions, administrative guidance and insurer practices.

Table. 3.1. Common reasons for workers' compensation claim denial in Minnesota

Reason for denial	Description	Statutory or source reference
Injury not reported on time	Injury not reported within 14 days; late reports may bar compensation unless exceptions apply	Minn. Stat. § 176.141
Injury not work-related	Insurer disputes the injury arose out of and in the course of employment	Minn. Stat. § 176.011, subd. 16
Insufficient medical evidence	Claim lacks documentation or a valid medical diagnosis connecting injury to work	Minn. Stat. § 176.135, subd. 1; Minn. Stat. § 176.011, subd. 15 (d); Minnesota CLE Workers' Compensation Deskbook, Ch. 5 ("Medical Causation")
Pre-existing condition	Insurer attributes symptoms to a prior or unrelated medical issue	Minn. Stat. § 176.101; Minnesota CLE Deskbook, Ch. 6 ("Defenses to Compensability")
No lost time or medical treatment needed	Injury deemed too minor for wage-loss or medical benefits	Minn. Stat. § 176.231, subd. 1
Injury occurred during non-work activity	Employee was not performing job duties at time of incident	Minn. Stat. § 176.011, subd. 16; Minnesota CLE Deskbook, Ch. 3 ("Arising Out of and In the Course of")
PTSD exclusion applies	PTSD caused by statutorily excluded employer actions (for example, discipline, layoff) is not compensable	Minn. Stat. § 176.011, subd. 15(d)–(e)

3.1.4 Clarification about date of injury between physical and psychological injuries

The date of injury is a critical factor in determining eligibility for workers' compensation benefits and the applicable legal standards. Under Minnesota law, the "date of injury" generally refers to the specific day on which the injury occurred or, in the case of occupational diseases or cumulative trauma, the date the condition culminated in disability and the employee first sought medical attention or lost time from work (Minn. Stat. § 176.66, subd. 1; Minn. Stat. § 176.011, subd. 16).

The date of injury also determines the benefits available to the worker and whether a rebuttable presumption is in effect. Disputes may arise when injury symptoms develop over time or are linked to multiple events, in which case courts may evaluate medical records, employment history and expert testimony to establish the compensable date.

For PTSD, the date of injury is arguably the date of diagnosis by a licensed psychologist or psychiatrist, provided the statutory criteria are met (Minn. Stat. § 176.011, subd. 15). The reasoning is that a claim of PTSD cannot be compensable unless the statutory criteria are met for a mental impairment. However, claims are also filed using the date of a traumatic event or the date the employee last worked as the date of injury. There does not seem to be a consensus in practice or court decisions regarding the correct date of injury for PTSD claims. For example, in *Chrz v. Mower County*, 986 N.W.2d 481 (2023) and *Juntunen v. Carlton County*, 982 N.W.2d 729 (2022), the date of diagnosis was used as the date of injury. In contrast, in *Tea v. Ramsey County*, 5 N.W.3d 114

(Minn. 2024), the date of the traumatic incident was considered the date of injury. To date, Minnesota case law has not definitively determined the date of injury for PTSD claims.

3.1.5 What benefits are available?

In Minnesota, injured workers with accepted claims are statutorily entitled to a range of benefits under the Workers' Compensation Act. These benefits are designed to compensate for wage loss, provide medical care, and support recovery and reintegration into the workforce. The six main categories are defined and detailed in *Minnesota's Workers' Compensation System Report*[8] and include the following.

- Medical benefits: Payment for reasonable and necessary medical treatment related to a work injury, including psychological care for PTSD when compensable (Minn. Stat. § 176.135).
- Wage-loss benefits: Compensation for lost income due to temporary or permanent disability, including:
  - temporary total disability (TTD) – when a worker cannot work at all for a finite period of time (Minn. Stat. § 176.101, subd. 1);
  - temporary partial disability (TPD) – when a worker returns to work at reduced hours or wages (Minn. Stat. § 176.101, subd. 2); and
  - permanent total disability (PTD) – when a worker is never able to return to gainful employment (Minn. Stat. § 176.101, subd. 4).
- Benefits for permanent impairment: Permanent partial disability (PPD) is compensation for permanent functional loss based upon a disability schedule (Minn. Stat. § 176.101, subd. 2a). Since 1984, PPD ratings in the workers' compensation system have been assigned as a percentage of disability to the body as a whole. The PPD schedule, established through administrative rulemaking, is used when determining the rating.[9]
- Vocational rehabilitation: Services to help an injured worker return to suitable gainful employment, including retraining if necessary (Minn. Stat. § 176.102, subd. 1(b)).
- Dependency and death benefits: Payments to dependents if the injury results in the worker's death (Minn. Stat. § 176.111).
- Reimbursement and other benefits: Includes mileage, prescription costs and potential penalties for delayed payments (Minn. Stat. §§ 176.135, 176.221, subd. 3).

3.2 Minnesota's legal framework for PTSD in the workers' compensation system

Prior to 2013, Minnesota case law held that work-related psychological injuries were only compensable if the psychological injury was the result or cause of a work-related physical injury.[10] In other words, work-related

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[8] *2024 Workers' Compensation System Report*, dli.mn.gov/sites/default/files/pdf/wcfact24.pdf.

[9] Many claim petitions for PTSD that list a PPD rating ask for a 20% rating. There is no definitive PPD rating or guidance for rating PTSD, though under Minn. Stat. § 176.105 a functional loss (for which there is objective medical evidence) that is not rated by the schedule must use the closest applicable category for the most similar condition to rate the loss. This is often referred to as a *Weber* rating. (*Weber v. City of Inver Grove Heights*, 461 N.W.2d 918, 43 W.C.D. 471 (Minn. 1990)). If a PPD rating was needed under the current schedule, it would likely be under Minn. R. 5223.0060, subpart 8. However, the data further show very few workers with a PTSD injury received PPD benefits (other than via a disputed settlement payment).

[10] *See, e.g., Lockwood v. Independent School Dist. No. 877*, 312 N.W.2d 924 (1981) (*citing Hartman v. Cold Spring Granite Co.*, 67 N.W.2d 656 (1954) and *Aker v. State, Dept. of Natural Resources*, 282 N.W.2d 533 (Minn. 1979)).

psychological injuries that were not produced by or the cause of a physical injury were generally not compensable.[11]

In *Lockwood v. Independent School Dist. No. 877*, 312 N.W.2d 924 (1981), the Minnesota Supreme Court opined that mental health injuries or illnesses are not compensable without an accompanying physical injury, absent a specific directive from the Minnesota Legislature (stating that if the Legislature "wishes to extend workers' compensation coverage to mental disability caused by work-related mental stress without physical trauma, it is free to articulate that intent clearly").

3.2.1 PTSD as a compensable work-related injury

In 2013, the Minnesota Legislature amended the Workers' Compensation Act by making PTSD the only compensable stand-alone psychological injury in the Minnesota workers' compensation system (Minn. Session Laws, Chapter 70, Article 2, §§ 1 and 2). For injuries occurring on or after Oct. 1, 2013, work-related PTSD is compensable without an accompanying physical injury, provided the PTSD: (1) arose out of and in the course of employment; (2) was diagnosed by a licensed psychiatrist or psychologist according to the most recently published edition of the DSM; and (3) did not result from a disciplinary action, work evaluation, job transfer, layoff, demotion, promotion, termination, retirement or similar action taken in good faith by the employer (Minn. Stat. § 176.011, subd. 15 (d) and (e)).

To date, PTSD remains the only stand-alone mental health injury that is compensable under Minnesota law. Claims for other work-related psychological injuries must be accompanied by a physical injury to be compensable. In 2022, likely PTSD claims accounted for approximately 1% of all non-COVID-19 claims reported to DLI (PTSD trends in Minnesota's Workers' Compensation System, 2023).

3.2.2 PTSD treatment parameters

The Minnesota Workers' Compensation Act requires employers to provide reasonable medical care for injured workers with a compensable work-related injury (Minn. Stat. § 176.135, subd. 1). Treatments for injured workers — regardless of the type of injury — must be medically necessary and reasonable (Minn. R. part 5221.6050, subp. 1, paragraph A). Additionally, Minnesota has treatment parameters, developed with recommendations from the workers' compensation Medical Services Review Board, that apply to specific injuries, methodologies or areas of the body to ensure treatments are appropriate and reasonable.

In 2018, Minnesota began the process of developing treatment parameters for work-related PTSD claims, in part to regulate costs and limit experimental treatments. As part of the development process, the Medical Services Review Board created a PTSD workgroup to evaluate the necessity, efficacy and cost of PTSD treatments to help recommend PTSD treatment parameter language.

The PTSD treatment parameters were adopted in 2020. (*See* Minn. R. part 5221.6700). The parameters provide for the types of treatments and medications that are reasonable and necessary treatments for PTSD when primary liability has been admitted or adjudicated. Minnesota allows for a departure from the treatment

[11]Work-related psychological or mental health injuries are classified into three separate categories: mental-physical (where mental stimulus results in a physical injury); physical-mental (where physical stimulus results in a mental injury); and mental-mental (where mental stimulus results in a mental injury). The first two categories are generally compensable. PTSD is the only mental-mental injury that is compensable in Minnesota.

parameters in certain situations; however, in general, medical treatments for PTSD must be in accordance with the PTSD treatment parameters.[12] Insurers are not obligated to pay for treatments outside of the parameters, unless a compensation judge, mediator or arbitrator orders otherwise. The PTSD treatment parameters are further described in section 7.3.2.

3.2.3 Rebuttable presumption for PTSD

In 2018, the Minnesota Legislature created a rebuttable presumption for PTSD claims made by certain classes of employees, primarily first responders. This rebuttable presumption became effective for workers with a date of injury on or after Jan. 1, 2019. In a typical workers' compensation case, the injured worker must prove by a preponderance of the evidence that the injury is work-related. However, for workers who are subject to a rebuttable presumption, it is presumed their injury is work-related.[13]

The PTSD rebuttable presumption applies to workers who, before the date of disablement, were employed on active duty as: a licensed police officer; a firefighter; a paramedic; an emergency medical technician; a licensed nurse employed to provide emergency medical services outside of a medical facility; a public safety dispatcher; a correctional officer or security counselor employed by the state or a political subdivision at a corrections, detention or secure treatment facility; a sheriff or full-time deputy sheriff of any county; or a member of the Minnesota State Patrol (Minn. Stat. § 176.011, subd. 15 (e)).

For the presumption to apply, the worker must be diagnosed with PTSD by a licensed psychiatrist or psychologist according to the most recently published edition of the DSM. The worker must not have been previously diagnosed with PTSD. The PTSD also cannot be the result of disciplinary action from the employer.[14] Employers can challenge (or rebut) the presumption the injury was work-related by bringing forth substantial factors showing the worker's PTSD was not caused by his or her employment.

The rebuttable presumption is intended to reduce the burden on first responders to prove the PTSD injury was work-related. However, similar to other jurisdictions in the United States, stakeholders have voiced concerns about the interpretation and impact of the rebuttable presumption. The increased number of PTSD claims in the workers' compensation system following the events of 2020 has prompted public discussion regarding how Minnesota should handle PTSD claims in the workers' compensation system. Specifically, 2020 marked the start of the COVID-19 pandemic and the murder of George Floyd, leading to civil unrest in Minnesota and across the country.

3.2.4 Minnesota case law about work-related PTSD

Due to the unique treatment of PTSD as the only stand-alone compensable psychological injury in Minnesota, there have been several significant legal cases and issues concerning PTSD in the workers' compensation system that have come up in recent years.

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[12]Departures from the treatment parameters may be appropriate with prior notice and in certain situations. Minn. R. 5221.6050, subp. 8.

[13]In addition to the PTSD presumption, Minnesota law provides for several presumptions for certain classes of workers, such as myocarditis, coronary sclerosis, pneumonia and cancer. *See* Minn. Stat. § 176.011, subd. 15 (b) and (c).

[14]Minn. Stat. § 176.011, subd. 15 (e) (*stating* "the mental impairment is not considered an occupational disease if it results from a disciplinary action, work evaluation, job transfer, layoff, demotion, promotion, termination, retirement or similar action taken in good faith by the employer").

3.2.5 Diagnosis of PTSD for presumption workers

In *Juntunen v. Carlton County,* 982 N.W.2d 729 (2022), the Minnesota Supreme Court examined when the PTSD rebuttable presumption applies during the workers' compensation claim process. The employee in *Juntunen* was employed as a deputy sheriff when he received a diagnosis of PTSD in 2019. The employer denied his claim for workers' compensation and sought its own expert opinion about whether the employee had PTSD. The compensation judge reviewed the employee's and employer's expert opinions concerning whether the employee had a diagnosis of PTSD and, ultimately, found the employer's expert opinion to be more credible. The case was eventually appealed to the Minnesota Supreme Court, which disagreed with the compensation judge's ruling, stating "that an employee need only present a diagnosis for the presumption to apply, not that the diagnosis is determined by a compensation judge to be more credible or persuasive than any competing diagnosis offered by an employer." *Juntunen*, 982 N.W.2d 729 at 740 (Minn. 2022). In other words, for an employee in the listed presumption occupations, the presumption applies at the time the employee is diagnosed with PTSD. There is no requirement the diagnosis be compared to a competing diagnosis obtained by the employer for the presumption to apply. However, the employer may still rebut a diagnosis by "demonstrate[ing] that the employee's diagnosis was invalid or not credible." *Juntunen*, 982 N.W.2d 729 at 743 (Minn. 2022).

3.2.6 Competing experts for non-presumption workers

The *Juntunen* case provides some framework for assessing multiple expert opinions when a worker is covered under the presumption. However, Minnesota case law also discusses how workers' compensation judges should address competing expert opinions for workers who are not subject to the rebuttable presumption.

In a typical workers' compensation case, "a compensation judge has the discretion as the trier of fact to choose between competing and conflicting medical experts' reports and opinions." (*Gianotti v. Indep. Sch. Dist. 152*, 889 N.W.2d 796, 803 (Minn. 2017)). In *Smith v. Carver County*, No. WC18-6180 (Minn. WCCA Jan. 4, 2019), the Workers' Compensation Court of Appeals took a different approach by analyzing whether each expert's opinion conformed with the DSM-5, instead of relying on the compensation judge's determination of which opinion was more credible. WCCA reasoned the wording of Minnesota Statutes section 176.011, subd. 15 (d), was unique and required the compensation judge to apply the DSM-5 to the expert opinions. However, the Minnesota Supreme Court reversed the WCCA decision, stating the WCCA decision would require "the compensation judge [to] lay each expert's report on the desk next to the DSM-5 and assess whether the medical professional's opinion conformed with the precise wording of the DSM-5 as the compensation judge interprets those words"[15] (*Smith*, 931 N.W.2d 390 at 397 (Minn. 2019)). Instead, the court held that the Minnesota statute "does nothing more than require that a diagnosis of PTSD in a workers' compensation case be done by a licensed psychiatrist or psychologist based on the latest version of the DSM" (*Smith*, 931 N.W.2d 390 at 398 (Minn. 2019)).

This decision was later revisited and upheld in *Tea v. Ramsey County*, 5 N.W.3d 114 (Minn. 2024), with the court ruling "a compensation judge may determine that a professional diagnosis of PTSD that the expert claims is supported by the DSM is, as a matter of fact, inconsistent with the DSM. But that factual finding must be in relation to evidence offered by another medical professional — not based upon the judge's own application of the DSM criteria to the employee's symptoms" (*Tea*, 5 N.W.3d 114 at 122 (Minn. 2024)).

[15]The employee in *Smith* was injured in 2016, several years before the rebuttable presumption was enacted, so the presumption did not apply to the employee.

The takeaways from these cases are that, for non-presumption employees, a compensation judge can compare competing medical opinions as long as their assessment does not involve their own application of the DSM-5 criteria to the injured worker.

3.2.7 Consequential injuries arising from PTSD

There have been multiple cases addressing consequential injuries arising from an initial diagnosis of PTSD by an injured worker. Under Minnesota workers' compensation law, when a primary injury is compensable, the general rule is that every natural consequence that flows from the injury is compensable. However, there have been some disputes about whether consequential mental injuries, which have arisen as a result of PTSD, are compensable.

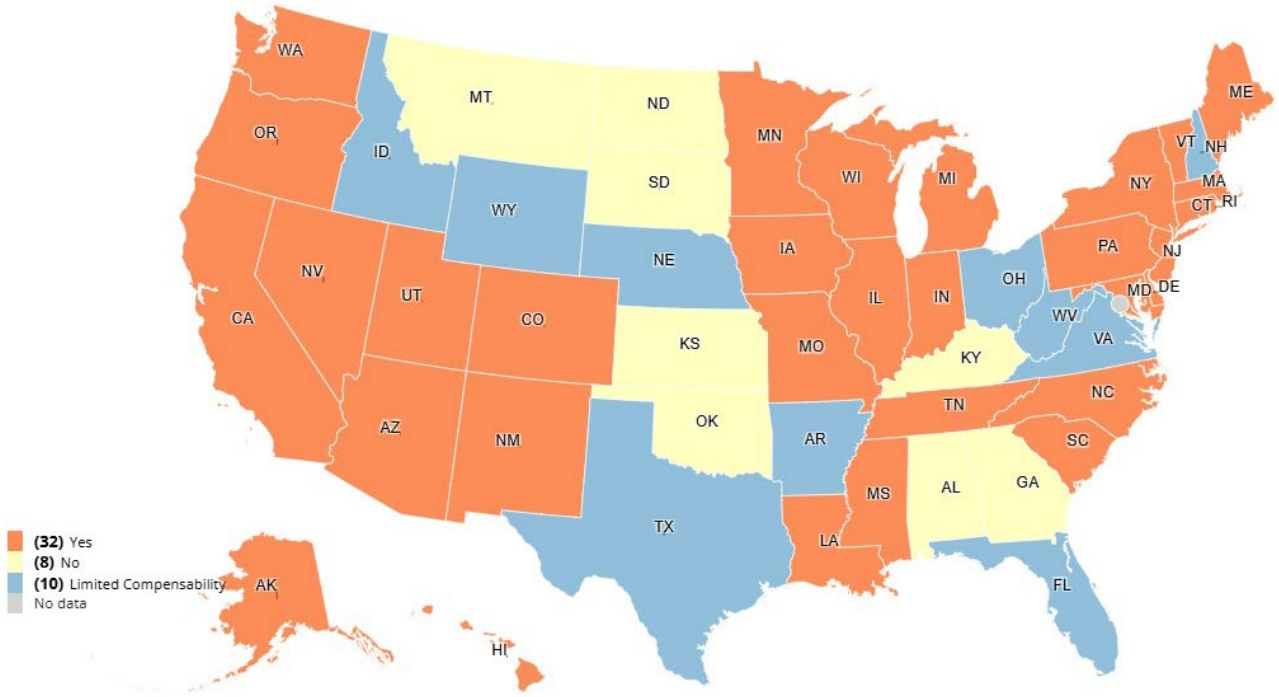
In *Peterson v. City of Minneapolis*, No. WC23-6527 (Minn. WCCA June 28, 2024), the injured worker was a police officer when he was diagnosed with PTSD. After receiving treatment, his symptoms no longer met the criteria of PTSD according to the most recently published edition of the DSM. However, Peterson was also diagnosed with other specified trauma disorder as a result of his PTSD. The Workers' Compensation Court of Appeals examined whether consequential mental injuries arising from a diagnosis of PTSD are compensable under Minnesota law. WCCA held that "once an employee has established a compensable PTSD injury, any mental health condition substantially caused by, aggravated by, or accelerated by, the PTSD diagnosis, is also compensable as a consequential injury" (*Peterson*, No. WC23-6527 (Minn. WCCA June 28, 2024)).

On appeal, the Minnesota Supreme Court found that because Peterson had a present diagnosis of PTSD, the issue of compensability of consequential OSTD became moot (*Peterson v. City of Minneapolis*, No. A-24-1205 (Minn. July 16, 2025)). The Court held that given "the WCCA's decision that Peterson was entitled to compensation benefits for a present diagnosis of PTSD, a decision as to whether Peterson's OSTD diagnosis was a compensable mental impairment was no longer necessary. Thus, the issue was moot" (*Peterson*, No. A-24-1205 (Minn. July 16, 2025)). The Court went on to say: "Because the WCCA erred in addressing the question of whether Peterson was entitled to workers' compensation benefits for OSTD as a consequential mental injury, we reverse the WCCA's decision as to this issue. Additionally, we reverse the WCCA's holding that OSTD is a compensable consequential injury of PTSD" (*Peterson*, No. A-24-1205 (Minn. July 16, 2025)). Therefore, the issue of compensability of consequential mental injuries arising from PTSD remains a question.

3.3 Comparative analysis: PTSD compensability and definitions

The compensability of work-related PTSD is governed by state law. Each state has its own rules and regulations for workers' compensation eligibility, benefits and treatments. Currently, there are 42 states in which PTSD is at least partially compensable as a stand-alone injury within the workers' compensation system. In 10 of these states, compensability is limited based on occupation (Florida, Idaho, Nebraska, New Hampshire, Texas, Virginia, West Virginia and Wyoming) or limited to specific situations only, such as workers who are victims of a crime (Arkansas) or workers who are victims of sexual assault (Ohio) in which the claimant was forced by threat of physical harm to engage or participate.

Figure 3.1 States where PTSD is compensable without a physical injury



3.3.1 Eligibility based on profession or job category

In most states in which stand-alone PTSD is a compensable work-related injury (including Minnesota), workers in any profession are eligible to make a claim for work-related PTSD. While workers may have to fulfill other requirements to be eligible for benefits, employment within a certain profession is not a requirement.

In eight states, workers must be employed within a specific job category for PTSD to be compensable as a work-related injury. This does not necessarily mean these states have a rebuttable presumption for PTSD (which is discussed in section 3.4). Rather, the following states are those where PTSD is a compensable injury for only certain professions.

Table 3.2. States with specific worker eligibility for compensable work-related PTSD

State	Class of eligible workers
Florida	Law enforcement officers, firefighters, paramedics, emergency medical technicians, and correctional officers – Florida Statutes §§ 112.1815 and 112.18155
Idaho	Peace officers, firefighters, volunteer emergency responders, emergency medical service providers certified by the department of health and welfare, ambulance-based clinicians and emergency communications officers – Idaho Code Annotated § 72-451 (6)(b)
Nebraska	First responders (defined as sheriffs, deputy sheriffs, police officers, officers of the Nebraska State Patrol, volunteer or paid firefighters, and volunteer or paid licensed advanced emergency medical technicians, community paramedics, critical care paramedics, emergency medical responders, emergency medical technicians and paramedics who provide medical care to prevent loss of life or aggravation of physiological or psychological illness or injury), frontline state employees (defined as employees of the

State	Class of eligible workers
	Department of Correctional Services or the Department of Health and Human Services whose duties involve regular and direct interaction with high-risk individuals) and county correctional officers – Nebraska Revised Statutes Annotated § 48-101.01(8)(a)-(c).
New Hampshire	Emergency response or public safety workers (defined as: call, volunteer or regular firefighters; law enforcement officers; certified county corrections officers; emergency communication dispatchers; and rescue or ambulance workers, including ambulance service, emergency medical personnel, first responder service and volunteer personnel) – New Hampshire Revised Statutes Annotated § 281-A:2, V-C
Texas	First responders (defined as peace officers, emergency care attendants, emergency medical technicians, emergency medical technician-intermediate, emergency medical technician-paramedics, licensed paramedics and firefighters) – Texas Statutes § 504.019 (1)(A)
Virginia	Law enforcement officers (defined as members of the State Police Officers' Retirement System, members of a county, city or town police department, sheriffs or deputy sheriffs, hazardous materials officers for the Department of Emergency Management, city sergeants or deputy city sergeants of the city of Richmond, Virginia Marine Police officers, conservation police officers, Capitol Police officer, special agents of the Virginia Alcoholic Beverage Control Authority, police force officers for the Metropolitan Washington Airports Authority, Metropolitan Washington Airports Authority, Virginia Port Authority and Norfolk Airport Authority, and campus police officers employed by any public institution of higher education) – Virginia Code Annotated § 65.2-107
West Virginia	First responders (defined as law enforcement officers, firefighters, emergency medical technicians, paramedics and emergency dispatchers) –West Virginia Code § 23-4-1f (b)(1).
Wyoming	First responders (defined as peace officers, volunteer or paid firefighters, search and rescue personnel and ambulance personnel) – Wyoming Statutes § 27-14-102 (a) (xxxi)

The majority of states, including Minnesota, permit all covered workers with an eligible claim for PTSD to qualify for benefits.

3.3.2 Terminology and diagnostic requirements

There are several jurisdictional differences in the statutory terminology and diagnostic requirements for PTSD. In many states, the term PTSD is not explicitly used in statute; instead, work-related PTSD falls under the umbrella of a compensable mental injury or condition. In 16 states, including Minnesota, the term post-traumatic stress disorder or PTSD is directly used in state statute. Three states (Connecticut, Idaho and Louisiana) use the term post-traumatic stress *injury* instead of PTSD.

There are also jurisdictional differences about whether a diagnosis of PTSD must be made according to the DSM. Minnesota law requires work-related PTSD to be diagnosed according to the most recently published edition of the DSM, which is currently the DSM-5-TR. Other states that require PTSD to be diagnosed using some version of the DSM include Arkansas, California, Florida, Idaho, Louisiana, Missouri, Oregon, Texas, Virginia, Washington, West Virginia, Wisconsin and Wyoming. The remaining states do not have an explicit requirement to make a PTSD diagnosis according to the DSM.

Finally, state statutes vary as to who can diagnose PTSD for workers' compensation claims. In Minnesota, only licensed psychiatrists or psychologists can diagnose PTSD for purposes of a workers' compensation claim. Other states allow additional professionals to diagnose PTSD. For example, Nebraska permits licensed independent mental health practitioners and professional counselors to diagnose PTSD. Wyoming includes psychiatric mental health nurse practitioners on its list of professionals that can diagnose PTSD.

The following table examines the diagnostic terms and criteria for PTSD as defined in statute.

Table 3.3. Diagnostic terms and criteria for PTSD by states where stand-alone PTSD is compensable[16]

State	Terms used to describe PTSD	DSM requirement	Who can diagnose
Alaska	Mental stress (no reference to PTSD)	No	Not stated
Arizona	Mental injury, illness (no refence to PTSD)	No	Not stated
Arkansas	Mental injury or illness (no reference to PTSD)	Diagnosis must meet criteria in most current issue of DSM	Licensed psychiatrist or psychologist
California	Non-presumption workers: psychiatric injury Presumption workers: post-traumatic stress disorder	Non-presumption workers: diagnosis must meet the terminology and criteria of the DSM-3 or the terminology and diagnostic criteria of other psychiatric diagnostic manuals generally approved and accepted nationally by practitioners in the field of psychiatric medicine Presumption workers: diagnosis must be made according to the most recent edition of the DSM	Psychiatrist or psychologist
Colorado	Post-traumatic stress disorder	No	Licensed psychiatrist or psychologist
Connecticut	Post-traumatic stress injury	No	Mental health professional
Delaware	Mental injury (no reference to PTSD)	No	Not stated
Florida	Post-traumatic stress disorder	Diagnosis according to DSM-5	Licensed psychiatrist who is authorized treating physician
Hawaii	Mental stress (no reference to PTSD)	No	Not stated
Idaho	Post-traumatic stress injury	Diagnosis according to DSM-5 or any successor manual promulgated by the American Psychiatric Association	Psychologist, a psychiatrist duly licensed to practice in the jurisdiction where treatment is rendered, or a counselor

[16]In Illinois, Indiana, Iowa, Maryland, Mississippi, New Jersey, North Carolina and Pennsylvania, compensability of PTSD is derived by case law. Therefore, these states were not included in this table.

State	Terms used to describe PTSD	DSM requirement	Who can diagnose
			trained in post-traumatic stress injury
Louisiana	Non-presumption workers: mental injury Presumption workers: post-traumatic stress injury	Diagnosis according to the most current edition of the DSM	Licensed psychiatrist or psychologist
Maine	Non-presumption workers: mental injury caused by mental stress Presumption workers: post-traumatic stress disorder	No	Licensed allopathic physician or osteopathic physician with a specialization in psychiatry, or licensed psychologist
Massachusetts	Mental or emotional disabilities (no reference to PTSD)	No	Not stated
Michigan	Mental disabilities	No	Not stated
Minnesota	Post-traumatic stress disorder	Diagnosis according to most recently published edition of the DSM	Licensed psychiatrist or psychologist
Missouri	Non-presumption workers: mental injury (no reference to PTSD) Presumption workers: post-traumatic stress disorder	Non-presumption: no Presumption: diagnosis according to DSM-5	Authorized treating physician
Nebraska	Post-traumatic stress disorder	No	Licensed physician, licensed psychologist, licensed independent mental health practitioner or professional counselor
Nevada	Mental injury (no reference to PTSD)	No	Not stated, but statute requires psychiatric evidence
New Hampshire	Post-traumatic stress disorder	No	Not stated
New Mexico	Non-presumption workers: primary mental impairment Presumption workers: post-traumatic stress disorder	No	Physician or psychologist

State	Terms used to describe PTSD	DSM requirement	Who can diagnose
New York	Mental injury (no reference to PTSD)	No	Not stated
Ohio	Psychiatric conditions	Not stated	Not stated
Oregon	Non-presumption workers: mental or emotional disorder (no reference to PTSD) Presumption workers: post-traumatic stress disorder	Presumption workers only: diagnosis according to DSM-5	Presumption workers only: licensed psychiatrist or psychologist
Rhode Island	Mental injury (no reference to PTSD)	No	Not stated
South Carolina	Mental injury (no reference to PTSD)	No	Not stated
Tennessee	Mental injury (no reference to PTSD)	No	Physician
Texas	Post-traumatic stress disorder	Diagnosis according to DSM-5 or a later edition adopted by the commissioner of workers' compensation	Not stated
Utah	Mental stress	No	Not stated
Vermont	Non-presumption workers: mental condition (no reference to PTSD) Presumption: post-traumatic stress disorder	No	Licensed mental health professional (including physician, nurse with recognized psychiatric specialties, psychologist, clinical social worker, mental health counselor, or alcohol or drug abuse counselor)
Virginia	Post-traumatic stress disorder	Diagnosis according to most recent edition of the DSM	Board-certified psychiatrist or a licensed psychologist who has experience diagnosing and treating post-traumatic stress disorder
Washington	Post-traumatic stress disorder	Diagnosis according to DSM-5 or in a later edition as adopted by the department	Psychologist or psychiatrist
West Virginia	Post-traumatic stress disorder	Diagnosis according to DSM-5 or a later edition as adopted by rule of the insurance commissioner	Licensed psychiatrist, licensed psychologist, licensed professional counselor, licensed marriage and family therapist, or licensed social worker; and, as of July 11,

State	Terms used to describe PTSD	DSM requirement	Who can diagnose
			2025, certified mental health nurse practitioner or certified psychiatric physician assistant
Wisconsin	All workers: mental harm (no reference to PTSD) For certain occupations: post-traumatic stress disorder	Diagnosis according to DSM-5	Licensed psychiatrist or psychologist
Wyoming	Mental injury (no reference to PTSD)	Diagnosis according to most recently published edition of DSM	Licensed psychiatrist, licensed clinical psychologist or psychiatric mental health nurse practitioner

Minnesota's terminology and diagnostic requirements are not unique in comparison to other states. The term post-traumatic stress disorder is most frequently used by states that directly include guidance about PTSD. It is possible the states that use the term post-traumatic stress injury employ the word injury instead of disorder to minimize the stigma for workers with PTSD. The term injury also comports with the typical phrasing in workers' compensation. However, more research is needed to determine whether the terminology used for PTSD in workers' compensation statutes has any effect on workers or PTSD claims.

Minnesota's diagnostic requirement of using the most recently published version of the DSM is also consistent with many other states. From a practical standpoint, requiring diagnosis based on the most recently published version of the DSM allows Minnesota to follow the most current and up-to-date diagnostic criteria without requiring a statutory amendment each time a new version of the DSM is published.

Similar to other jurisdictions, Minnesota only permits licensed psychiatrists or psychologists to diagnose PTSD for a workers' compensation claim. In many states, there is no specific statutory requirement for diagnosis. Other states, including Connecticut, Idaho, Maine, Missouri, Nebraska, Tennessee, Vermont, West Virginia and Wyoming, have an expanded list of qualified practitioners who can diagnose PTSD.

Under current Minnesota law, there are approximately 4,925 licensed psychiatrists and psychologists. If Minnesota were to expand the list of qualified practitioners to include master's level clinicians, the number of qualified practitioners who could diagnose PTSD increases to approximately 19,463[17] mental health professionals. This may expedite the PTSD claim process for workers who are unable to treat with a licensed psychiatrist or psychologist. However, more data are needed to determine the practical effect of such an expansion.

3.3.3 PTSD as a compensable injury when a sudden event or unusual stress occurs

In some states, PTSD is a compensable stand-alone injury only when a specific event or extraordinary stress occurs in the course of employment. Other states (including Minnesota) do not require a specific event to occur; instead, compensability is predicated upon meeting the diagnostic and/or qualifying criteria in state statute.

[17]See Section 7 for additional information about qualified practitioners in Minnesota.

There are 16 states that require a worker to witness or experience a qualifying event or unusual stress. In some states, such as Alaska, Arizona and Maine, compensable stand-alone PTSD requires unusual or extraordinary stress. In other states, diagnosis of PTSD is predicated on a specific qualifying event. For example, in Colorado, the worker must witness a death (or the immediate aftermath of a death) of one or more people due to a violent event or be the subject of serious bodily injury or risk of death from another using deadly force.

Table 3.4. States requiring a sudden event or unusual stress to be compensable for a work-related PTSD injury

State	Sudden event or unusual stress requirement
Alaska	Mental injuries (including PTSD) caused by mental stress must be caused by extraordinary and unusual work stress in comparison to pressures and tensions experienced by individuals in a comparable work environment.
Arizona	Mental injuries (including PTSD) must be caused by unexpected, unusual or extraordinary stress related to the employment.
Colorado	Mental impairment (including PTSD) requires the worker to experience a psychologically traumatic event, which is defined as either (1) an event that is generally outside of a worker's usual experience and would evoke significant symptoms of distress in a worker in similar circumstances or (2) an event that is within a worker's usual experience when the worker witnesses a death or violent event, repeatedly witnesses serious bodily injury of another person or persons, experiences seriously bodily injury him/herself or is the victim of an attempted serious bodily injury or attempted death.
Florida	PTSD is compensable only for first responders when they witness specific events, including: treating an injured minor who subsequently dies or directly witnessing the death of a minor or deceased minor; witnessing a death, suicide or decedent with grievous bodily harm that shocks the conscience; witnessing a homicide; or witnessing a grievous bodily injury that later resulted in death.
Louisiana	Mental injuries (such as PTSD) require sudden, unexpected and extraordinary stress related to the employment.
Maine	Mental injuries (including PTSD) require work stress that was extraordinary and unusual in comparison to pressures and tensions experienced by the average employee.
Missouri	For all workers, mental injuries (including PTSD) require extraordinary and unusual stress. For first responders, PTSD requires the worker to: witness the death of a minor or witness a deceased minor; witness injuries of a serious physical nature, including injuries that result in death; witness a death due to serious physical injury; treat or transport an injured person who later dies; or be involved in an event that caused or may have caused serious injury or harm to the first responder or had the potential to cause the death of the first responder.
Nevada	Mental injuries (including PTSD) must be caused by extreme stress in time of danger resulting from an event occurring during the course of employment.

State	Sudden event or unusual stress requirement
New Mexico	Mental impairment (including PTSD) requires a psychologically traumatic event that is generally outside of a worker's usual experience and such event would cause significant symptoms of distress in a worker in similar circumstances.
Oregon	Mental disorders (including PTSD) require conditions in worker's employment that are outside of conditions generally inherent in every working situation.
Rhode Island	Mental injuries (including PTSD) must result from a situation of greater dimensions than the day-to-day emotional strain and tension that all employees encounter daily without serious mental injury.
South Carolina	Mental injuries or illnesses (including PTSD) require employment conditions that are extraordinary and unusual in comparison to the normal conditions of the particular employment.
Tennessee	Mental injuries (including PTSD) require sudden or unusual stimulus resulting from an identifiable work-related event.
Utah	Mental injuries (including PTSD) must be caused by extraordinary mental stress resulting from a sudden stimulus arising out of employment.
Vermont	Mental injuries (including PTSD) must be caused by work-related event or work-related stress that was extraordinary and unusual in comparison to pressures and tensions experienced by the average employee across all occupations.
Washington	For all workers, mental conditions (including PTSD) require the worker to experience, witness or have extreme exposure to details of a single traumatic event, which includes actual or threatened death, actual or threatened physical assault, actual or threatened sexual assault and life-threatening traumatic injury. For certain occupations, such as first responders, cumulative traumatic events are also compensable.

Requiring qualifying events for stand-alone PTSD claims may lead to reduced ambiguity regarding compensability of the claims, since the type of event a worker must experience is described in statute. These statutes provide an objective basis for approving or denying claims, since they are based on specific events.

However, states like Minnesota that rely on a PTSD diagnosis allow workers greater flexibility in making claims since they are not required to experience a specific event. In addition, in some states, the specific events required are more restrictive than the diagnostic criteria in the DSM-5-TR. For example, Florida requires workers to directly witness specific traumatic events, such as a serious injury or death. However, in the DSM-5-TR, an individual is required to only have exposure to a traumatic event, which includes learning about the occurrence of a traumatic event. As a result, states that require specific events are more limiting to workers than states that rely upon a diagnosis of PTSD pursuant to the DSM-5-TR.

3.4 Rebuttable presumptions for PTSD

Ordinarily, an injured worker has the burden of proof to demonstrate their injury arose out of or in the course of employment. However, some states have adopted rebuttable presumptions for certain types of injuries and

occupations. Under a rebuttable presumption, it is assumed the specific injury is work-related. In other words, qualified injured workers subject to a presumption no longer need to prove the injury was caused by their employment.

There are two unique factors to rebuttable presumptions. First, employers are able to dispute (or rebut) the presumption by presenting evidence the injury did not occur in the course of employment. Upon a successful rebuttal of a presumption, the burden of proving work-relatedness falls back upon the worker. Second, rebuttable presumptions are generally limited to specific occupations that may have a greater risk of experiencing a particular type of injury due to the nature of the employment.

Rebuttable presumptions are not unique to PTSD. There are many types of presumptions in workers' compensation law in Minnesota alone, including cancer and cardiovascular conditions. (Minn. Stat. § 176.011, subd. 15 (b) and (c)). The list of occupations that qualify for each rebuttable presumption depends on the particular injury for which the presumption applies.

The efficacy and practical application of presumption statutes has been a source of increasing public discourse during the past several years. Many states have proposed legislation to expand existing PTSD rebuttable presumptions or further refine presumption law. Currently, nine states — including Minnesota — have a rebuttable presumption for work-related PTSD. (Rothkin, 2025, Workers' Compensation Research Institute). However, the occupations covered and legal standards to overcome the presumption vary by state. This section will examine and compare the occupations subject to the PTSD rebuttable presumption and the evidentiary thresholds for rebutting the presumption in states with an existing PTSD presumption.

3.4.1 Minnesota's rebuttable presumption

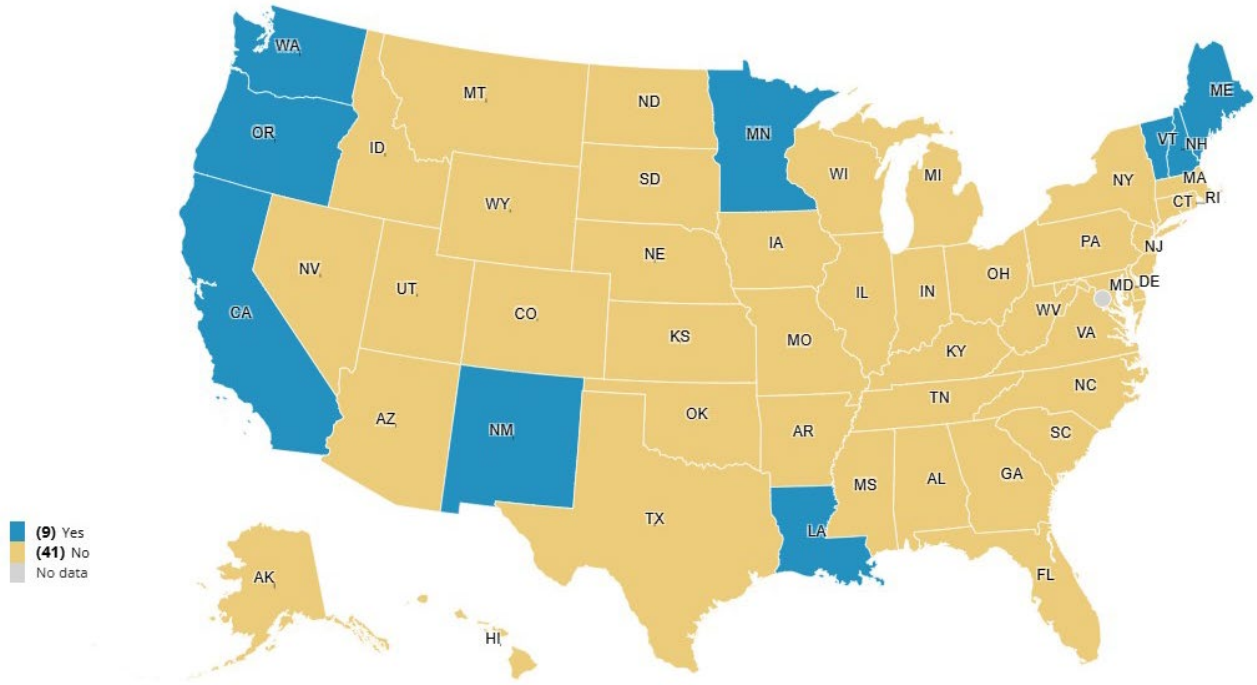
Minnesota's rebuttable presumption for PTSD is codified in Minn. Stat. § 176.011, subd. 15, paragraph (e). For the presumption to apply, the worker must first be diagnosed with a mental impairment, which is defined in Minnesota statute "as a diagnosis of post-traumatic stress disorder by a licensed psychiatrist or psychologist." Post-traumatic stress disorder is defined as "the condition as described in the most recently published edition of the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association." (Minn. Stat. § 176.011, subd. 15 (d)). Next, before the date of disablement from PTSD, the worker must be employed on active duty in one of the following occupations: a licensed police officer; a firefighter; a paramedic; an emergency medical technician; a licensed nurse employed to provide emergency medical services outside of a medical facility; a public safety dispatcher; a correctional officer or security counselor employed by the state or a political subdivision at a corrections, detention or secure treatment facility; a sheriff or full-time deputy sheriff of any county; or a member of the Minnesota State Patrol. (Minn. Stat. § 176.011, subd. 15 (e)). When these two requirements are met, then the worker's PTSD "is presumptively an occupational disease and shall be presumed to have been due to the nature of employment." (Minn. Stat. § 176.011, subd. 15 (e)).

However, the presumption for properly diagnosed PTSD claims may be rebutted by substantial factors brought by the employer or insurer. Any substantial factors used to rebut the presumption (that are known to the employer or insurer at the time of the denial of liability) must be communicated to the worker at the time the worker's claim is denied. Finally, a worker's PTSD cannot result from "disciplinary action, work evaluation, job transfer, layoff, demotion, promotion, termination, retirement or similar action taken in good faith by the employer." (Minn. Stat. § 176.011, subd. 15, paragraph (e)).

3.4.2 Other jurisdictions with PTSD rebuttable presumption

Nine states currently have a presumption for PTSD, including California, Louisiana, Maine, Minnesota, New Hampshire, New Mexico, Oregon, Vermont and Washington.

Figure 3.2. States with a rebuttable presumption for PTSD



3.4.3 Occupations covered by other jurisdictions

To better understand the occupations included in Minnesota's rebuttable presumption, it is instructive to examine how other states define eligible occupational categories. Every state with a rebuttable presumption for PTSD has a unique list of occupations that are covered by the presumption. However, while the specific occupations included in the presumptions vary by state, the occupations typically fall within the "first responder" category.

Table 3.5. Occupations covered by PTSD presumption law by state

State	Occupations covered by PTSD presumptions
California	Active firefighting members (including paid or volunteer), peace officers who are primarily engaged in active law enforcement activities, and fire and rescue services coordinators who work for the Office of Emergency Services, EMTs and paramedics – California Labor Code § 3212.15
Louisiana	Emergency medical services personnel, any employee of a police department, any fire employee or any volunteer fireman – Louisiana Statutes Annotated-Revised Statutes § 33:2581.2
Maine	A law enforcement officer, corrections officer, 911 dispatcher, firefighter or emergency medical services person – Maine Revised Statutes Annotated title 39-A, § 201
Minnesota	A licensed police officer; a firefighter; a paramedic; an emergency medical technician; a licensed nurse employed to provide emergency medical services outside of a medical facility; a public safety dispatcher; a correctional officer or security counselor employed by the state or a political subdivision at a

State	Occupations covered by PTSD presumptions
	corrections, detention or secure treatment facility; a sheriff or full-time deputy sheriff of any county; or a member of the Minnesota State Patrol –Minn. Stat. § 176.011, subd. 15(e)
Missouri	First responders, which is defined as any person trained and authorized by law or rule to render emergency medical assistance or treatment; such persons may include, but shall not be limited to, emergency first responders, telecommunicator first responders, police officers, sheriffs, deputy sheriffs, firefighters, emergency medical technicians, registered nurses or physicians – Missouri Annotated Statutes § 67.145
New Hampshire	Includes "emergency responders," defined as ": call, volunteer or regular firefighters; law enforcement officers certified under Revised Statutes Annotated 106-L; certified county corrections officers; emergency communication dispatchers; and rescue or ambulance workers including ambulance service, emergency medical personnel, first responder service and volunteer personnel" – New Hampshire Revised Statutes Annotated § 281-A:2
New Mexico	Firefighters only (defined as "a person who is employed as a full-time non-volunteer firefighter by the state or a local government entity and who has taken the oath prescribed for firefighters"") – New Mexico Statutes § 52-3-32.1 (A)
Oregon	A full-time paid firefighter; a full-time paid emergency medical services provider; a full-time paid police officer; a full-time paid corrections officer or youth correction officer; a full-time paid parole and probation officer; or a full-time paid emergency dispatcher or 9-1-1 emergency operator –Oregon Revised Statutes Annotated § 656.802
Vermont	Police officers, rescue or ambulance workers, or firefighters –Vermont Statutes Annotated title 21, § 601
Washington	Firefighters, including supervisors, employed on a full-time, fully compensated basis as a firefighter of a private sector employer's fire department that includes more than 50 such firefighters and law enforcement officers and direct care registered nurses –Washington Statutes § 51.32.185 and § 51.32.395

Within the rebuttable presumption occupations, firefighters are universally covered in all states with PTSD rebuttable presumptions. Police officers are the second most frequently covered occupation, appearing in each state except New Mexico, which covers only firefighters in its rebuttable presumption. New Mexico and Washington are the only presumption states that do not extend coverage to EMS or paramedics; the other seven states (including Minnesota) include EMS or paramedics in the rebuttable presumption. Nurses appear just once in this list, having only recently been added to Washington's rebuttable presumption in 2024.

In comparison to other states, Minnesota's list of covered occupations appears moderately inclusive. Minnesota's list of occupations is most similar to Maine and Oregon. Of the nine states, Minnesota, Maine and Oregon are the only states to include 911 dispatchers and all corrections officers in their PTSD rebuttable presumption covered occupations. Minnesota has not extended the PTSD presumption to nurses providing direct care like Washington, nor has it excluded most occupations like New Mexico.

3.4.4 Rebuttable factors

Another important feature of presumptions within workers' compensation is the employer or insurer's ability to rebut the presumption that the injury was caused by or arose out of employment. There are four rebuttal standards used by PTSD presumption states: other evidence; preponderance of the evidence; clear and convincing evidence; and substantial factors.

The lowest threshold to rebut a PTSD presumption is "other evidence." This is found only in California, where the PTSD presumption "may be controverted by other evidence." (Cal. Lab. Code § 3212.15 (c)(2)). The term

"other evidence" is not defined in California statute or case law, but presumably could include any evidence showing the PTSD injury was not caused by the worker's employment.

New Hampshire, New Mexico, Vermont and Washington require employers or insurers to rebut the PTSD presumption with a preponderance of the evidence, which is defined as "more likely than not." In these states, employers or insurers must present evidence showing it is more likely the worker's PTSD was caused by factors outside of the worker's employment than not.

In Louisiana, Maine and Oregon, employers and insurers can rebut the presumption that the worker's PTSD is work-related with clear and convincing evidence. Clear and convincing evidence requires the truth of the evidence presented to be highly probable. In these states, employers or insurers must present evidence showing it is highly probable the worker's PTSD is not work-related.[18] Oregon's standard further requires the clear and convincing evidence be medical in nature.

Finally, Minnesota's PTSD presumption may be rebutted by "substantial factors." Any substantial factors used to rebut the presumption, which are known to the employer or insurer at the time a claim is denied, must be communicated to the worker. (Minn. Stat. § 176.011, subd. 15 (e)). The term "substantial factors" is not defined in Minnesota statute. However, according to case law, an employer is required to "make a strong showing by introducing substantial evidence to rebut the presumption."[19] Minnesota case law also specifies "when the PTSD presumption applies, the employer faces a higher burden than in a case in which no presumption applies" by requiring substantial factors showing that the PTSD is not work-related.[20]

Table 3.6. Rebuttable presumption standards

State	Rebuttal standard [21]
California	Disputable by any evidence
Louisiana	Clear and convincing evidence
Maine	Clear and convincing evidence
Minnesota	Substantial factors
New Hampshire	Preponderance of the evidence
New Mexico	Preponderance of the evidence
Oregon	Clear and convincing medical evidence
Vermont	Preponderance of the evidence
Washington	Preponderance of the evidence

[18]See, for example, *SAIF Corp. v. Brown*, 159 Or. App. 440, 445, 978 P.2d 407, 410 (1999) (defining clear and convincing evidence as "the truth of the facts asserted must be highly probable"); *Dubois v. Madison Paper Co.*, 2002 ME 1, ¶ 10, 795 A.2d 696, 699 (defining the clear and convincing standard to mean "the party with the burden of persuasion may prevail only if he can place in the ultimate factfinder an abiding conviction that the truth of his factual contentions are highly probable").

[19]*Juntunen v. Carlton Cnty.*, 982 N.W.2d 729, 741 (Minn. 2022) (internal citations omitted).

[20]*Id.*

[21]There are no states that currently have a conclusive presumption of PTSD, which is a presumption that is unrebuttable or unable to be challenged by any evidence from an employer.

Oregon's rebuttal standard is notable since it is the only state to specifically require medical evidence to rebut the PTSD presumption. This is arguably the most stringent standard of the rebuttable states, since the employer must produce medical evidence that demonstrates it is highly probable the worker's PTSD was caused outside of employment.

Minnesota's rebuttable standard is singular among the rest of the rebuttable presumption states, because it is the only jurisdiction to require substantial factors. This is subjectively a lower standard than clear and convincing. It should be noted Minnesota requires substantial factors to rebut other occupational presumptions for first responders as well, such as myocarditis, coronary sclerosis and pneumonia. For any of these presumptions, an employer or insurer is required to make a strong showing with substantial factors that the injury is not work-related. Therefore, the substantial factors requirement is not unique to the PTSD presumption in Minnesota, but it is unique in its rebuttal standard for PTSD claims in comparison to other jurisdictions.

3.5 Conclusions

Mental injuries, such as PTSD, can pose a unique challenge in workers' compensation systems. Legislatures nationwide are actively revisiting or expanding existing PTSD law and there is no uniform nationwide approach to PTSD in workers' compensation. Due to the changing landscape of PTSD laws, it is apparent no single jurisdiction has identified a conclusive or universal solution to the challenges presented by work-related PTSD.

In jurisdictions where PTSD is currently not compensable without an accompanying physical injury, some states, such as Kentucky, are considering adding coverage for first responders (HB 420, which makes stand-alone psychological injuries compensable for police officers, firefighters, emergency medical services personnel, frontline staff and active National Guard members). Several jurisdictions that already have presumption laws are considering expanding the list of occupations subject to a PTSD rebuttable presumption, including Oregon (SB 606, which adds state hospital workers providing direct care to patients and Department of Human Services workers in the Stabilization and Crisis Unit to the PTSD presumption), and Washington (HB 1070, which adds correctional facility workers to the PTSD presumption).

In comparison to other jurisdictions, Minnesota's legislative approach to PTSD in the workers' compensation system appears measured and reasonable. Minnesota's statutory definition of PTSD and the occupations covered by the rebuttable presumption are consistent with many other jurisdictions. However, further consideration or refinement of Minnesota's current PTSD law may be warranted.

4. Tracking PTSD claims and associated worker outcomes

Section 4 presents an overview and analysis of PTSD claims in the Minnesota workers' compensation system. As described in more detail in Section 4.1, 1,786 PTSD claims were reported to DLI from 2014 through 2023, accounting for less than 0.5% of the total 357,217 claims reported during the same time period. This section will examine trends in PTSD claim volumes, demographic patterns, occupational distributions, claim denial rates, and the duration and outcomes of claims. Section 4.2 analyzes medical treatment data for PTSD in workers' compensation, and Section 4.3 describes return-to-work outcomes among workers with PTSD claims.

4.1 Characteristics of PTSD and other mental injury claims in DLI's workers' compensation data system

The DLI workers' compensation claims database consists of claims information submitted by insurers, attorneys and vocational rehabilitation providers. Documents submitted to the Office of Administrative Hearings (OAH) are included in the DLI database as PDF files, with only the document type, date filed and submitting party included as data fields. Insurers are required to file information for all claims with more than three days of disability or that have a permanent impairment, and, although claims with shorter periods of disability are often submitted, most shorter-term claims are not reported and are missing from claim counts. Medical treatments and payments are not submitted to DLI.

Even with these limitations, the DLI claims database offers the most comprehensive available information about workers with PTSD claims in the Minnesota workers' compensation system. DLI and University of Minnesota (UMN) researchers used the database to analyze the characteristics of the workers filing claims for PTSD and other mental injuries, the events occurring during their claims and the types and amounts of benefits paid.

4.1.1 Methods

4.1.1.1 PTSD and other mental injury claims

Identifying PTSD claims within the Minnesota workers' compensation system presents several challenges. Many workers report their mental injuries to their employer before a definitive PTSD diagnosis by a licensed psychiatrist or psychologist is available, and the employer then submits the information to its insurer. Initial injury reports about mental injuries submitted to DLI often contain lists of symptoms, such as depression, trauma, stress, anxiety or vague descriptions of traumatic events, without explicitly identifying PTSD or even mentioning the possibility of PTSD. Furthermore, PTSD can be complicated to classify because it shares symptomology with other mental health conditions, such as stress, anxiety and depression. Definitive information about the nature of the claimed injury often emerges months after the initial filing.

The DLI workers' compensation claims database contained 357,217 claims with injury dates from January 2014 through June 2023 that were reported by Sept. 30, 2023. Claims were selected for inclusion if they met at least one of the following criteria:

- a DLI-coded nature of injury indicating a mental injury (using the Occupational Injury and Illness Coding System developed by the U.S. Bureau of Labor Statistics);
- an insurer-coded nature of injury indicating a mental injury (using the Workers' Compensation Insurers Organizations code set); or
- a mental injury keyword present in the narrative section of the First Report of Injury (FROI) form.

While the U.S. Bureau of Labor Statistics code set includes a code specifically for PTSD, the insurers' code set does not have a specific PTSD code value. Additionally, many mental injury claims were coded vaguely by insurers as "no physical injury" when a more specific "mental disorder" or "mental stress" code would have better aligned with the injury description. Additional information was obtained from injury description and denial narrative text fields. Claims that lacked any reference to a mental injury coded by the insurer or DLI were excluded. Claims missing DLI codes were retained for manual evaluation. This process yielded an initial cohort of 5,405 claims.

Based on these multiple sources of information, each claim was then assigned a likelihood score for each of five categories: PTSD, stress or anxiety, other mental health injury (such as depression), combined mental-physical injury and physical injury only. Claims identified as primarily physical injuries were excluded from further analysis. Claims that were withdrawn shortly after filing (based on documentation received) or identified as duplicates were also removed.

4.1.1.2 Refinement and validation of injury classifications

To move beyond initial likelihood scoring based on readily available data fields and toward definitive categorization, claim files were further examined by reviewing unstructured text in filed documents. Many claims included additional information submitted after initial filing, such as medical evaluations or legal documents, which were more likely to indicate the specific nature of the mental injury being considered in the claim.

Given the volume of associated documents, manual review of all claims was not feasible. Instead, a pre-built artificial intelligence (AI) text recognition tool developed by Microsoft was used to scan claim attachments (See learn.microsoft.com/en-us/ai-builder/prebuilt-text-recognition). The AI tool searched for keywords associated with PTSD, stress or anxiety and other mental injuries, and generated counts of relevant terms for each claim. These counts were used to adjust likelihood scores. Claims with conflicting injury type scores were manually reviewed to determine the best-fit classification.

Instances in which workers had multiple mental injury claims in the data file were identified. Additionally, related physical and mental injury claims, resulting from separate incidents, were identified because they were involved in the same dispute or claim settlement process. The claim documents were examined to determine if the multiple mental injuries were separate claims or variations in the filing of the same claim using an alternate date of injury. Sometimes, claims were initially filed using the date of a traumatic incident and then another document was filed using the date of a medical diagnosis as the injury date, which the DLI database system used to create a separate claim file.

Related claims were also identified when multiple employers were involved in the settlement process, often due to joint employment during the traumatic exposure. Claims with related physical injuries (which almost always had earlier injury dates) were reviewed to determine if settlement amounts accounted for both injury types. These instances of workers with multiple claims were resolved by identifying the primary mental injury claim and adding information into that claim data if relevant documents were missing from that claim. These processes resulted in merging 98 PTSD claims into another PTSD claim from the same worker.

Manual review also uncovered a small number of claims initially classified as PTSD where indemnity benefits were paid without settlement agreements. These claims were manually reviewed to verify the injury coding, leading some to be recoded as "other mental injury" or as a physical injury (n=38).

4.1.1.3 Final study cohort

Following the multi-stage validation process, the final analytic cohort included:

- 1,786 PTSD claims; and
- 1,030 other mental injury claims (including stress, anxiety, depression and other mental health symptoms not classified as PTSD) that are not associated with a physical injury.

Classification as a PTSD claim reflected the worker's assertion of PTSD, regardless of whether the insurer accepted the diagnosis. The phrases "before the presumption law" and "after the presumption law" refer to the claims filed in the injury-years 2014 to 2018 and 2019 to 2023, respectively. The presumption is effective for claims with injury dates on or after Jan. 1, 2019, irrespective of the claim filing date.

As described in sections 3.2 and 3.2.1, PTSD is the only stand-alone mental health injury compensable under workers' compensation law. Other mental health injuries or illnesses are not compensable without an accompanying physical injury (*Lockwood v. Independent School Dist. No. 877*, 312 N.W.2d 924 (1981)). The inclusion of other mental injuries in the results is necessary because the refinement and validation process yielded a high number of filed mental injury claims that could not be categorized as PTSD based on the available documentation. These claims, which remained after claims for PTSD and physical injuries were categorized, were not cohesive. In some instances, a symptom was noted that may be consistent with a PTSD diagnosis, such as insomnia, but the limited information reported was not adequate to draw a conclusion that the claim may be PTSD. In other instances, the data reported stress or anxiety due to work, but no mention of a traumatic incident. Although these other mental injury claims would not be recognized as compensable under workers' compensation law without a PTSD diagnosis, a small number were paid by insurers.

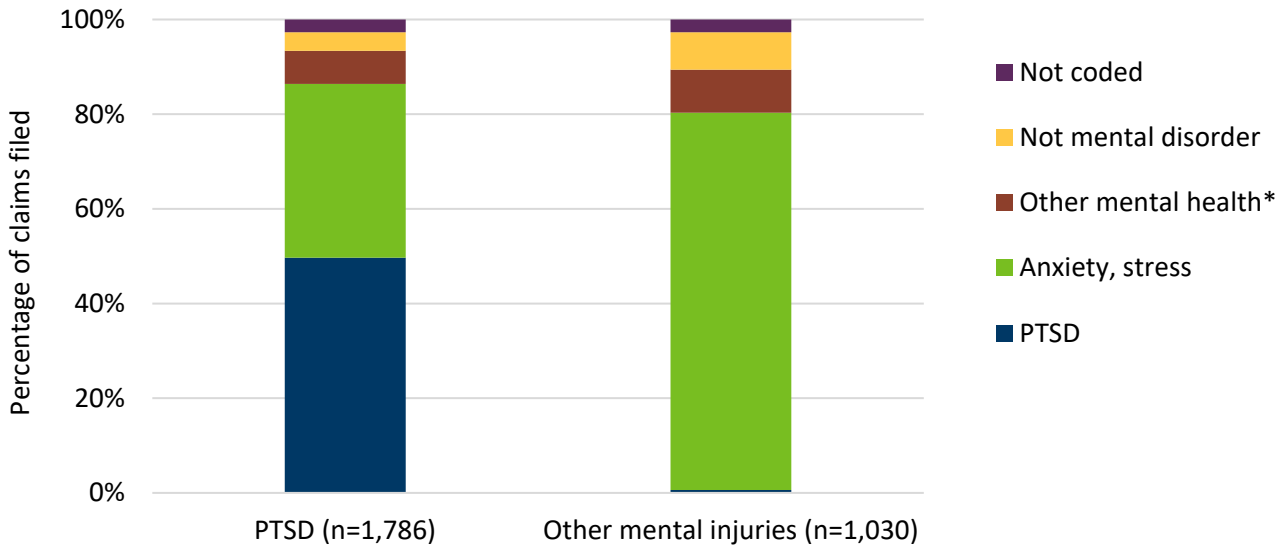
Among the mental injury claims, presumption workers were identified as those in the following occupations: police officers, firefighters, paramedics, EMTs, public safety dispatchers, correctional officers and security counselors, sheriffs and deputy sheriffs, and members of the Minnesota State Patrol. For some analyses, the presumption and non-presumption groups were further divided into occupation groups. As an occupation group, police includes police officers, sheriffs, deputy sheriffs and members of the Minnesota State Patrol.

4.1.2 Results

Results are organized sequentially, starting with claim categories and worker demographics, then describing claim process events, and then claim duration and benefit payments. For some figures, the level of occupational detail used was determined by the number of claims available in the various groups. In most cases, showing the additional detail between police and the other presumption occupations would not reveal any differences between these occupation groups. Additional figures and tables are available in Appendix B, some of which show the values used to produce the figures.

4.1.2.1 Claim categories and worker demographics by claim type

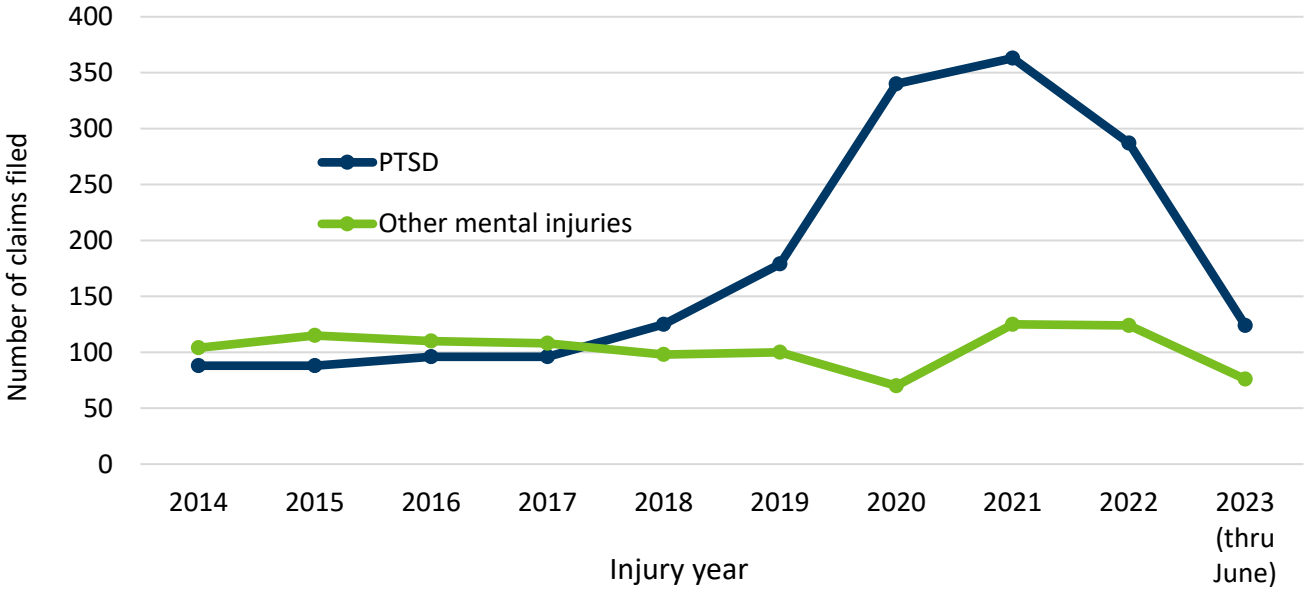
Figure 4.1. Injury coding at first report of injury by mental injury claim type



*Includes one non-PTSD mental injury claim for a traumatic brain injury or stroke.

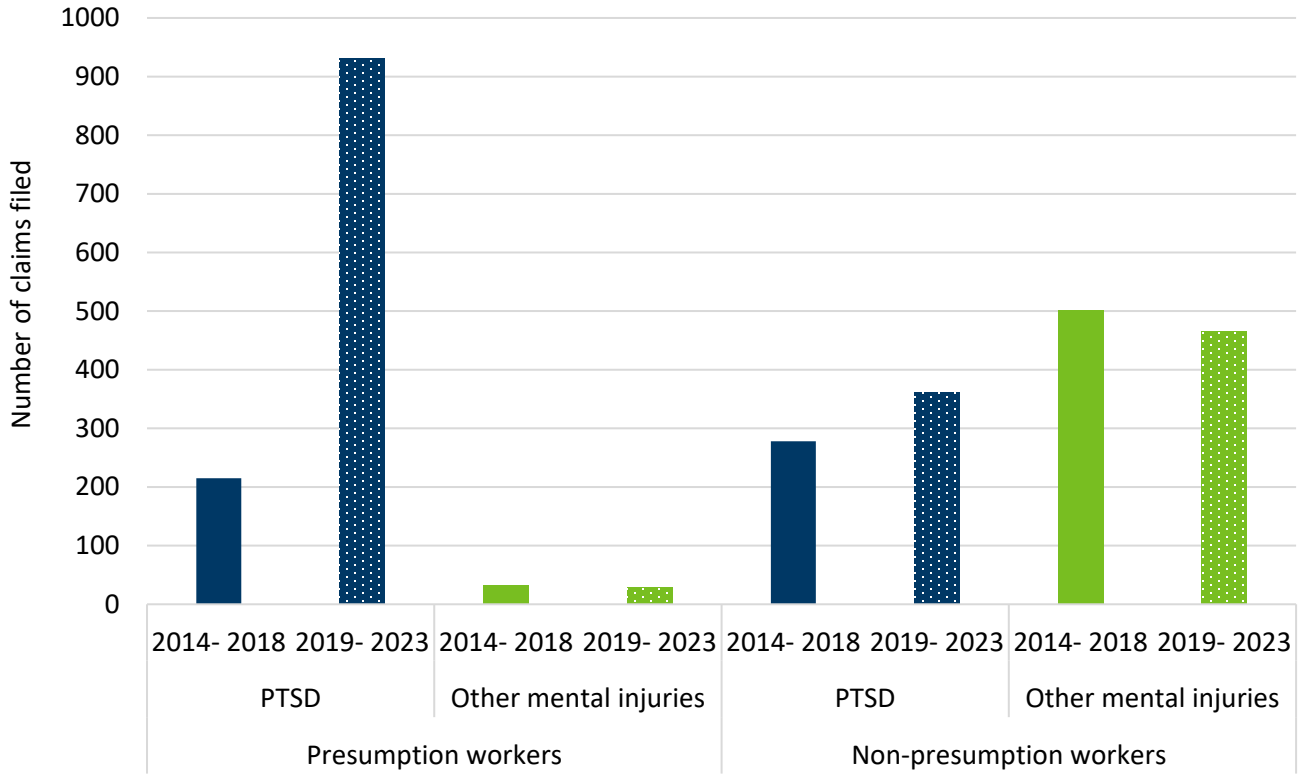
Based on the First Report of Injury, DLI coded the nature of injury as PTSD for only 50% of the claims later identified as PTSD claims and coded 80% of the other mental injury claims as anxiety or stress (Figure 4.1). While 99% of the claims initially coded as PTSD were found to be PTSD claims, 44% of the claims coded as anxiety and stress were also found to be PTSD claims, based on the more complete information available later. These results illustrate the limitations of using the FROI to identify mental injuries and, in particular, PTSD injuries among filed claims, and the need for improved injury narratives and more accurate nature of injury codes from insurers at the outset of mental injury claims.

Figure 4.2. Number of mental injury claims filed (PTSD and other) by injury year



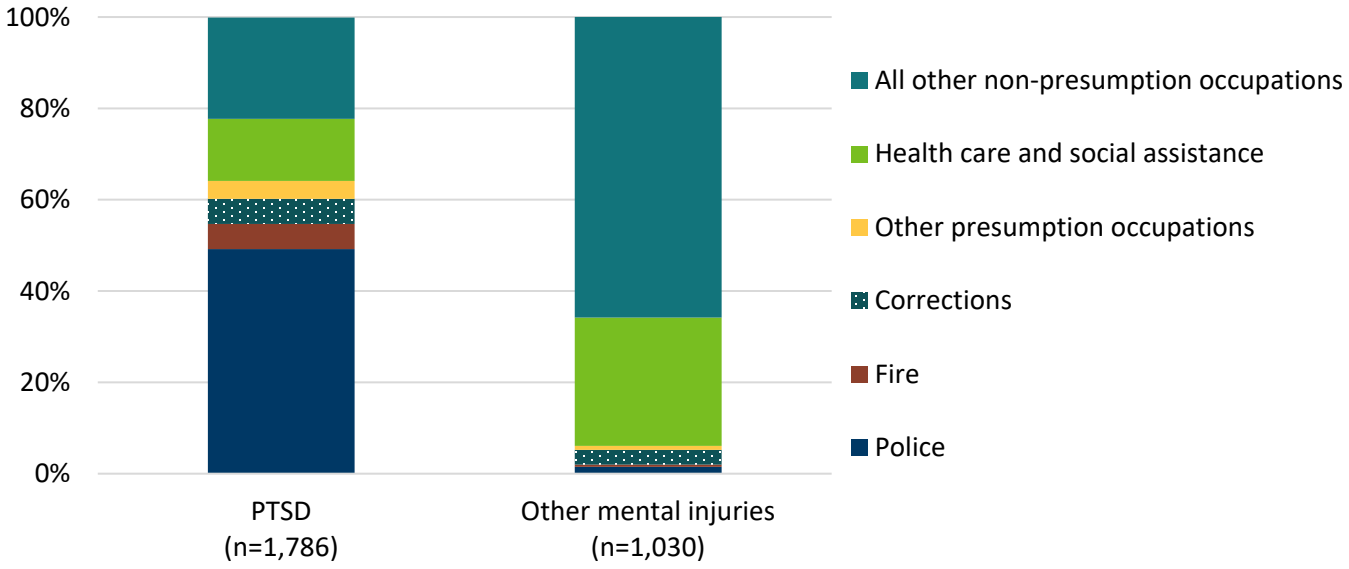
For injuries dated January 2014 through June 2023, a total of 1,786 PTSD-only claims and 1,030 other mental injury claims were filed. After the presumption, the annual count of filed PTSD claims peaked in 2020 (n=340) and 2021 (n=363) (Figure 4.2). Based on monthly reporting rates, the total number of 2023 PTSD claims will likely be lower than the 2022 total. In contrast, the number of other mental injury claims remained relatively flat after the implementation of the presumption (range = 76-125). It is important to note that only claims with more than three days of disability are required to be reported to DLI. Because of this reporting requirement, the filed count of mental injury claims is likely to be less than the actual total.

Figure 4.3. Number of mental injury claims filed (PTSD and other) by presumption group and presumption period



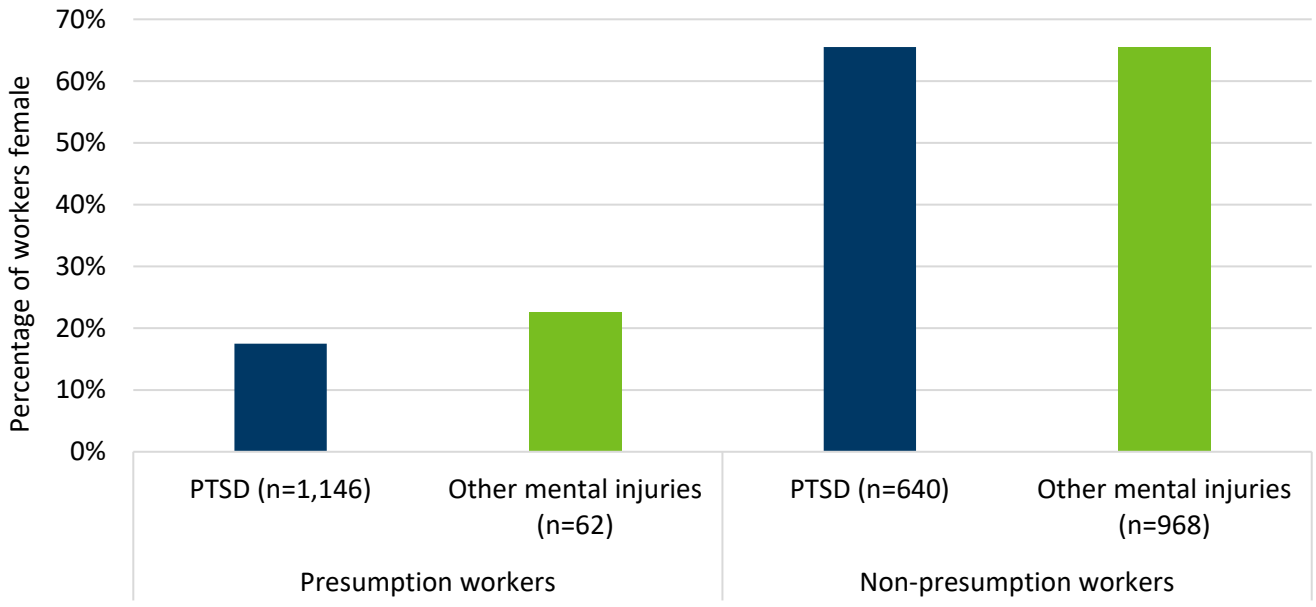
The number of PTSD claims filed by workers in occupations covered by the rebuttable presumption was more than four times greater in the four-and-a-half years after the presumption compared to the five years before the presumption (Figure 4.3). Among non-presumption workers, the number of filed PTSD claims also increased from before to after the presumption, but to a lesser degree. Among all workers, the number of non-PTSD mental injury claims decreased slightly from before to after the presumption.

Figure 4.4. Occupational categories among mental injury claim types



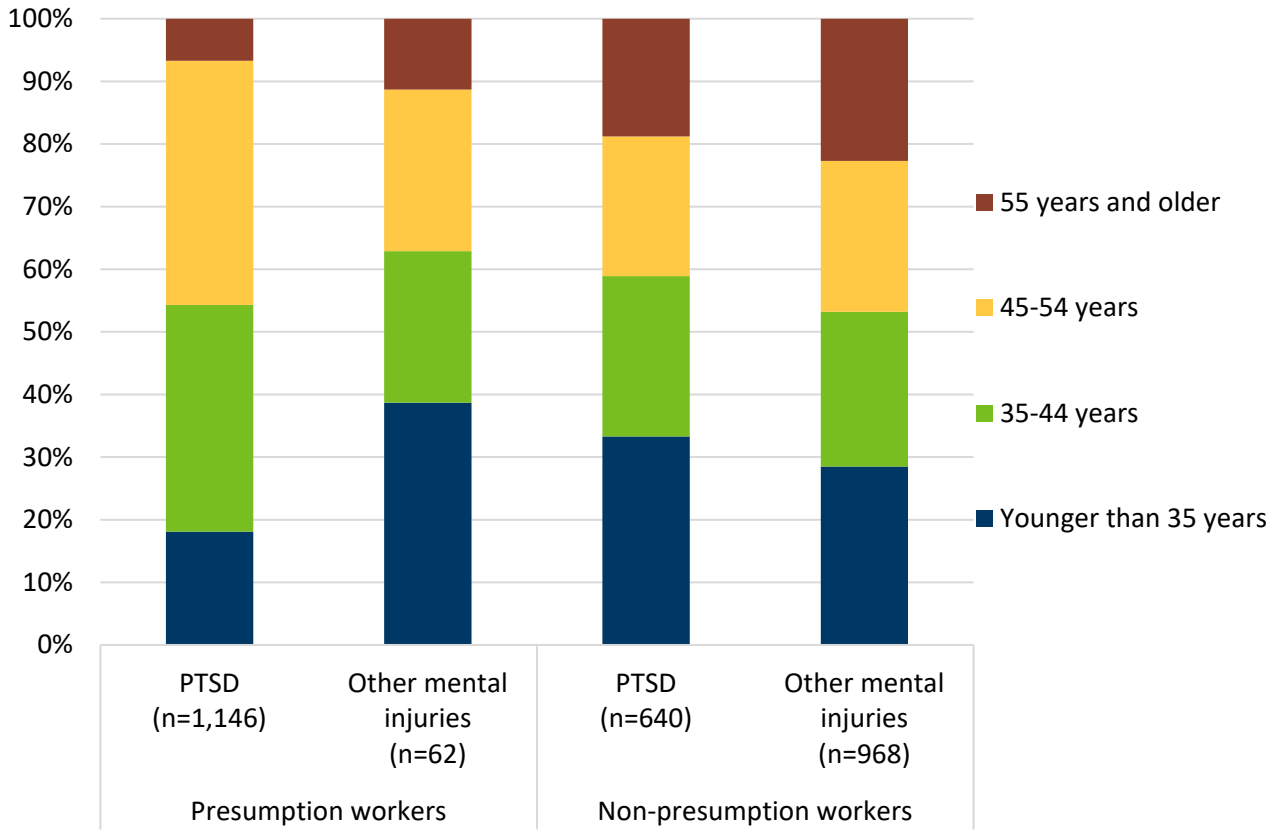
Among filed PTSD claims, the largest group of claimants were police officers (49%), followed by other non-presumption workers (22%). The proportion of non-PTSD mental injury claims filed by workers in health care and social services (28%) was greater than the proportion of PTSD claims (14%) by workers in this group (Figure 4.4). When examining types of mental injury claims within each occupation, nearly all of the claims among police were for PTSD (98%), followed by fire fighters (95%), corrections officers (75%) and other presumption occupation workers (89%) (data not shown). In contrast, 54% of mental injury claims by workers in health care and social services, and 63% of the claims by workers in other non-presumption occupations were for non-PTSD mental injuries (data not shown). Because of the large number of police claims, some figures show them separately from other presumption workers, especially when the results for police vary from the pattern seen with other presumption workers.

Figure 4.5. Female worker percentage by claim type and presumption group



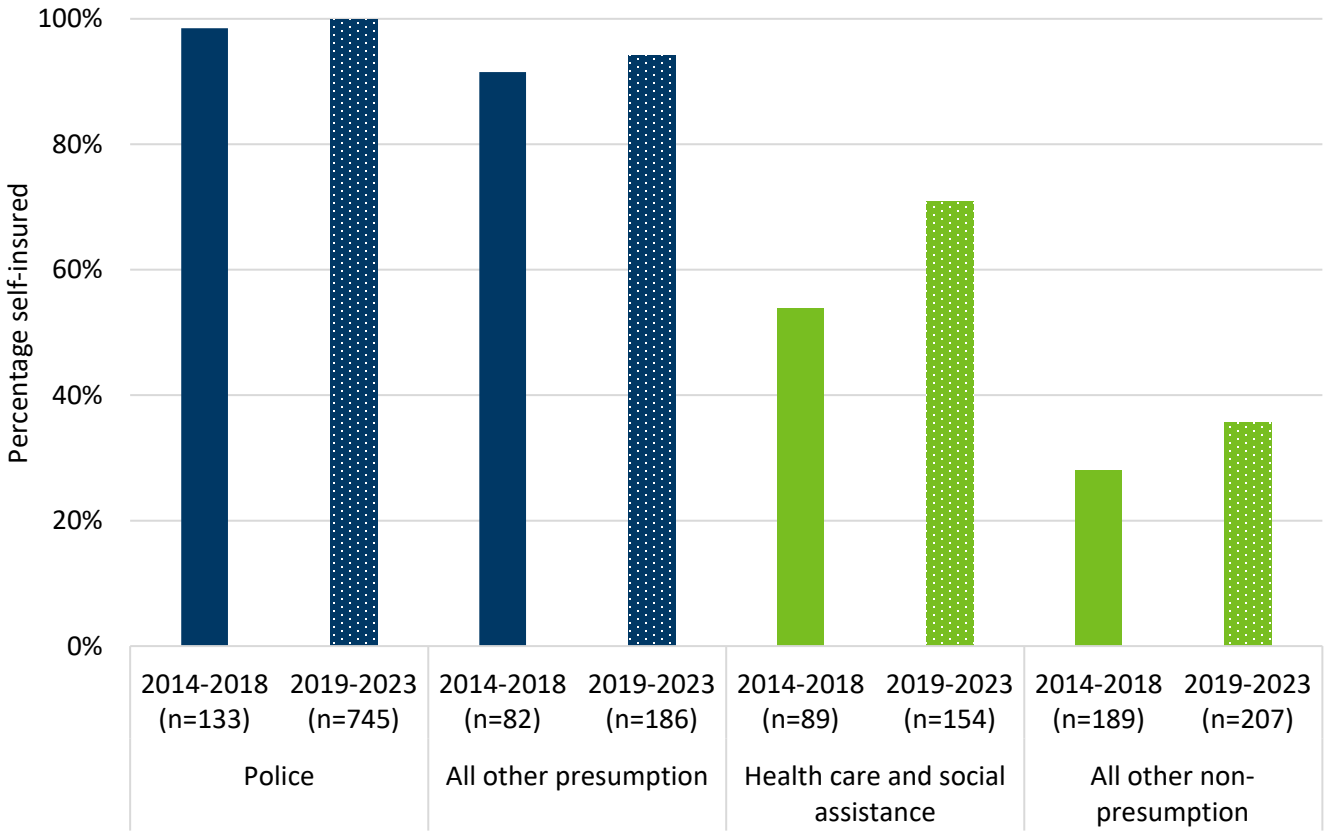
Female workers covered by the presumption filed similar proportions of PTSD claims (18%) and claims for other mental injuries (23%) (Figure 4.5). Female workers in non-presumption occupations also filed similar proportions of PTSD claims (66%) and other mental injuries claims (66%). However, there were gender differences between claims by workers covered by the presumption and those not covered. Less than one-fourth of PTSD and other mental injury claims by workers in presumption-covered occupations were filed by female workers. In contrast, female workers filed two-thirds of mental injury claims by non-presumption occupation workers. Of the female non-presumption workers filing mental injury claims, the most common occupations represented were registered nurses (8.8%), customer service representatives (3.4%) and retail salespersons (3.2%) (data not shown).

Figure 4.6. Distribution of age groups by filed claim type and presumption group, 2014-2023



Most claims for PTSD by presumption workers were filed by workers aged 35to 54 years. Presumption workers younger than 35 years accounted for the largest group with other mental injury claims (Figure 4.6). PTSD and other mental injury claims by workers in non-presumption occupations more frequently involved those aged 55 years and older compared to the presumption occupation claims.

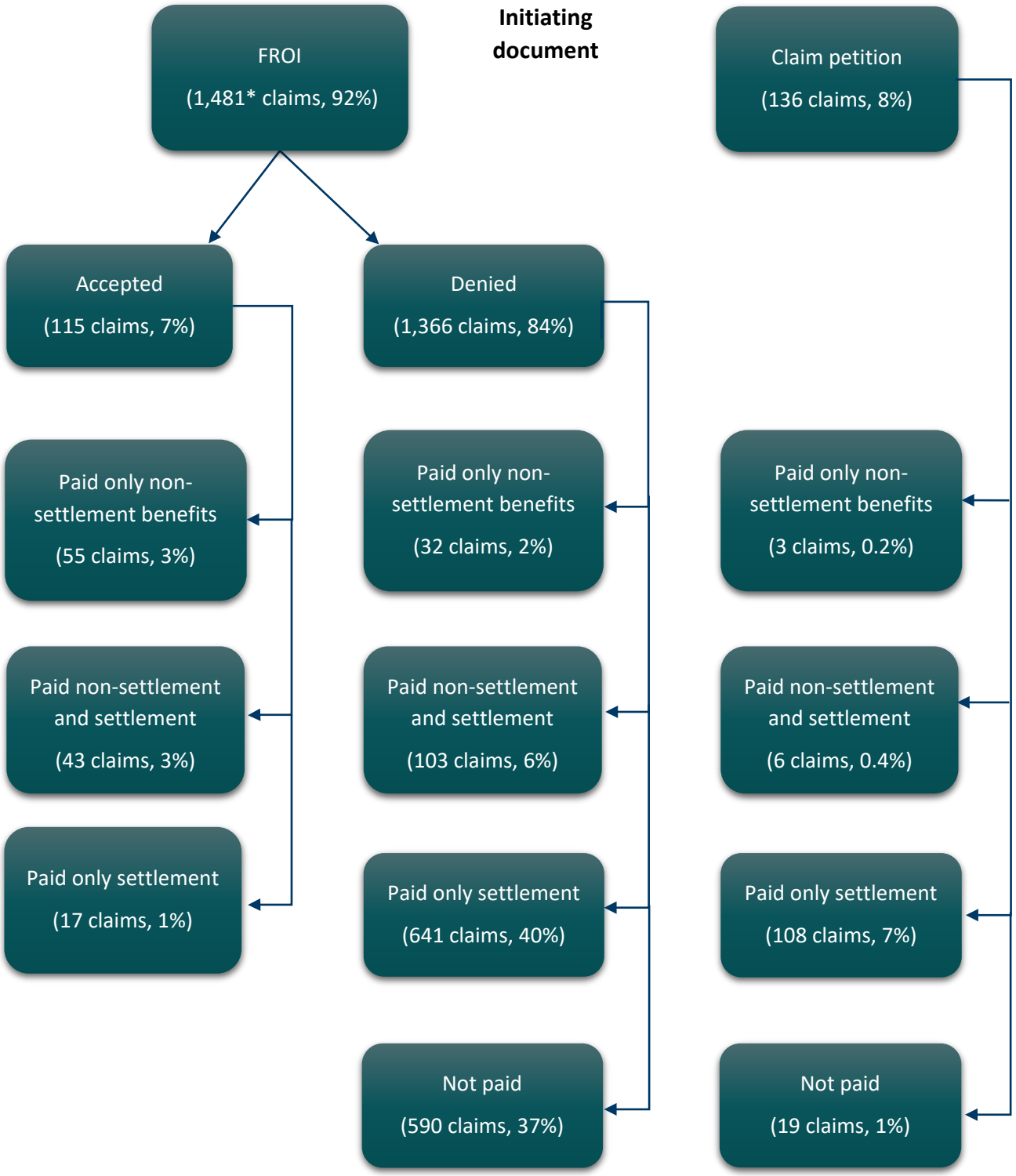
Figure 4.7. Percentage of self-insured employers among PTSD claims by worker group and presumption period



Before and after the presumption, more than 99% of police and 92% of other presumption workers who filed PTSD claims had self-insured employers (Figure 4.7). Among PTSD claims by workers in health care and social services, the proportion with self-insured employers increased from 54% before the presumption to 71% after the presumption. Self-insured employers were least common among PTSD claims filed by workers in other non-presumption occupations, but the proportion increased slightly from before to after the presumption.

4.1.2.2 The claim process

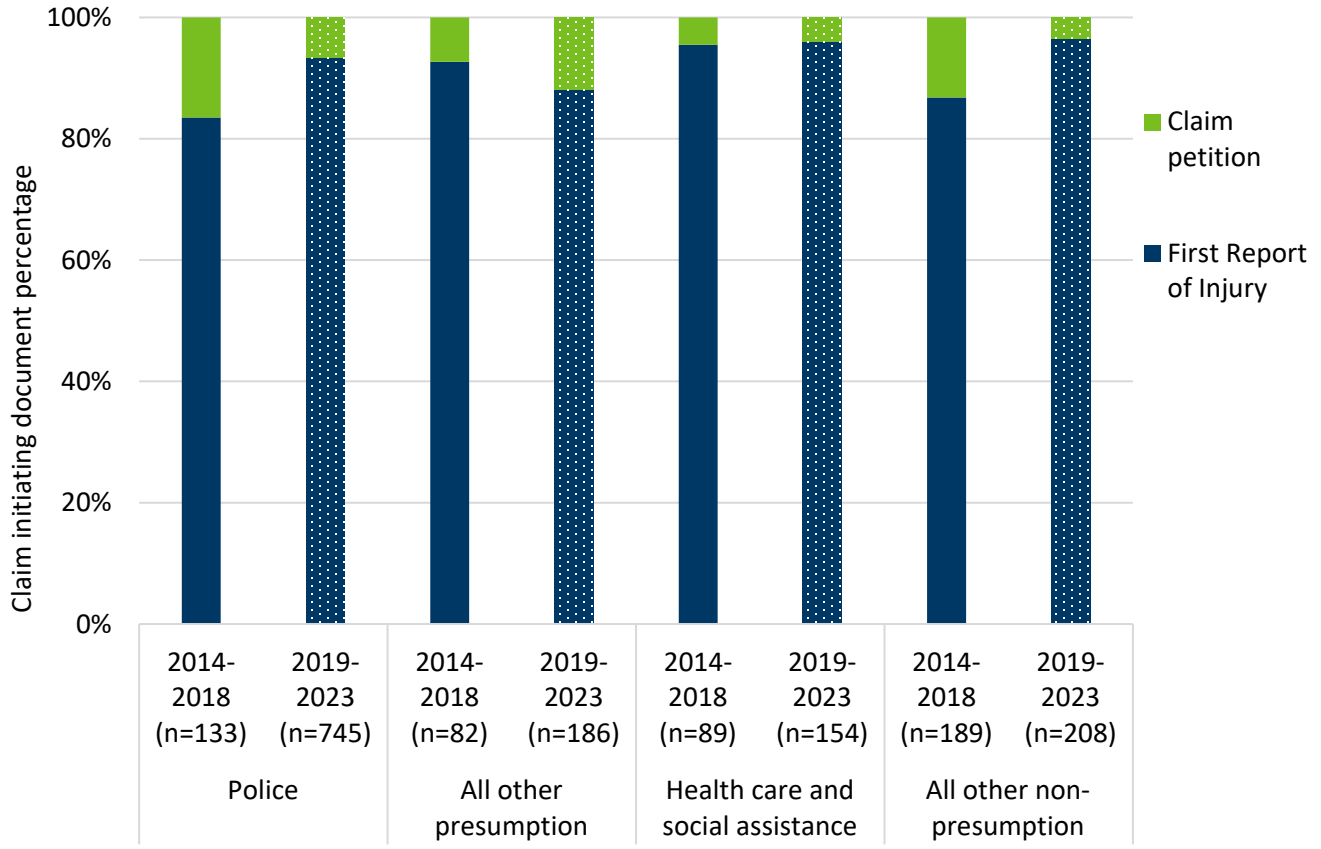
Figure 4.8. Workers' compensation pathways among closed PTSD claims



*Excludes 14 closed PTSD claims with no information available after the First Report of Injury.

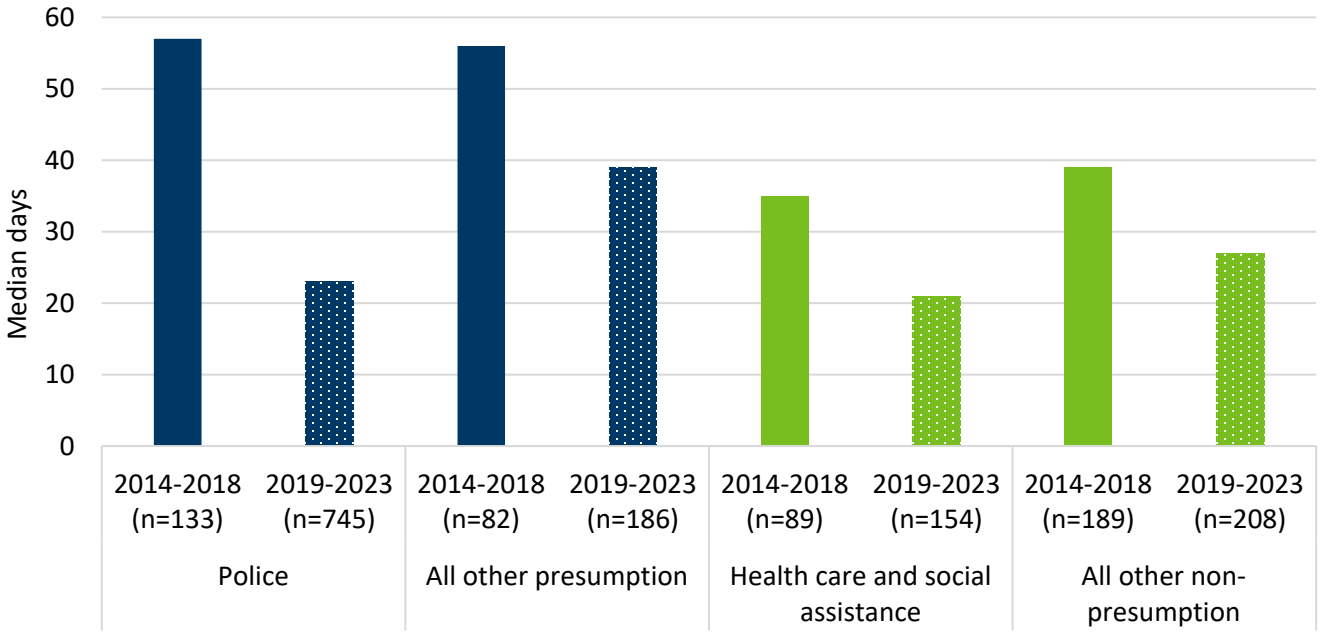
Figure 4.8 shows claim paths based on the initiating document, denial filing and the type of payment(s). Claims initiated through a claim petition are all treated as if they were denied; the insurers' answers to the claim petition uniformly denied the claim of work-related PTSD. Among the 1,617 closed claims for PTSD injuries from 2014 to 2022 that had claim path information, 92% were initiated by a FROI and 84% were denied after the FROI filing (92% of the FROI-initiated claims). Workers paid only through a settlement following a FROI with a denial represented 40% of the PTSD claims and 47% of the FROI claims with a denial. Nearly all of the workers who did not receive a payment for their PTSD claim had a FROI and a denial. However, 53% of the workers with a FROI followed by a denial eventually received a payment for their claim.

Figure 4.9. Initiating document among PTSD claims by worker group and presumption period



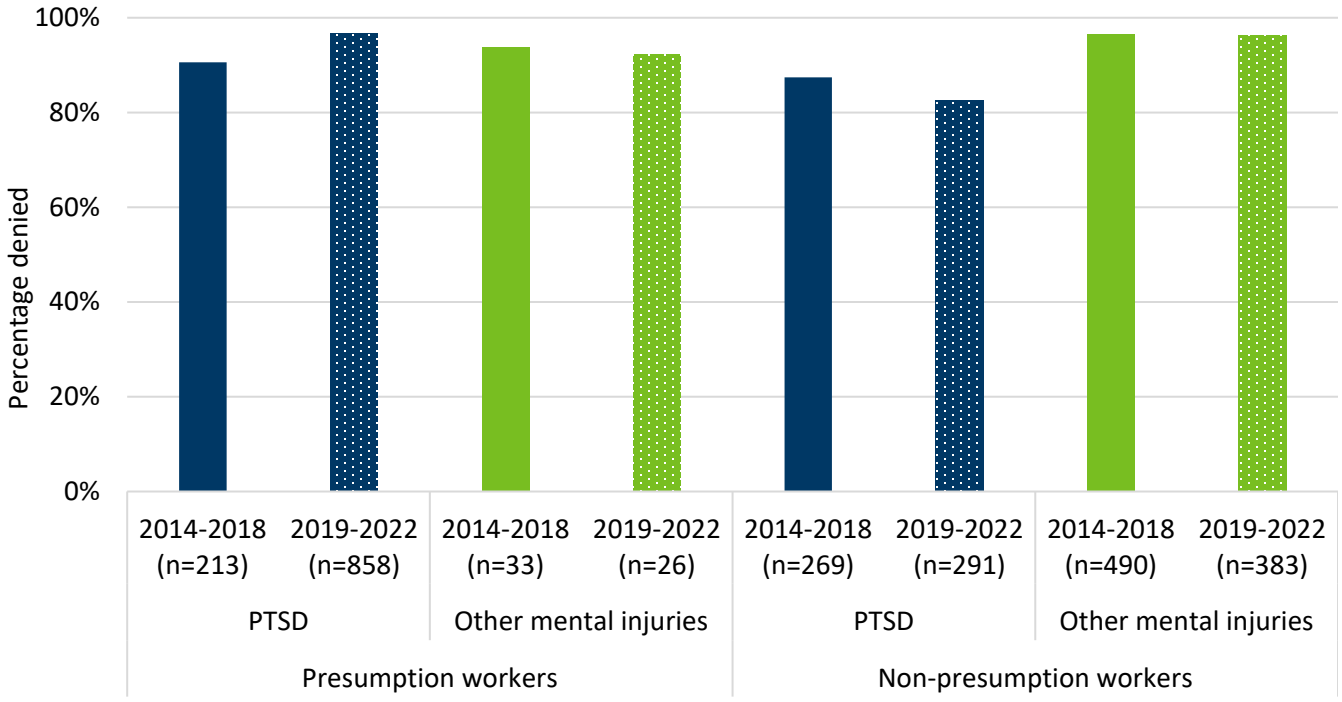
The presumption did not uniformly change how PTSD claims were filed. Among police officers and all other non-presumption workers, FROI filings became more frequent as the initiating document for PTSD claims after the presumption law (Figure 4.9). The percentage of claims initiated by claim petition increased among workers in all other presumption occupations and no change was observed among health care and social services workers.

Figure 4.10. Median filing gap among filed PTSD claims by worker group and presumption period



As mentioned in Section 3, detailed review of claim filings indicated multiple definitions of the injury date were used when filing the FROI and claim petition documents. This, in turn, led to a wide range of durations between the injury date and the date of the filing of the claim initiating document with DLI or OAH, called the filing gap. The median filing gap decreased from pre- to post-presumption law for all worker groups, with the largest decline occurring among police (57 days to 23 days). During the 2014 to 2023 injury years, the median filing gap for all workers' compensation claims was 16 days.

Figure 4.11. Initial denial rates among closed mental injury claims by claim type, presumption group and presumption period



Before the presumption, 91% of the 213 PTSD claims by presumption workers were initially denied and this increased to 97% of the 858 presumption claims occurring after the presumption (Figure 4.11). In contrast, among PTSD claims by workers in non-presumption occupations, the denial rate decreased from 87% before the presumption to 83% after the presumption.

The denial rate among other mental injuries remained consistently high from before to after the presumption law but was not 100% during either period. The other mental injuries are not compensable and so the claims that received benefits were either mis-identified or missing identification data (they could be PTSD or were consequential to a physical injury) or the employer or insurer decided to pay benefits anyway.

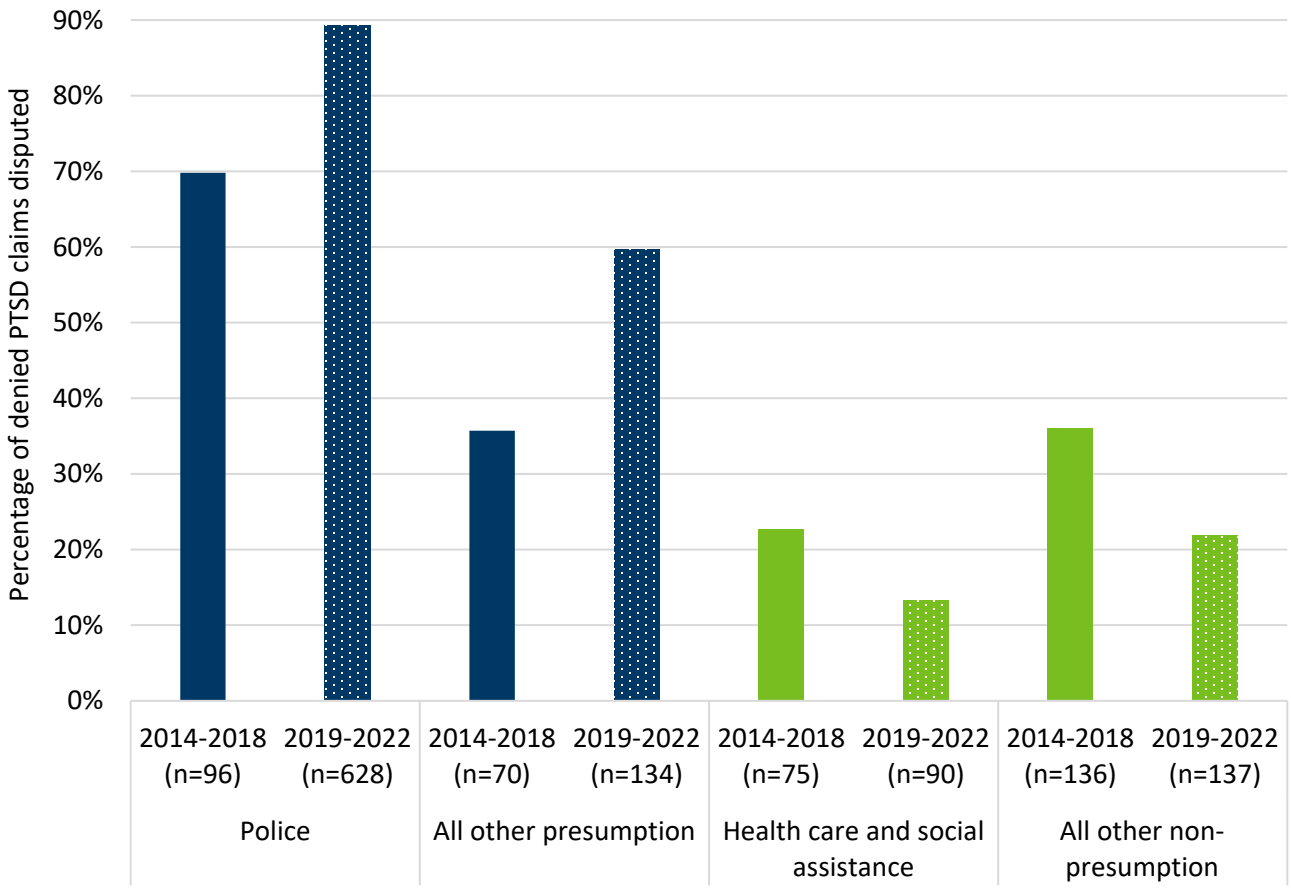
Figure 4.12. Denial reasons by claim type and presumption group, injury-years 2021 to 2023

[1] Presumption occupation workers with other mental injuries were excluded because there were fewer than 10 claims during this time period.
[2] Other reason includes 14 less-frequent denial reasons. “Denial of injury” was not included as a valid reason.

The claim denial reasons became available as a result of a database software change that took effect in November 2020. While there may be multiple reasons for a claim denial, the database only allows one reason to be coded for each claim. In general, the different claims groups received similar reasons for denial. For injury years 2021 through 2023, the most frequent denial reason for PTSD by workers covered by the rebuttable

presumption was that the presumption of compensability did not apply; followed by the injury was "stress non-work related," (Figure 4.12). Among claims by non-presumption workers for mental injuries other than PTSD, the most frequent reasons for denial were "stress non-work related," "no injury per statutory definition" and "idiopathic condition."

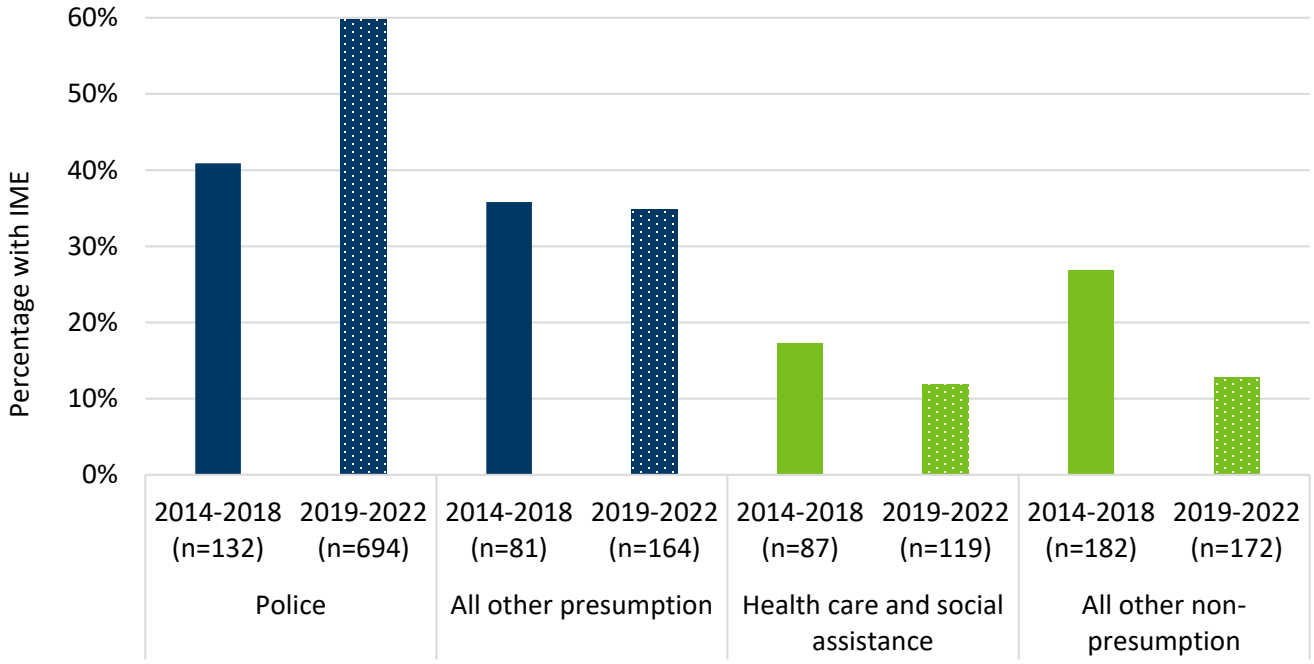
Figure 4.13. Percentage contesting denials after first report of injury by worker group and presumption period, closed PTSD claims



Among PTSD claims by police and other presumption workers initially denied after an initiating FROI, the proportions disputed were greater after the presumption law was passed compared to before, with 89% of denied PTSD claims among police in 2019 or later being disputed (Figure 4.13). In contrast, the denied PTSD claims among health care and social services workers and other non-presumption workers were contested less often after the presumption.

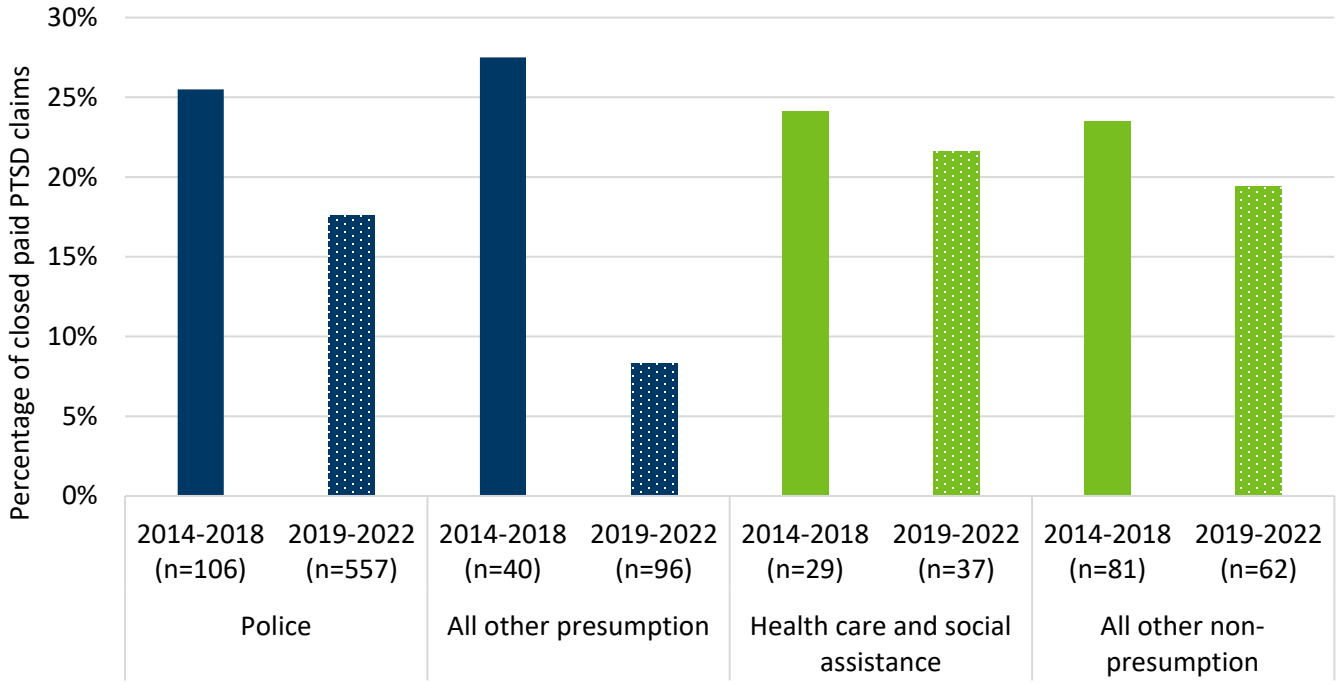
While the majority of workers, in both presumption and non-presumption occupations, who contested their denials eventually received benefits, this percentage without benefits increased from 5% before the presumption to 14% after the presumption. The actual numbers of claims with disputed denials that did not receive benefits went from eight claims before the presumption to 97 claims after the presumption.

Figure 4.14. Percentage of closed PTSD claims with independent medical examinations by worker group and presumption period



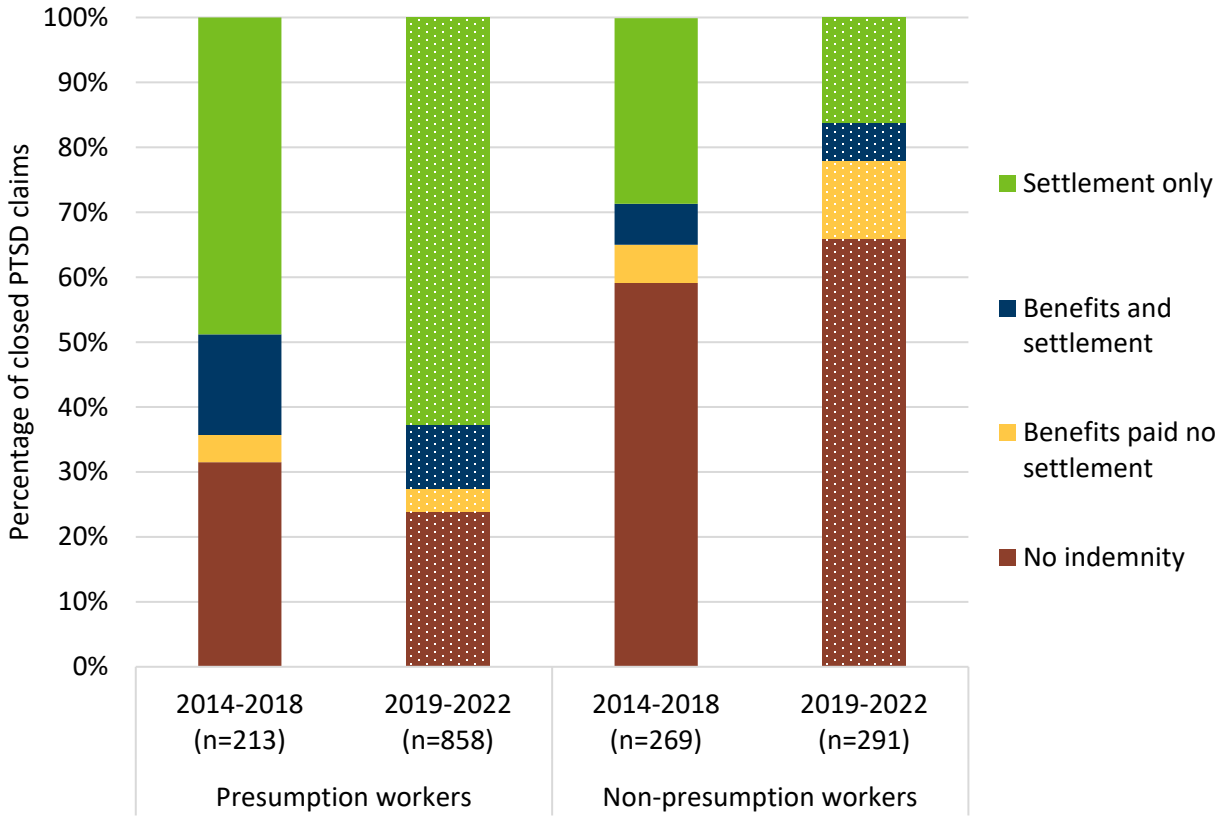
The proportion of closed police PTSD claims that involved an independent medical exam (IME) increased from 41% before the presumption to 60% after the presumption (Figure 4.14). In contrast, the proportion of non-presumption claims with an IME decreased from before to after the presumption. Additional discussion of the methodology of identifying the IME documents and analysis of the IME results is presented in Appendix C.

Figure 4.15. Percentage of paid closed PTSD claims with a vocational rehabilitation plan by worker group and presumption period



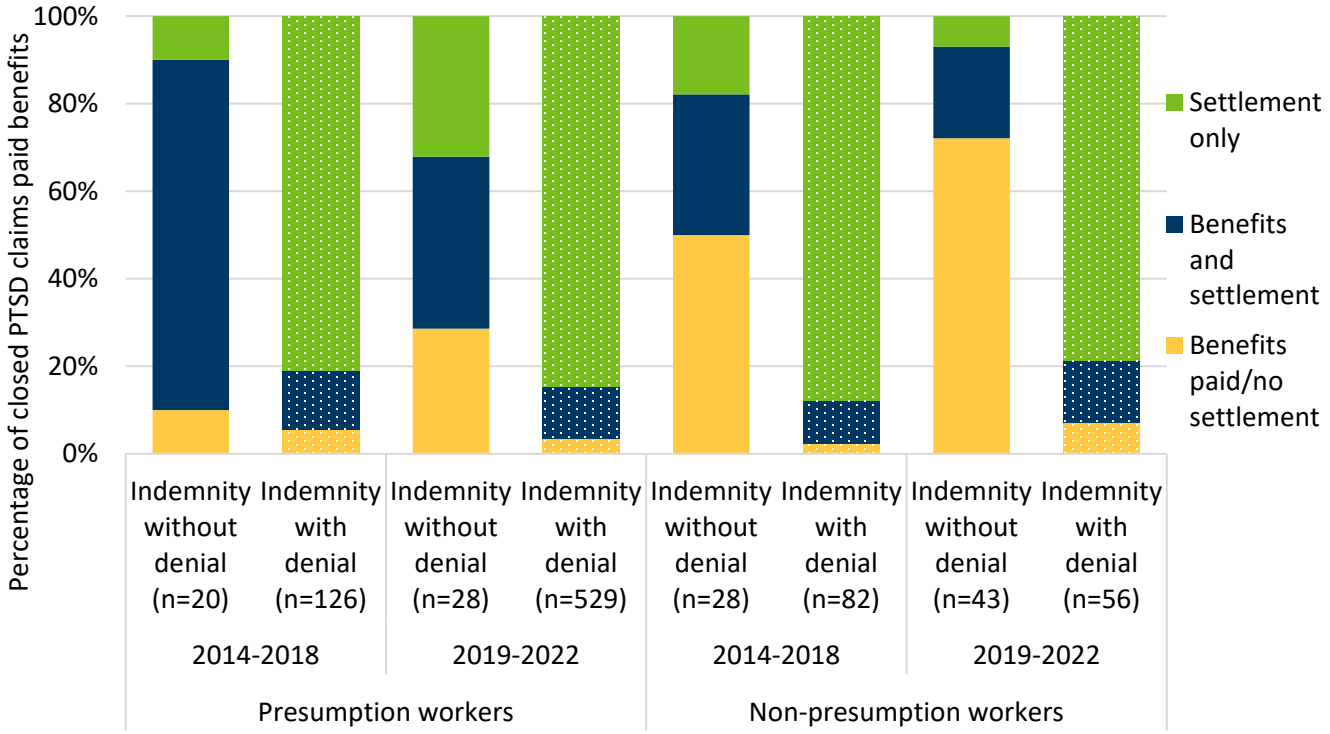
Among closed PTSD claims that received any indemnity payments (benefits and/or settlements), the proportion with a vocational rehabilitation plan filed did not exceed 28% for any group and decreased from pre-presumption period to presumption period among all worker groups, with the sharpest declines occurring among presumption workers (Figure 4.15). The vocational rehabilitation utilization rate for non-presumption workers is similar to the rate for all indemnity claims (*Minnesota Workers' Compensation System Report*, 2024).

Figure 4.16. Type of indemnity benefits paid by presumption group and presumption period among closed PTSD claims



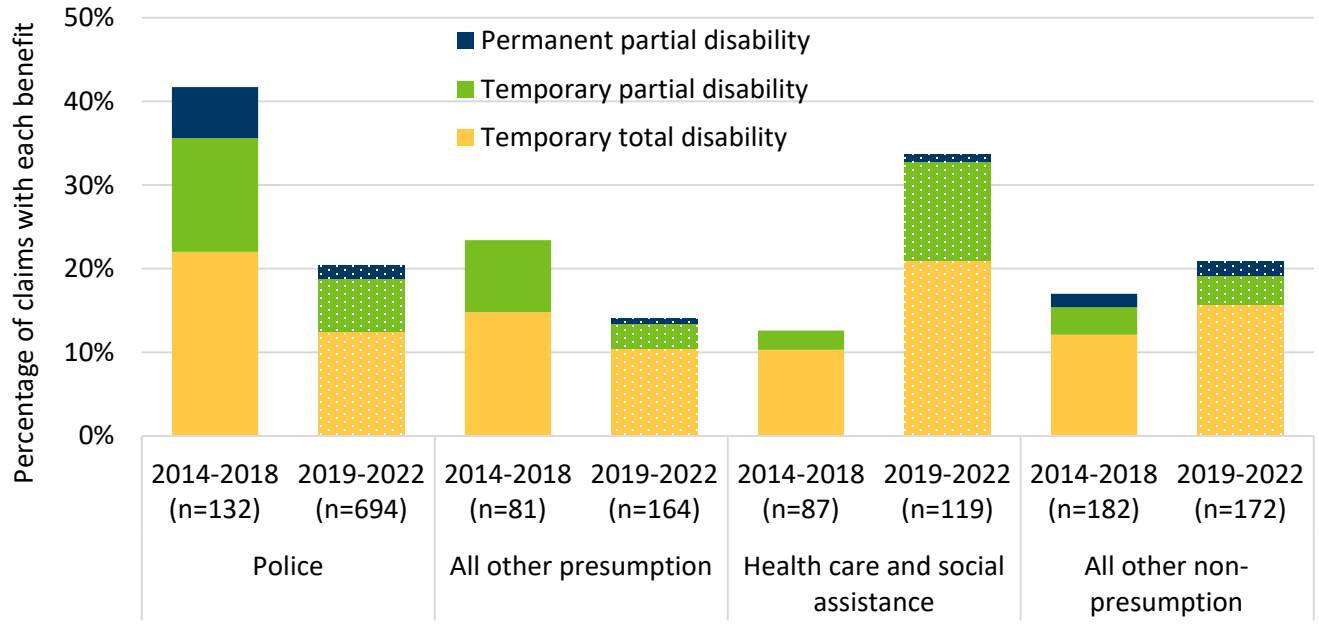
Workers in presumption occupations received indemnity payments for their PTSD claims more often than workers in non-presumption occupations (Figure 4.16). Among workers in presumption occupations, the frequency of PTSD claims receiving no indemnity decreased from before to after the presumption as claims with settlement-only payments increased.

Figure 4.17. Type of indemnity benefits paid by presumption group, denial and presumption period among closed PTSD claims paid benefits



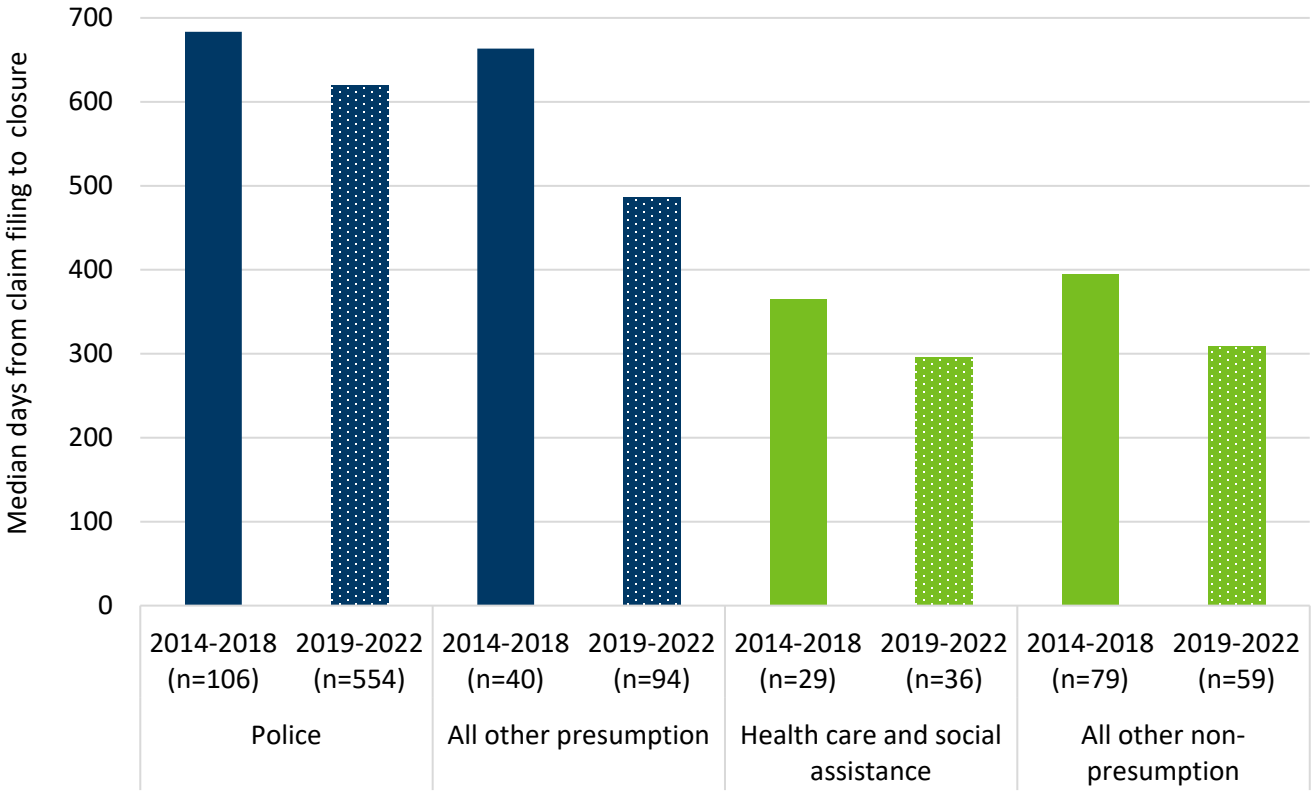
For PTSD claims with indemnity payments, the proportion receiving settlement payments only was far greater when the claims were denied versus accepted, across all occupations and both time periods (Figure 4.17). Among accepted PTSD claims, indemnity payments more frequently involved benefits with no settlement for claims after the presumption compared with the earlier period.

Figure 4.18. Proportion of closed PTSD claims with permanent partial disability, temporary partial disability and temporary total disability payments by worker group and presumption period



Among closed PTSD claims by police and other presumption occupation workers, the proportions receiving TPD and TTD decreased after the presumption (Figure 4.18). In contrast, workers claiming PTSD in health care and social services and other non-presumption occupations were more frequently paid these weekly benefits after the presumption. Very few workers were paid PPD benefits for PTSD claims.

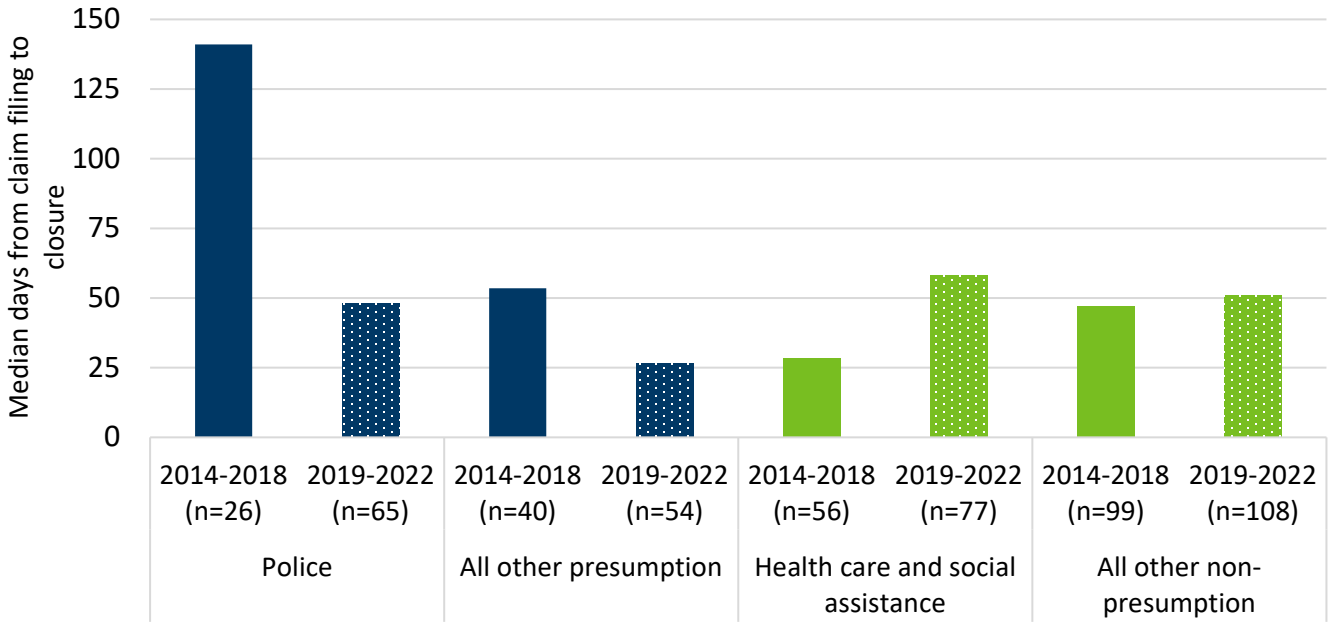
Figure 4.19. Median claim duration by worker group and presumption period among closed PTSD claims with indemnity payments



Claim duration is measured as the number of days from claim filing to claim closure. Among all workers' compensation claims paid indemnity benefits, the median claim duration was 135 days for the injury-years 2014 through 2018 and 111 days for the injury-years 2019 through 2022. As shown in Figure 4.19, the median durations for the PTSD claim groups far exceeded the durations for all indemnity claims.

The median duration of claims receiving indemnity payments was greater among workers in presumption occupations compared to non-presumption workers (Figure 4.19). This is consistent with the higher percentage of presumption claims receiving settlements. The median duration of indemnity PTSD claims decreased from before to after the presumption among all worker groups.

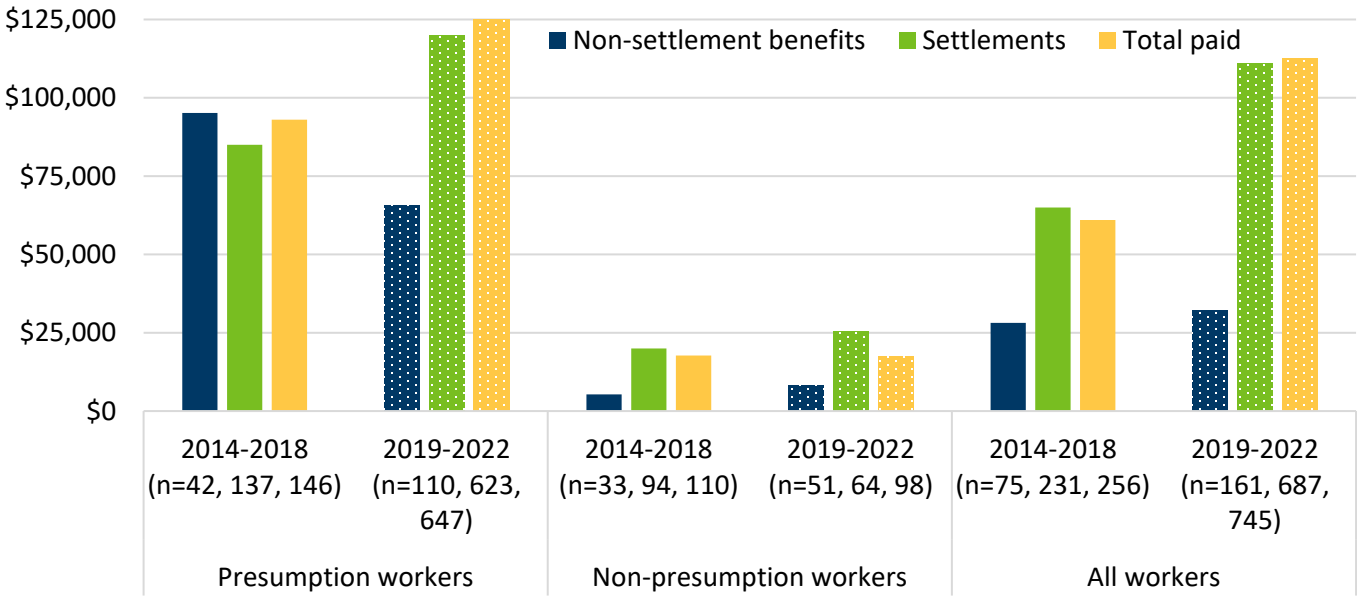
Figure 4.20. Median claim duration by worker group and time period among closed PTSD claims without indemnity payments



The median duration of PTSD claims without indemnity payments were much shorter than those with indemnity benefits. For almost all of these unpaid claims, the claim closure occurred when the claim was denied. The median duration of PTSD claims without indemnity decreased from the pre-presumption law period to the post-presumption law period among police and other presumption occupation workers but increased between the two periods among workers in health care and social services (Figure 4.20).

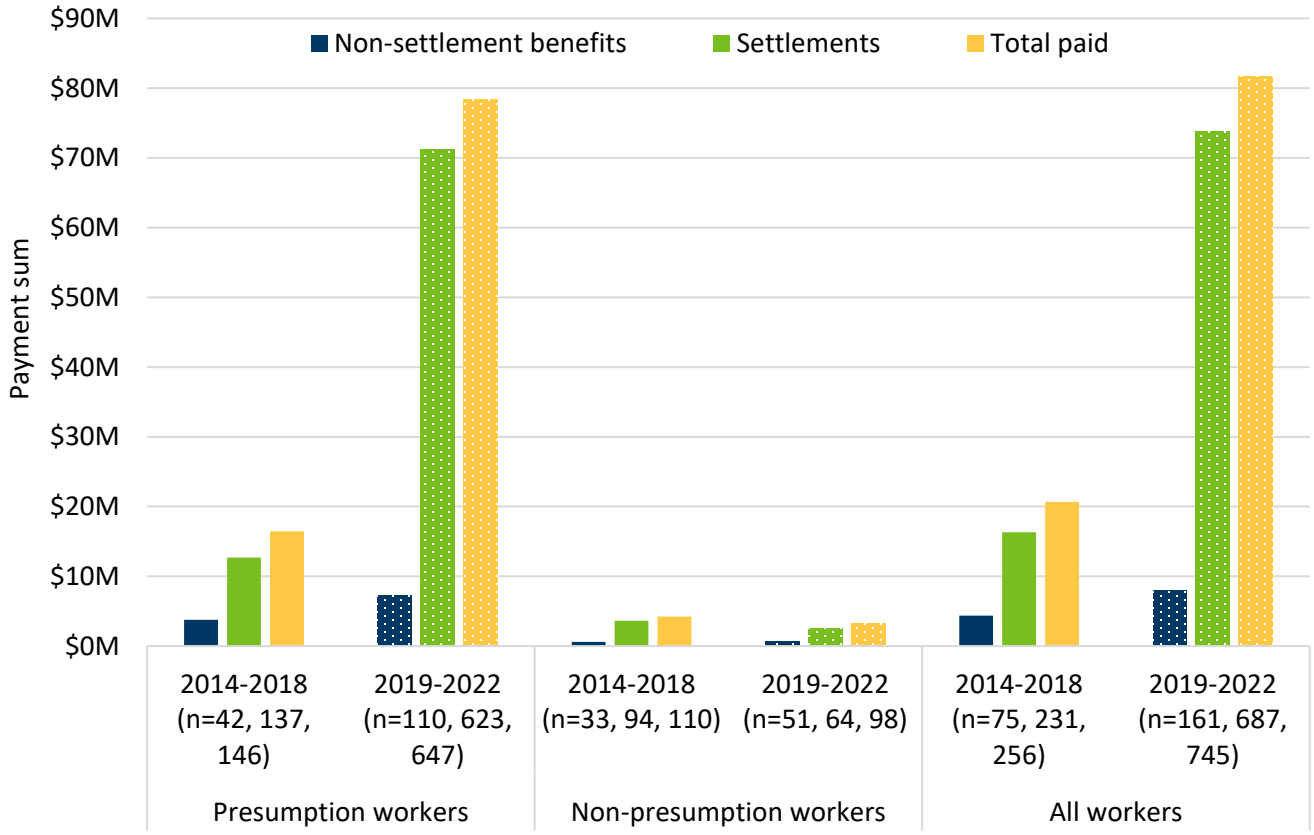
4.1.2.3 Claim payment amounts

Figure 4.21. Median benefit payments per claim by presumption group and presumption period among closed PTSD claims



Among closed PTSD claims that received the indicated payments, the median settlement and median total non-settlement benefit payments per claim before the presumption were more than four times greater among workers in presumption occupations compared to those in non-presumption occupations (Figure 4.21). The median settlement payment increased after the presumption and the median total benefit amount decreased for presumption workers. Looking at the median total payments for more detailed occupations in the period after the presumption (not shown), firefighters had a median indemnity payment of $140,000, police had a median of $125,000 and the other presumption occupations were less than $60,000. Overall, the median indemnity payment after the presumption was $112,500, an 84% increase over the median of $61,000 before the presumption.

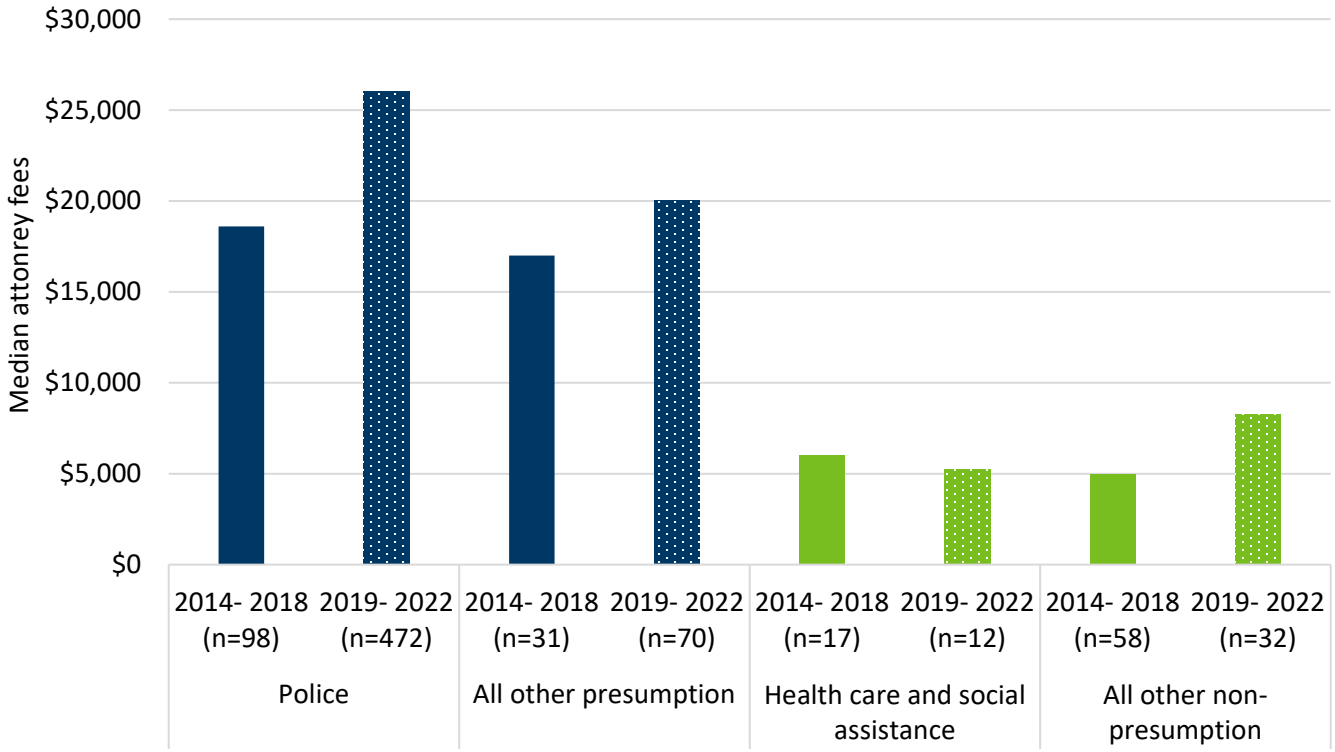
Figure 4.22. Total benefit payments by presumption group and presumption period among closed PTSD claims



The total cost of indemnity benefits for all closed claims with injury dates from 2014 through 2022 was $102 million, 80% of which was provided to workers with claims after the presumption (Figure 4.22). Presumption-covered workers accounted for 93% of the total costs for injuries occurring from 2014 through 2022. Police accounted for 17% of total benefits paid before the presumption and for 85% of the benefits paid after the presumption (data not shown).

The total non-settlement benefit payments among PTSD claims by presumption workers almost doubled after the presumption and their total settlement payments increased by more than five times. Settlement payments to presumption workers accounted for 87% of the total amount of benefits paid after the presumption.

Figure 4.23. Median contingent attorney fees by worker group and presumption period among closed PTSD claims with non-zero fees



During the time period examined in this section, contingent attorney fees were set at 20% of the first $130,000 of compensation awarded to the injured worker, with a cap of $26,000. Attorneys could petition for higher fees. Contingent fees are paid out of the worker's settlement amount. Among closed PTSD claims with attorney fees, the median fee amount was greater among presumption workers than among non-presumption workers (Figure 4.23). The median attorney fees were highest among claims by police and increased by 40% from before to after the presumption, reaching the maximum contingent fee level. A total of $12.7 million in contingent attorney fees were paid for claims after the presumption, representing 16% of indemnity payments for all closed PTSD claims (data not shown). Before the presumption, contingent attorney fees accounted for 14% of total indemnity payments.

4.1.3 Summary of key findings from the DLI claims database

- Injury coding at the time of the First Report of Injury was based primarily on limited and unverified descriptive text in the report, providing a challenge to classification of PTSD (Figure 4.1).
- There was a sharp increase in PTSD claims in 2020, following the enactment of the rebuttable presumption (Figures 4.2 and 4.3).
- Almost half of all PTSD claims were filed by police and 98% of all mental injury claims by police were for PTSD (Figure 4.4).
- Demographic patterns showed claims for mental injuries in occupations covered by the presumption were more often filed by male workers, while claims in non-presumption occupations were predominantly filed by female workers (Figure 4.5).

- Mental injury claims (PTSD and other) in occupations not covered by the presumption were more often filed by older workers, aged 55 years and older, compared to claims in covered occupations (Figure 4.6).
- Among the 1,617 closed claims for PTSD injuries from 2014 to 2022 that had claim path information, the vast majority (92%) were initiated by a First Report of Injury and then were denied (92% of the FROI-initiated claims) (Figure 4.8).
- Claim petitions were a smaller percentage of the initiating documents for PTSD claims by police officers after the presumption law compared to before (Figure 4.9).
- The median length of time between the date of injury and the claim filing date for PTSD claims was shorter after the presumption law by workers in all occupation groups (Figure 4.10).
- Initial denial rates for PTSD claims by workers in occupations covered by the presumption increased from the years before the presumption to after the presumption while denial rates among non-presumption workers decreased during the same time (Figure 4.11).
- For injury-years 2021 to 2023, the most frequent reason for denial of claims for PTSD by workers covered by the rebuttable presumption was that the presumption of compensability did not apply, followed by the injury being deemed as stress and not work-related (Figure 4.12).
- Denied PTSD claims by police and other workers in presumption occupations were more likely to be contested after the presumption compared to before (Figure 4.13).
- The proportion of closed PTSD claims that involved an IME increased from before to after the presumption among police (Figure 4.14).
- Among closed PTSD claims that received any indemnity payments (benefits and/or settlements), the proportion of claims with vocational rehabilitation plans decreased from before to after the presumption among all worker groups, with the sharpest declines occurring among presumption workers (Figure 4.15).
- Workers in presumption-covered occupations received indemnity payments for their PTSD claims more often than workers in non-presumption occupations. Among presumption occupation workers, the percentage of claims paid only through a settlement increased from before to after the presumption (Figure 4.16).
- Among PTSD claims with indemnity payments, the proportion receiving only settlement payments was far greater when the claims were denied versus not denied, across all occupations and in both time periods (Figure 4.17).
- For PTSD claims that were not denied, the indemnity payments for claims after the presumption more frequently involved benefits paid without a settlement (Figure 4.17).
- The proportion of PTSD claims from presumption occupation workers who received weekly benefits decreased from before to after the presumption. In contrast, workers claiming PTSD in health care and social services and other non-presumption occupations qualified more frequently for weekly benefits after the presumption compared to before (Figure 4.18).
- The median duration (filing date to claim closure date) of claims receiving indemnity payments was greater among workers in presumption-covered occupations compared to non-presumption workers. The duration of PTSD claims with indemnity benefits decreased from before to after the presumption among workers in all occupations but remained much greater for police than for the other occupations (Figure 4.19).
- Among closed PTSD claims, the median settlement amount and median non-settlement payments per claim before the presumption were more than four times greater among workers in presumption

occupations compared to those in non-presumption occupations. After the presumption, the median settlement payment increased and the median non-settlement benefit amount decreased for presumption worker claims (Figure 4.21).

- The total amount of non-settlement benefit payments among PTSD claims by presumption workers almost doubled from before to after the presumption. However, the total amount of settlement payments increased more than five times during the same period (Figure 4.22).
- Among closed PTSD claims with attorney fees, the median fee amount per claim was more than two times greater among presumption workers than among non-presumption workers. The median attorney fees were highest among claims by police and increased from before to after the presumption (Figure 4.23).

4.1.4 Discussion

This analysis of Minnesota's workers' compensation mental injury claims from 2014 to 2023 reveals important patterns in the characteristics, outcomes and trends of PTSD and other mental injury claims. PTSD claims were the most common mental injury filings, with presumption workers — particularly police officers — representing a substantial share. Despite the enactment of the PTSD rebuttable presumption law in 2019, denial rates remained extremely high for PTSD claims, suggesting the presumption has not yet substantially lowered barriers to initial claim acceptance. Although presumption workers were more likely than non-presumption workers to receive some form of payment even after a denial, the overwhelming majority of PTSD claims continued to be denied following claim filing.

Differences in occupational profiles highlight the distinct nature of PTSD-related claims. Public safety employees were disproportionately represented among PTSD claims, whereas non-PTSD mental injury claims were more likely to be filed by workers in health care and social service occupations. Claim duration analysis showed that PTSD claims that received indemnity payments, including settlements, remained open far longer among presumption workers than among non-presumption workers and the rebuttable presumption law did not substantially reduce this duration, especially among police. The more frequent use of settlements and involvement of independent medical examinations after enactment of the presumption law created a more complex and prolonged claims resolution process for PTSD injuries incurred by presumption workers.

Post-presumption law trends suggest mixed impacts. The already high denial rates among presumption-covered workers increased after the presumption was enacted. The most frequent reason for denying PTSD claims by presumption workers in the last three years of the study was that the presumption of compensability did not apply, indicating the rebuttable presumption has not worked as intended. While workers in presumption-covered occupations received indemnity payments more often after the presumption, these payments were more likely to be through a stipulated settlement. Higher settlement rates in the presumption period led to increased total settlement payments and may also explain why weekly benefits and vocational rehabilitation filings were less frequent after the law was passed. These findings suggest that while the presumption law may have increased the frequency of settlements among workers, it has not uniformly lowered the denial threshold or improved important claim outcomes.

However, there were some positive outcomes in the post-presumption law period. Workers in all occupations filed claims more quickly after a mental injury after the presumption compared to before the presumption, which may demonstrate improved recognition of early PTSD symptoms. After the presumption, police officers were less likely to file claim petitions as the initiating document in PTSD claims and the median duration of non-

indemnity PTSD claims by police was shorter, pointing to possible improvements in the early stages of the claim process for these workers.

Administrative coding challenges, particularly at the first report of injury, complicate early identification of PTSD claims in the DLI claims database. These challenges are primarily caused by the limited information available on many of the First Reports of Injury and the non-standardized language used for psychological injuries. The database identified non-PTSD mental injury claims that were accepted for benefits. The non-PTSD mental injuries are not compensable and so any of these claims that received benefits may have been mis-identified (such as, they were actually PTSD claims or were non-PTSD claims consequential to a physical injury) because of incomplete information. These findings reinforce the need to improve data collection and surveillance of mental injury claims in a workers' compensation system primarily designed for physical injuries.

4.2 Medical treatments for workers' compensation PTSD claims

The objective of this analysis is to characterize the frequency and costs of medical treatment associated with workers' compensation PTSD claims in Minnesota, based on data provided by the Minnesota Workers' Compensation Insurers Association (MWCIA). This section also examines trends in the frequency, costs and duration of PTSD-related medical treatment, and includes comparisons with other types of workers' compensation claims.

Attempts were made to procure claims data that included medical treatments and services from self-insured employers and claims administrators. Although there was interest in assisting with this project, none of the other sources had enough full claims data to be useful in a quantitative analysis. This left the MWCIA data as the best available medical data.

4.2.1 Methods

DLI does not collect medical data on workers' compensation claims. Medical cost data were obtained from the Medical Data Call, a comprehensive database collected from insurers by the National Council on Compensation Insurance on behalf of MWCIA. Excluding claims from self-insured employers, the Medical Data Call captures all workers' compensation-related medical transactions, including those associated with medical-only claims, and has been reported annually since 2010. These medical data only reflect payments for claims that were accepted for coverage. Also, by using the International Classification of Diseases, 10th Revision (ICD-10) diagnostic codes to categorize PTSD and non-PTSD claims, some of the cost associated with treating injured workers might not be captured. For example, pharmaceutical costs are not accounted for because they are captured by Healthcare Common Procedure Coding System (HCPCS) codes, not ICD-10 codes. These factors lead to an underestimation of the overall cost based on data from the Medical Data Call.

For purposes of this study, MWCIA provided DLI with specially prepared aggregate datasets that included all PTSD-related claims identified in the full Medical Data Call as of December 2024. The aggregated data provided by MWCIA included the following information: total medical payments; average medical payments per claim; service counts by provider type; service location and procedure code; and average service counts and treatment duration per claim. Medical costs included only those paid through workers' compensation and excluded treatments provided after a settlement. To protect confidentiality and ensure statistical stability, provider types, service locations and procedure codes were grouped into broad categories.

Specific groups of claims were defined based on injury type using ICD-10, a standardized system used to classify and code diagnoses, symptoms and procedures for medical records and billing. The ICD-10 diagnostic codes

used in this study are summarized in Table 4.1. These claim groups allowed for comparisons of medical treatments between PTSD claims and other injury types. DLI provided MWCIA with detailed inclusion criteria for these groups, enabling the creation of standardized, aggregate-level datasets that formed the basis of the analyses presented in this section.

Table 4.1. Criteria for identifying comparison groups of claims in the Medical Data Call

Comparison group	ICD-10 diagnosis codes
PTSD-only claims	F43.1 Post-traumatic stress disorder F43.10 Post-traumatic stress disorder, unspecified F43.11 Post-traumatic stress disorder, acute F43.12 Post-traumatic stress disorder, chronic
PTSD as primary diagnosis **Physical injury as secondary diagnosis**	Primary diagnosis: • F43.1 Post-traumatic stress disorder • F43.10 Post-traumatic stress disorder, unspecified • F43.11 Post-traumatic stress disorder, acute • F43.12 Post-traumatic stress disorder, chronic Secondary diagnosis: • S00-T88 Injury, poisoning and certain other consequences of external causes
PTSD as secondary diagnosis **Physical injury as primary diagnosis**	Primary diagnosis: • S00-T88 Injury, poisoning and certain other consequences of external causes Secondary diagnosis: • F43.1 Post-traumatic stress disorder • F43.10 Post-traumatic stress disorder, unspecified • F43.11 Post-traumatic stress disorder, acute • F43.12 Post-traumatic stress disorder, chronic
Physical injury-only claims	S00-T88 Injury, poisoning and certain other consequences of external causes

4.2.2 Results

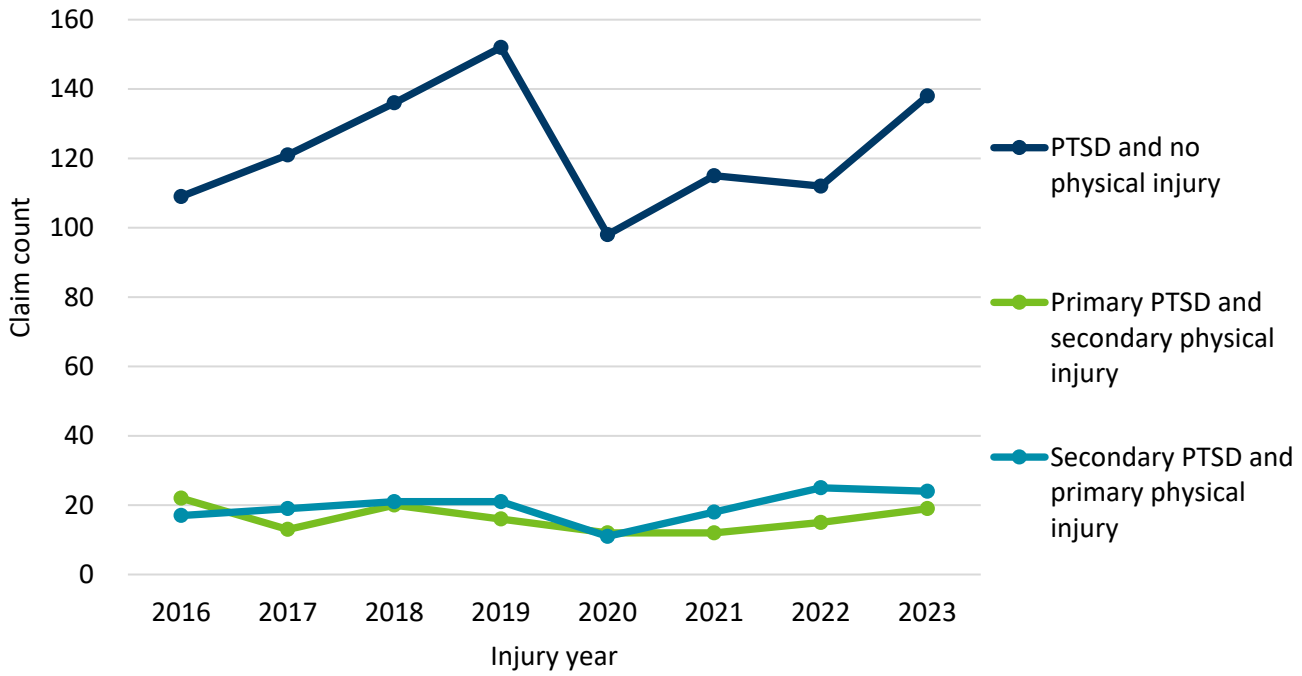
4.2.2.1 Comparing treatment counts, costs, location and duration among PTSD claims by presence or absence of physical injuries

This analysis of medical treatment patterns for PTSD workers' compensation claims from 2016 to 2023 revealed consistent trends in treatment visit counts, costs, service locations and duration. Injury-year counts of PTSD-only claims with treatment payments were substantially higher than PTSD claims involving concurrent physical injuries, although both groups represented a small fraction of the number of physical injury claims that received payments for treatment. Total treatment costs by injury year for PTSD-only claims exceeded those for PTSD and physical injury claims, but were significantly lower than the total treatment costs associated with physical injury-only claims (which account for nearly all claims in the workers' compensation system). A notable decline in both

the number of treated PTSD claims and their associated costs occurred between 2019 and 2020, coinciding with the COVID-19 pandemic.

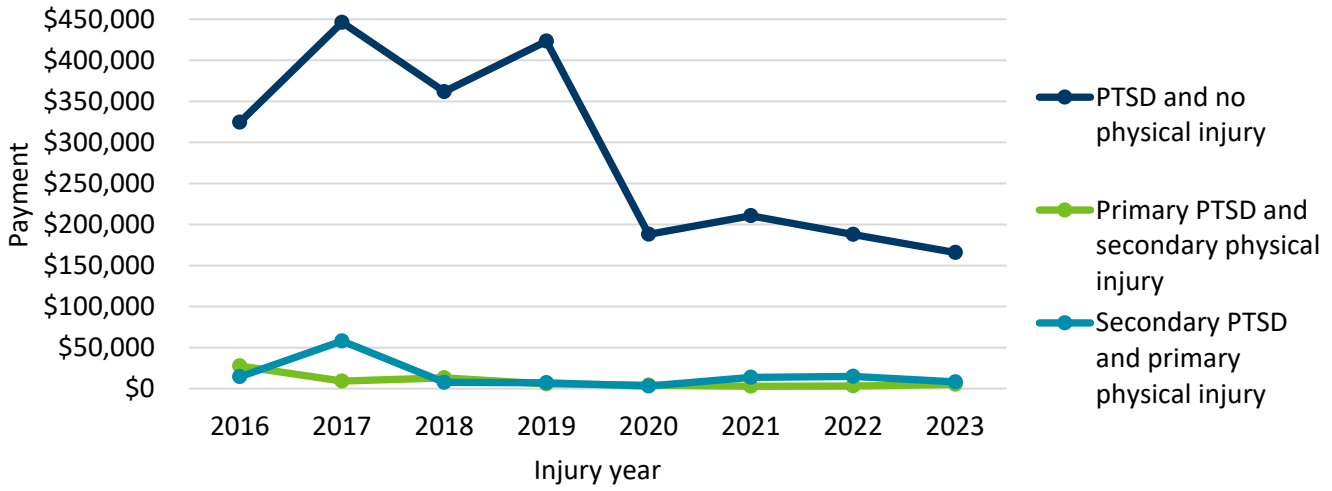
Median treatment costs per PTSD-only claim were initially more than twice those of physical-injury-only claims but steadily declined over the study period, while median costs for physical-injury-only claims gradually increased. Both PTSD-only and physical-injury-only claims predominantly involved office-based services, with a smaller but consistent share treated in hospital outpatient settings. Initially, PTSD-only claims required a greater number of treatment visits and longer treatment durations than physical-injury-only claims, although these differences narrowed over time. By injury-year 2023, the number of treatment visits and duration of care for PTSD-only claims approached levels similar to those observed in physical-injury-only claims. These trends may reflect increased reliance on settlements, pandemic-related disruptions in medical care and the incomplete treatment histories of more recent injury claims.

Figure 4.24. Annual counts of PTSD claims with treatment payments by injury year



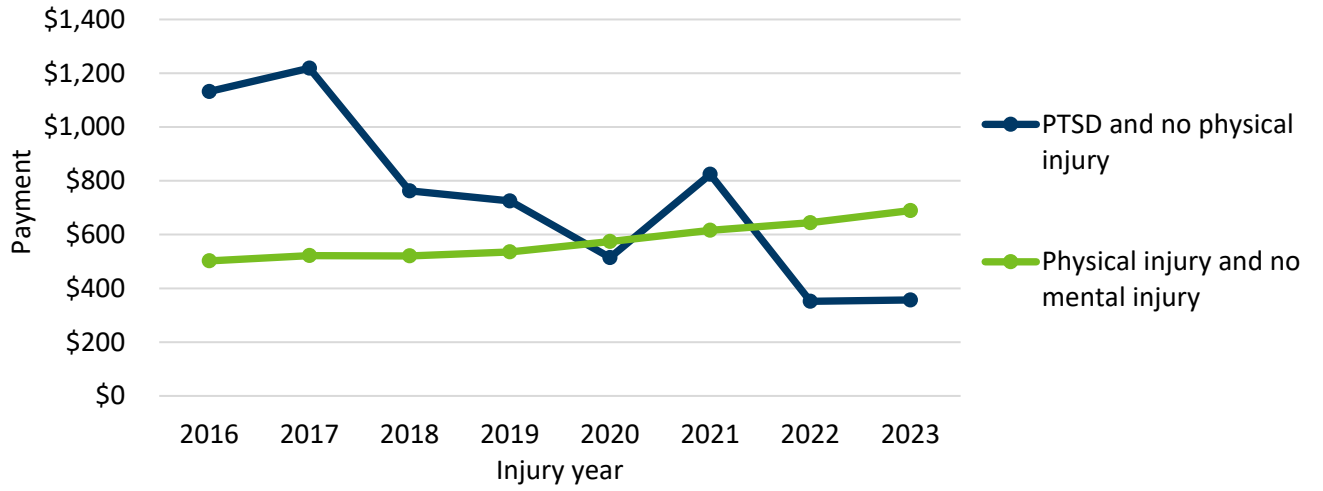
In all injury years, 2016 to 2023, the counts of PTSD-only claims with treatment payments (98-152 a year) were at least five times greater than for PTSD claims that involved physical injuries (11-24 a year) (Figure 4.24). The annual counts of PTSD-only claims with treatment payments were far lower than the numbers of physical-injury-only claims with treatments (36,840 to 48,813 a year, data not shown). The largest year-to-year decrease in counts of treated claims occurred between injury-years 2019 and 2020 (36%), during the pandemic. This decrease was also observed among physical injury-only claims (data not shown). Counts of treated PTSD-only and physical-injury-only claims rebounded from the lows of 2020 to reach pre-pandemic levels in 2023.

Figure 4.25. Total treatment costs of PTSD claims by year of injury



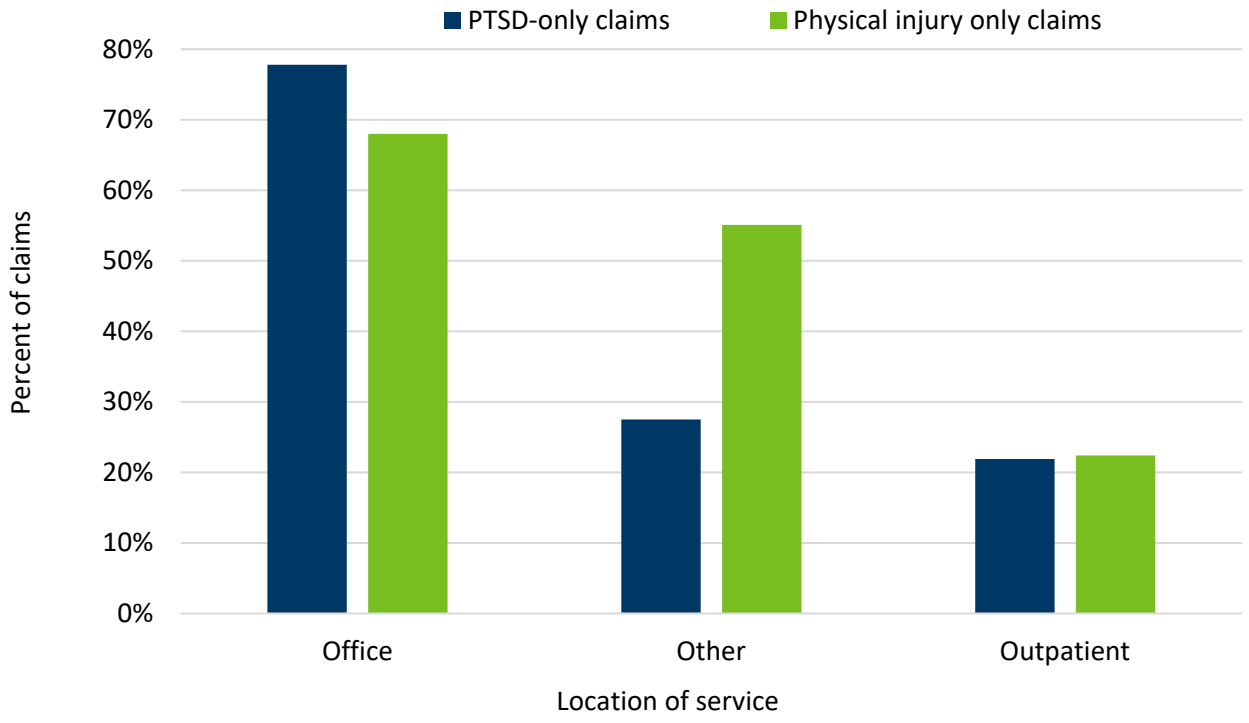
Consistent with treated claim counts, the annual system-wide treatment costs (summed across claims) of PTSD-only claims ($165,800 to $446,100 a year) were greater than those of PTSD claims that also involved physical injuries ($2,900 to $58,000 a year), but far lower than those of physical injuries with no mental injuries (~$99 million to ~$127 million, data not shown). The largest year-to-year decrease (56%) in total treatment costs for PTSD-only claims occurred between 2019 and 2020, during the pandemic (Figure 4.25). The MWCIA-captured treatment costs used to treat PTSD-only injuries ranged from 0.32% to 0.38% of total treatment costs (estimated from the MWCIA data) paid by insurers in injury-years 2016 through 2019, and 0.13% to 0.19% in 2020 through 2023 (data not shown). It is important to note the MWCIA dataset does not include self-insured claims and the payments shown here do not represent the total treatment costs to the workers' compensation system. Because the prevalence of self-insured employers is different between workers claiming PTSD and workers claiming non-mental injuries, it is difficult to use the MWCIA data to estimate the proportion of the total workers' compensation treatment costs attributed to PTSD claims. Additionally, the estimated cost from the Medical Data Call using diagnostic codes might not capture all costs associated with a given claim. These factors combined contribute to an underestimate of medical cost as estimated from the Medical Data Call.

Figure 4.26. Median treatment cost per claim for PTSD-only and physical-injury-only claims by injury year



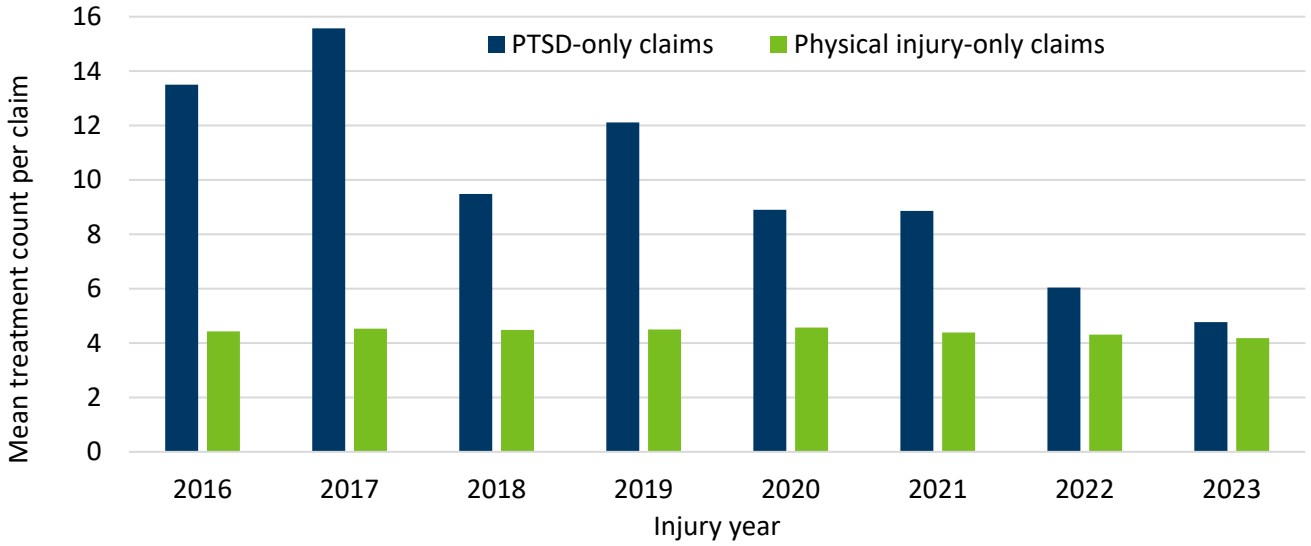
During the early injury-years of the study period (2016 and 2017), the median treatment cost per PTSD-only claim was more than twice that of physical-injury-only claims (Figure 4.26). Following 2017, the median cost for PTSD-only claims decreased for each injury year (except 2021) to $357 in 2023. In contrast, the median treatment cost per claim for physical-injury-only claims increased steadily during the study period to a high of $689 for 2023 claims. Median treatment costs are based on the entire set of treated claims, including medical-only claims. The majority of workers' compensation claims are medical-only claims, which are generally much less severe and require fewer medical services than indemnity claims.

Figure 4.27. Comparison of service locations between PTSD-only and physical-injury-only claims



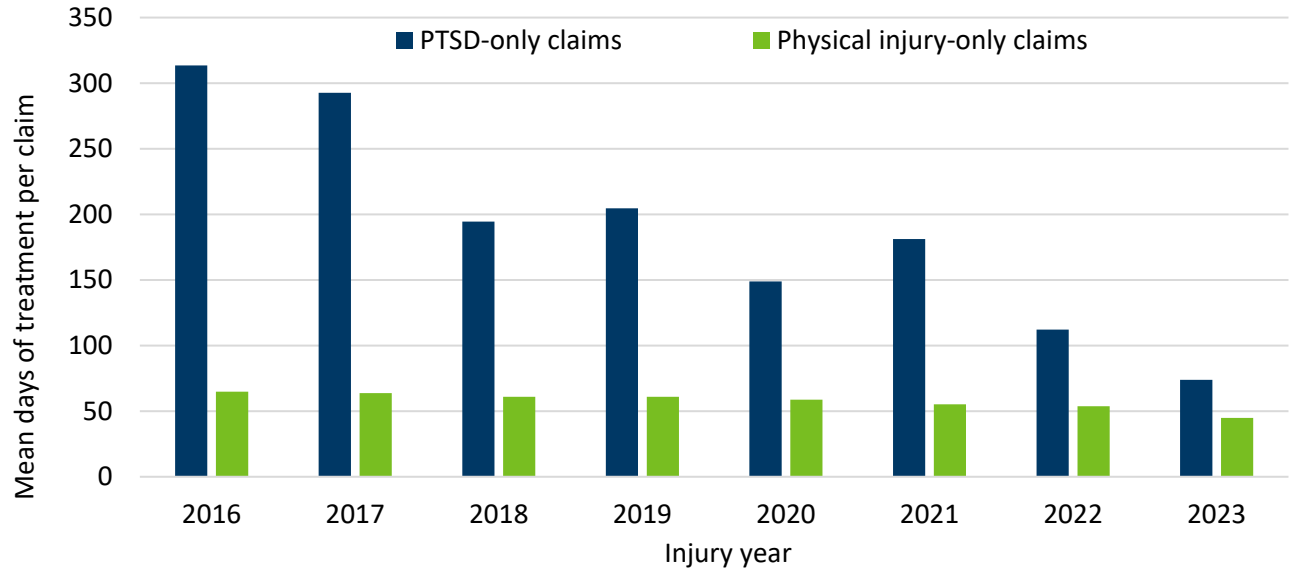
Analysis of service locations revealed that both PTSD-only claims (78%) and physical-injury-only claims (68%) were treated most frequently in office settings (Figure 4.27). Hospital outpatient facilities accounted for 22% of service locations for both PTSD-only claims and physical-injury-only claims, indicating broadly similar patterns in the site of care delivery. Other locations accounted for 28% of service for PTSD-only claims and 55% of physical injury claims. An injured worker can receive treatment in more than one location of service; therefore, these percentages add up to more than 100%.

Figure 4.28. Average number of medical treatment visits per claim by injury year



During the study period, PTSD-only claims involved more treatment visits, on average, than did physical-injury-only claims (Figure 4.28). However, this gap in treatment visit counts between the two claim types narrowed over time. For injuries in 2016, the mean number of treatment visits per claim (13.5) among PTSD-only claims was three times greater than among physical-injury-only claims (4.4). By 2023, the mean treatment visit count per claim was more similar between PTSD-only claims (4.8) and physical-injury-only claims (4.2).

Figure 4.29. Average duration of medical treatment (first to last visit) per claim by injury year



During the study period, PTSD-only claims had longer average treatment periods than physical-injury-only claims. However, this gap in treatment duration narrowed over time (Figure 4.29). For PTSD injuries in 2016, the duration between the first and last treatments was nearly five times greater among PTSD-only claims (314 days) than among physical-injury-only claims (65 days). By 2023, the average treatment period duration per claim was more similar between PTSD-only claims (74 days) and physical-injury-only claims (45 days). The decreasing

number of services and treatment duration over time among PTSD claims may coincide with increasing proportions of denied PTSD claims that received only settlement payments. Claims receiving payments only through settlements are less likely to report medical care to the insurer. In addition, the COVID-19 pandemic may have played a role in reducing treatments. However, it is important to note that claims for injuries incurred during the last year in this study are less likely to have completed their courses of treatments compared to those in earlier years.

4.2.3 Discussion

The results demonstrate PTSD-related workers' compensation claims covered by insured employers (as opposed to self-insured employers) are comparatively rare relative to physical injury claims and total treatment costs for PTSD claims are a small fraction of total treatment payments. PTSD-only claims showed higher treatment costs per claim, more treatment sessions and longer treatment periods than physical-injury-only claims during the earlier years of this study. However, over time, there was a convergence in these treatment patterns between PTSD and physical injury claims.

Several factors may have contributed to this trend. First, newer PTSD claims have on average, six to 10 fewer sessions than older claims. Second, the COVID-19 pandemic likely disrupted access to mental health services, reducing overall utilization. Third, claims from more recent injury years are inherently less likely to show complete treatment trajectories due to the shorter follow-up period available.

Importantly, while PTSD claims continue to require meaningful medical support, the observed narrowing in service utilization metrics may indicate systemic barriers to sustained care or changing settlement practices rather than a true reduction in medical need. Further monitoring is needed to assess whether these trends persist.

4.3 Return-to-work trends among PTSD claims in Minnesota's workers' compensation system

The objective of this analysis is to assess the rate at which workers return to employment following a work-related mental injury claim involving PTSD and to identify patterns in return-to-work outcomes across occupational groups before and after the effective date of Minnesota's PTSD presumption law.

4.3.1 Methods

The Minnesota Department of Employment and Economic Development (DEED) maintains quarterly wage detail records for all workers employed in Minnesota who are not self-employed (or independent contractors) and who qualify for unemployment insurance (UI), including the number of hours worked, wages and industry codes. Worker Social Security numbers from 3,063 mental injury claims in the Minnesota workers' compensation system between January 2014 and June 2023 were used to query wage detail data from DEED between January 2013 and June 2024. The extracted quarterly data was then aggregated across quarters to create an unduplicated file with annual employment data that was linked to the original workers' compensation claim file for analysis.

The return-to-work analysis used 2,483 claims closed between 2014 and 2023, coded as PTSD or as an "other mental injury" (not PTSD), and that were paid benefits or denied (removing claims that did not continue through the claim process).

Three data sources were used to determine if an employee returned to work within a year following closure of their claim:

- **the notice of intent to discontinue (NOID) forms**, indicating indemnity benefits were stopped because the employee returned to work;
- **the vocational rehabilitation closure forms**, indicating if the worker returned to work, either with the same employer or a different employer; and
- **the DEED wage detail records**, showing wage earnings in Minnesota within one year following the closure of the workers' compensation claim.

Claims for which no wage records were found across the entire 2013 through 2024 period and that lacked any other return-to-work indicator were excluded from the final analysis (n=126). A worker without another return-to-work indicator and without wage detail data for the year after claim closure was treated as "not employed" for that year, but was retained in the analysis denominator. The final analytic sample included 2,357 claims.

Return-to-work outcomes were stratified by injury type (PTSD versus other mental injuries), presumption coverage status (presumption versus non-presumption occupations) and major occupation categories. The police occupation group includes members of local police departments, sheriff's offices and the Minnesota State Patrol. The corrections occupation includes municipal, county and state corrections officers. Because these groups are occupation-based, other police, fire and corrections department workers are not included in these presumption groups.

The analysis also delineates outcomes for workers with injury dates before and after the 2019 PTSD presumption law effective date to assess the potential impact of the statutory change on return-to-work patterns. Results for 2023 injury claims should be considered preliminary because many of these claims were open when the claims were analyzed.

4.3.2 Results

Analysis of return-to-work outcomes for workers with PTSD claims between 2014 and 2023 revealed several critical patterns. Following enactment of the PTSD presumption law in 2019, the one-year return-to-work rate among presumption workers declined notably, from 67% to 55% (Figure 4.30a) after the presumption. In contrast, non-presumption workers maintained stable or slightly improving return-to-work rates across the same period. Many factors affected returning to work, including claim denial and settlement.

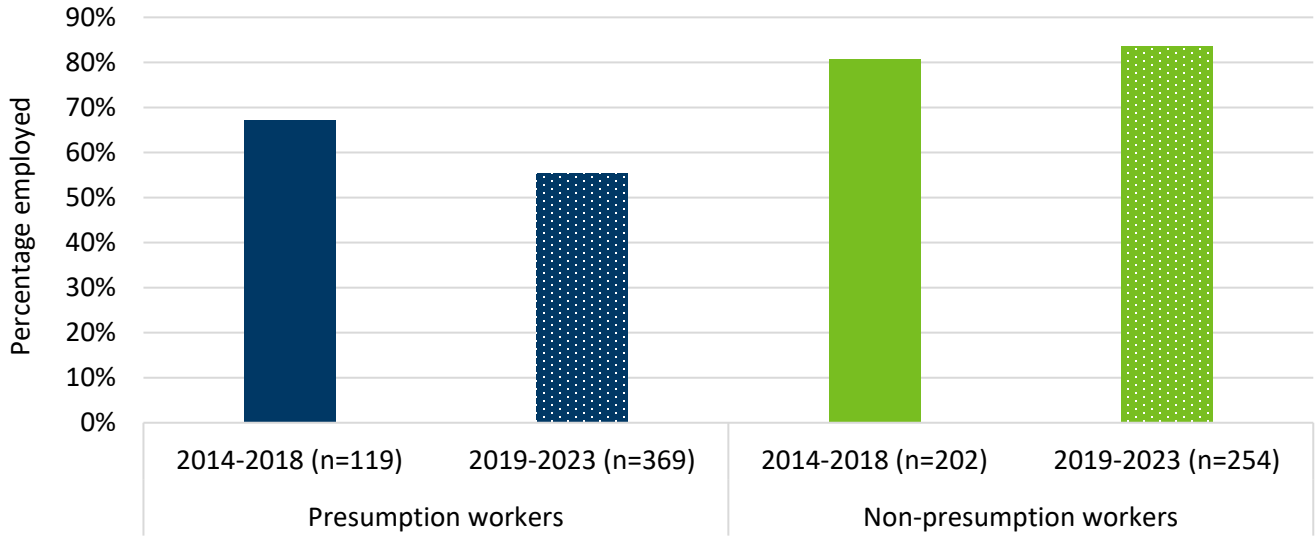
Occupation-specific results showed police officers experienced a significant decline in return-to-work rates after the presumption, falling from 68% to 52% (Figure 4.31). All other occupation groups (presumption and non-presumption) returned to work at higher rates after the presumption. However, these differences in return-to-work rates were heavily influenced by the denial and payment differences among the occupation groups.

Workers' job tenure at the time of injury also emerged as a strong predictor of return-to-work outcomes, with those having longer tenures consistently demonstrating lower return-to-work rates within a year of claim closure.

Geographic disparities were evident, with workers based in the seven-county Twin Cities metropolitan area consistently returning to work at lower rates compared to all other workers. However, after the presumption, non-metro police officers experienced a steep 23 percentage point drop in return-to-work rates to a level that was similar to their Twin Cities metropolitan counterparts (Figure 4.36b).

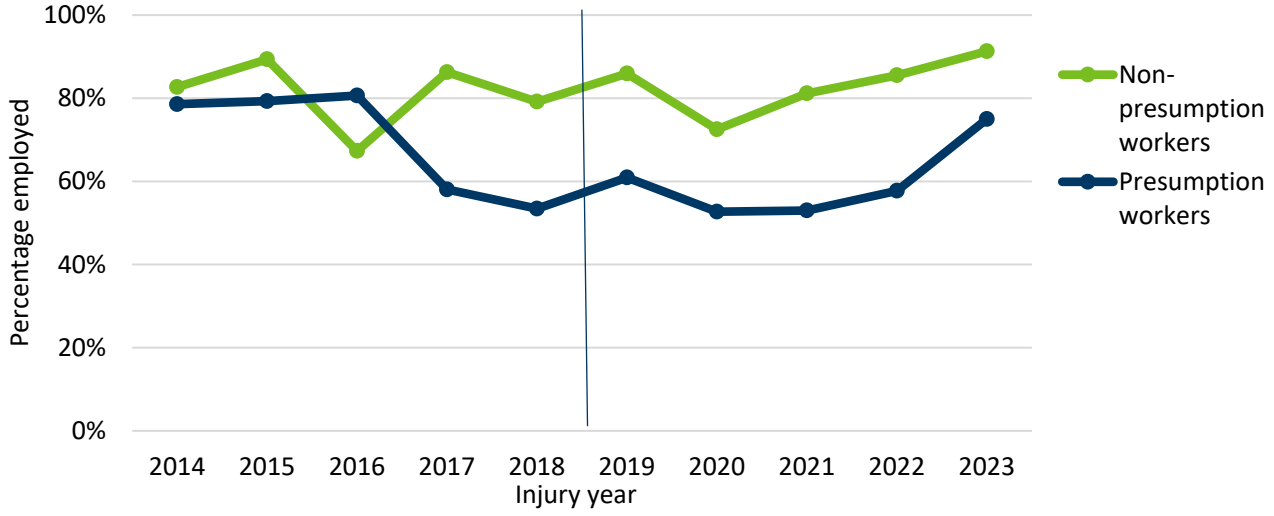
Claims handling and indemnity payment were closely associated with return-to-work outcomes. Workers who were paid settlements or indemnity following a claim denial had the lowest return-to-work rates. Industry retention also declined substantially among presumption workers, with only 30% remaining in the same industry following the presumption, compared to 64% of non-presumption workers (Figure 4.37a). Vocational rehabilitation outcomes reflected similarly challenging patterns, particularly among presumption workers, who were increasingly unlikely to return to the same employer or even the same industry post-claim (Figure 4.37b).

Figure 4.30a. Return-to-work rates among PTSD claims by presumption group and presumption period (case counts show number of employed workers)



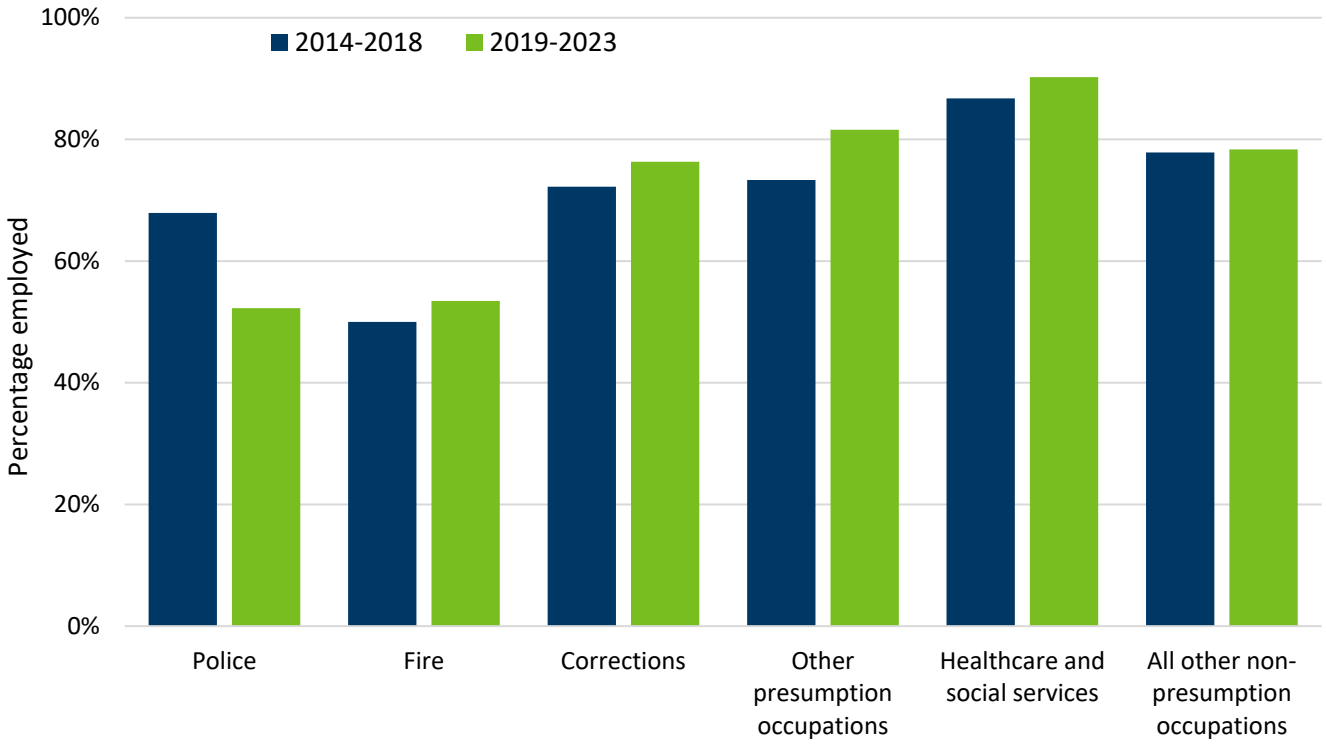
While non-presumption workers returned to work within a year of claim closure at similar rates before and after the presumption took effect, a lower percentage of presumption workers with claims after the presumption returned to work compared to those with claims before the presumption (55% versus 67%) (Figure 4.30a). This is a high-level result, and it masks differences occurring within each of the presumption worker groups. The figures and discussion that follow provide a closer look at the various factors and within-group differences.

Figure 4.30b. Return-to-work rates among PTSD claims by presumption group by injury year



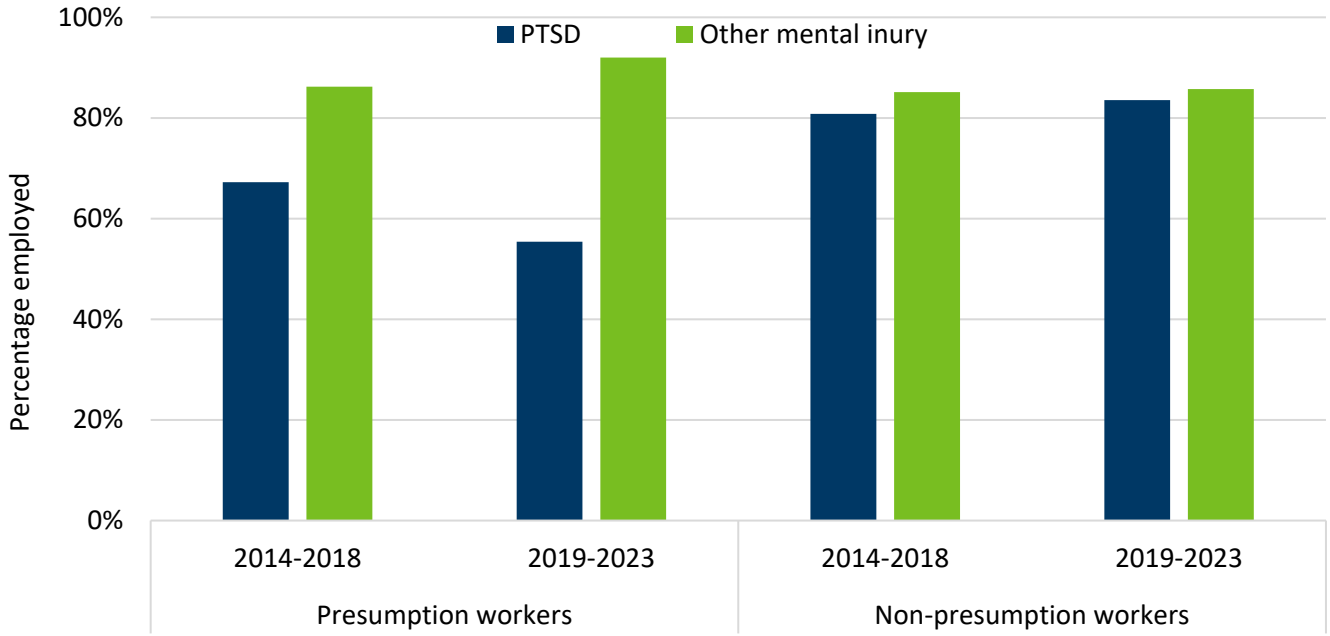
With the exception of 2016, presumption workers, as a whole, returned to work at a lower rate than non-presumption workers (Figure 4.30b). From 2017 onward, the return-to-work rates for both groups of workers followed a similar trend while maintaining a considerable gap. Both groups of workers showed increasing return-to-work rates after 2021, with the presumption worker rate increasing more rapidly but remaining below non-presumption workers (from 58% in 2022 to 75% in 2023, compared to 86% to 91% for non-presumption workers).

Figure 4.31. Return-to-work rates among PTSD claims by occupation and presumption period



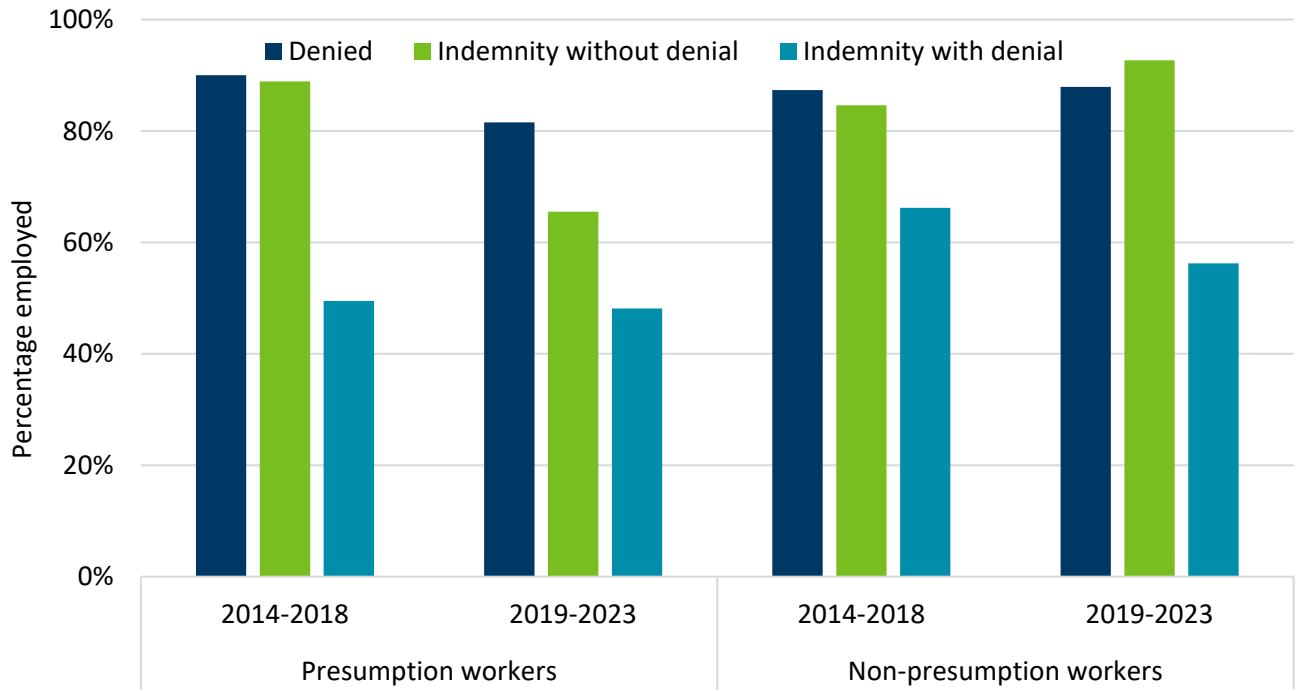
Most occupations had a similar or slightly higher return-to-work rate within a year of claim closure for injuries after the presumption compared to before (Figure 4.31). The exception was police officers, whose one-year return-to-work rate dropped from 68% to 52%. The largest drop in return-to-work rates among police occurred in 2017 (from 77% to 59%) and held steady between 49% and 59% since then (data not shown). After the presumption, firefighters and police officers had similar return-to-work rates. The figures that follow look at some of the reasons for the difference in return-to-work rates between police and other presumption occupations.

Figure 4.32. Return-to-work rates by presumption group, presumption period and mental injury type



Among non-presumption workers, those with PTSD claims and other mental injury claims returned to work at comparable rates both before and after the presumption took effect (Figure 4.32). Presumption workers with PTSD returned to work at a much lower rate (67%) than those with other mental injuries (86%) prior to the presumption; the enactment of the presumption increased this rate disparity (55% versus 92%).

Figure 4.33a. Return-to-work rates among PTSD claims by presumption group, presumption period and claims handling decision



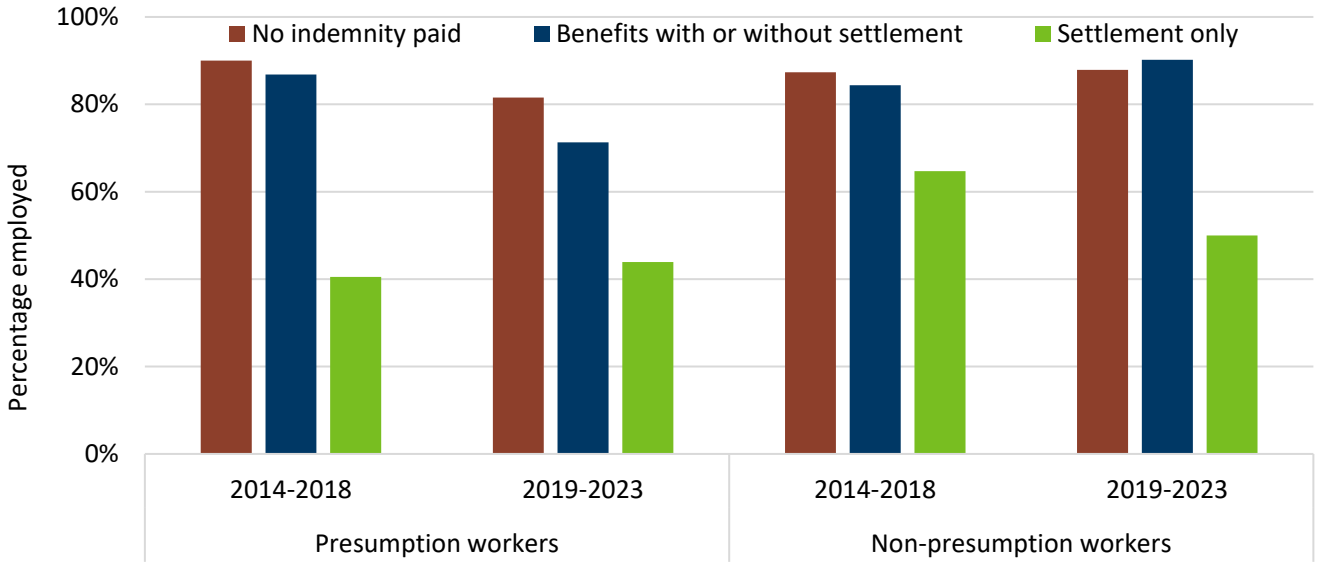
Workers paid indemnity following a denial (the largest claims-handling group, representing 52% of all PTSD claims) consistently returned to work within a year of claim closure at the lowest rate compared to those whose claims were denied or were paid indemnity without a denial (Figure 4.33a). The return-to-work rate patterns by claims-handling category were alike for non-presumption workers before and after the presumption and for presumption workers before the presumption, with similar rates for those with denied claims compared to those paid indemnity without denial. However, presumption workers who claimed an injury after the presumption returned to work at the lowest rates for each claims-handling category and workers who were paid indemnity without a denial (the smallest group at only 8% of all PTSD claims) returned to work at a lower rate than workers whose claims were denied.

Table 4.2. Claims handling and return-to-work rates among PTSD claims by police and other presumption workers

			Percentage of claims			Return-to-work percentage			
Presumption occupation	**Years**	**Number of claims**	**Denied**	**Indemnity without denial**	**Indemnity with denial**	**Denied**	**Indemnity without denial**	**Indemnity with denial**	**All claims**
Police	2014-2018	106	22%	13%	65%	100%	86%	54%	68%
	2019-2023	532	13%	4%	84%	69%	68%	49%	52%
Other presumption workers	2014-2018	71	52%	6%	42%	84%	100%	40%	66%
	2019-2023	134	46%	8%	46%	95%	60%	42%	68%

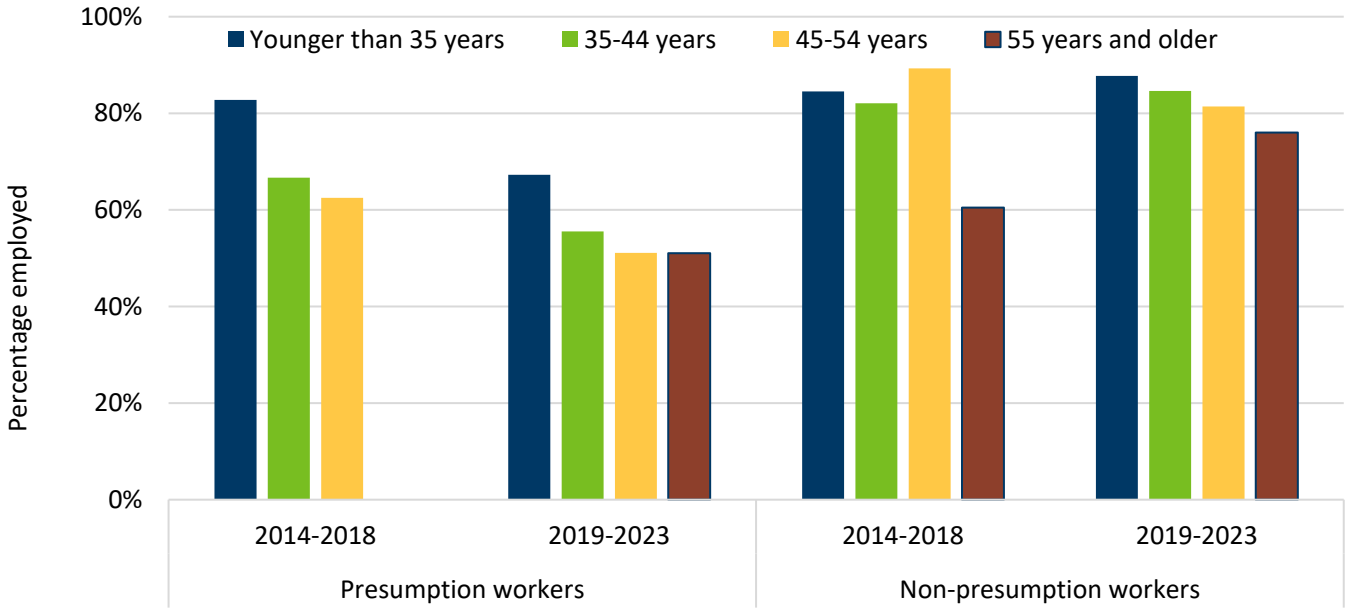
Among the claims with available employment data, differences in the return-to-work rates between police and other presumption-covered workers can be traced to the different percentages of claims within each of the claims-handling categories. As shown in Table 4.2, before the presumption, 65% of police claims were paid indemnity after a denial, compared with 42% of the claims for the other presumption workers. After the presumption, the percentage of these claims increased to 84% for police, but only slightly increased for the other presumption workers. The return-to-work rate for the claims paid indemnity after a denial was the lowest rate among the claims-handling categories. After the presumption, this rate dropped five percentage points among police, but increased by two percentage points among the other presumption workers. For police, the increased percentage of claims paid indemnity after denial and the decreased return-to-work rate for these claims led, in large part, to their large decrease in return-to-work after the presumption, from 68% to 52%.

Figure 4.33b. Return-to-work rates among PTSD claims by presumption group, presumption period and indemnity type



Return-to-work rates differed substantially by type of indemnity payment. Workers paid stipulation-only settlements, the largest indemnity group (44% of PTSD claims), returned to work at the lowest rates, regardless of presumption status (Figure 4.33b). Workers who were paid indemnity with or without a stipulation and those whose claims were not paid at all had higher return-to-work rates. This figure looks similar to Figure 4.33a because the denial status of a claim strongly influences whether an indemnity payment is received through a settlement or as other indemnity benefits.

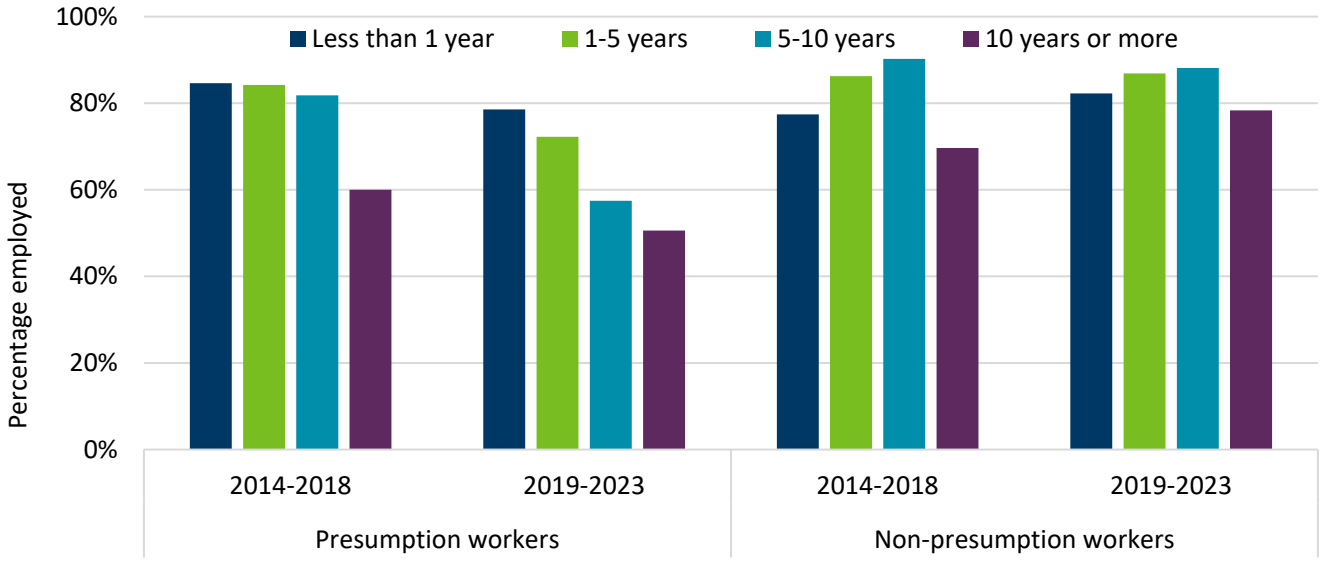
Figure 4.34. Return-to-work rates among PTSD claims by presumption group, presumption period and worker age



Among non-presumption workers, both before and after the presumption took effect, return-to-work rate patterns were comparable across age groups with the exception of the oldest workers, who returned to work at a higher rate after the presumption took effect (Figure 4.34). The number of presumption workers aged 55 or

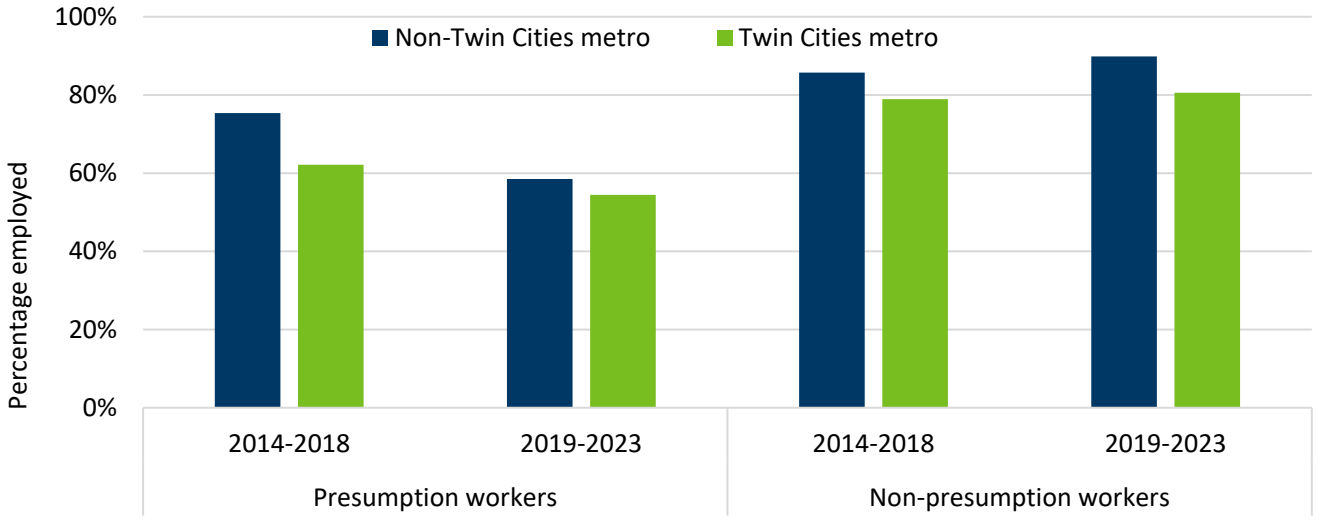
older who filed PTSD claims before the presumption was too small to report, so does not appear as a bar in Figure 4.34. After the presumption, return-to-work rates dropped for presumption workers in all age categories, with older workers returning at slightly lower rates than younger workers.

Figure 4.35. Return-to-work rates among PTSD claims by presumption group, presumption period and job tenure



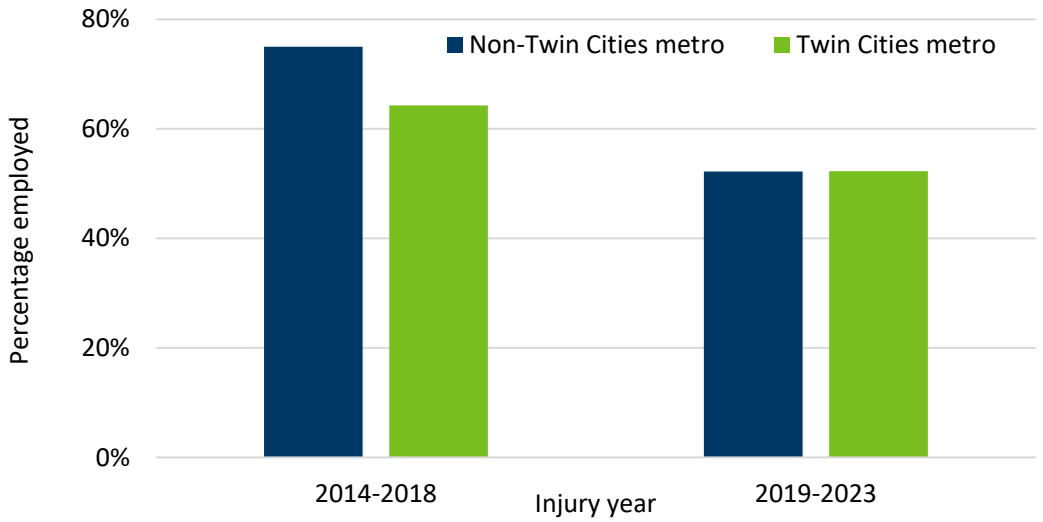
Before and after the presumption, and among both non-presumption and presumption workers, those with the longest job tenure returned to work at the lowest rate (Figure 4.35). Among non-presumption workers, those in the second longest tenure group (five to 10 years) had the highest return-to-work rate, both before and after the presumption. In contrast, presumption workers with the least amount of tenure (less than one year) had the highest return-to-work rate. After the presumption, presumption workers with the least tenure returned to work at a much higher rate (79%) than those with the most tenure (51%), with increased tenure corresponding with decreased return-to-work rates.

Figure 4.36a. Return-to-work rates among PTSD claims by presumption group, presumption period and employer location



Before and after the presumption, among non-presumption and presumption workers, those employed in the seven-county Twin Cities metropolitan area (TC metro) returned to work at lower rates than their counterparts outside the TC metro (workers employed in Minnesota's 80 other counties) (Figure 4.36a). These patterns were essentially the same for non-presumption and presumption workers, with the key variation being that presumption workers returned to work at lower rates overall. The percentage of non-TC metro presumption workers who returned to work dropped by almost 17 percentage points after the presumption took effect, the largest change of any group. Importantly, TC metro workers, especially presumption workers, had a longer average job tenure compared to non-TC metro workers, which may partially explain the geographic disparities.

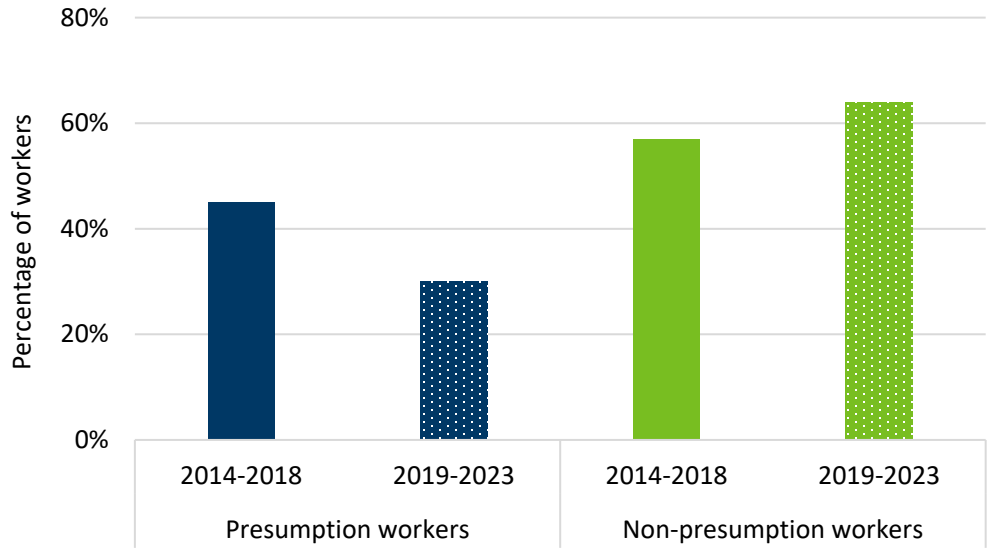
Figure 4.36b. Return-to-work rates among police officer PTSD claims by presumption period and employer location



Among police officers — the single largest group among presumption workers — non-TC metro police returned to work at slightly higher rates than their metropolitan area counterparts prior to the presumption (Figure 4.36b). After the presumption took effect, the return-to-work rate difference between the groups essentially disappeared. The return-to-work rate for non-metropolitan police dropped by nearly 23 percentage points after the presumption took effect, compared with a decrease of eight percentage points for TC metro police.

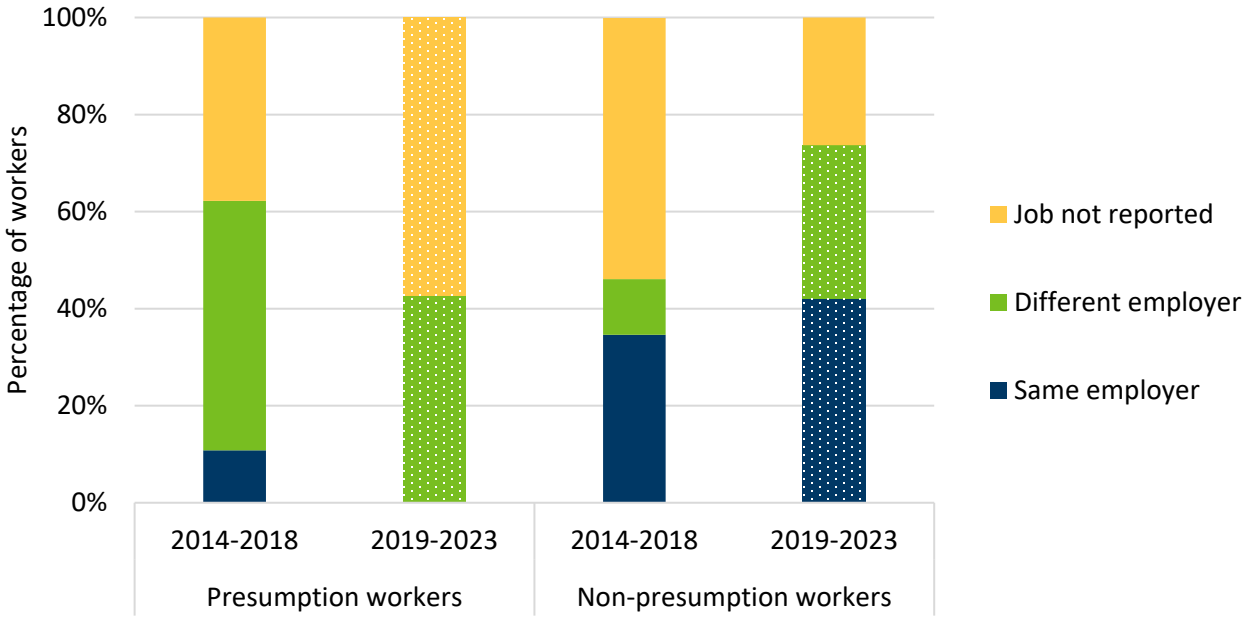
There was also a difference in tenure between metro and non-metro police officers. Metro police averaged 13.9 years of service before the presumption law and 15.2 years afterward, compared to 11.9 and 13.1 years, respectively, among non-TC metro police. These tenure differences likely contributed to observed disparities in return-to-work outcomes, given the strong negative association between longer tenure and successful return to employment after PTSD claims.

Figure 4.37a. Rates of return to work in the same industry among PTSD claims by presumption group and presumption period



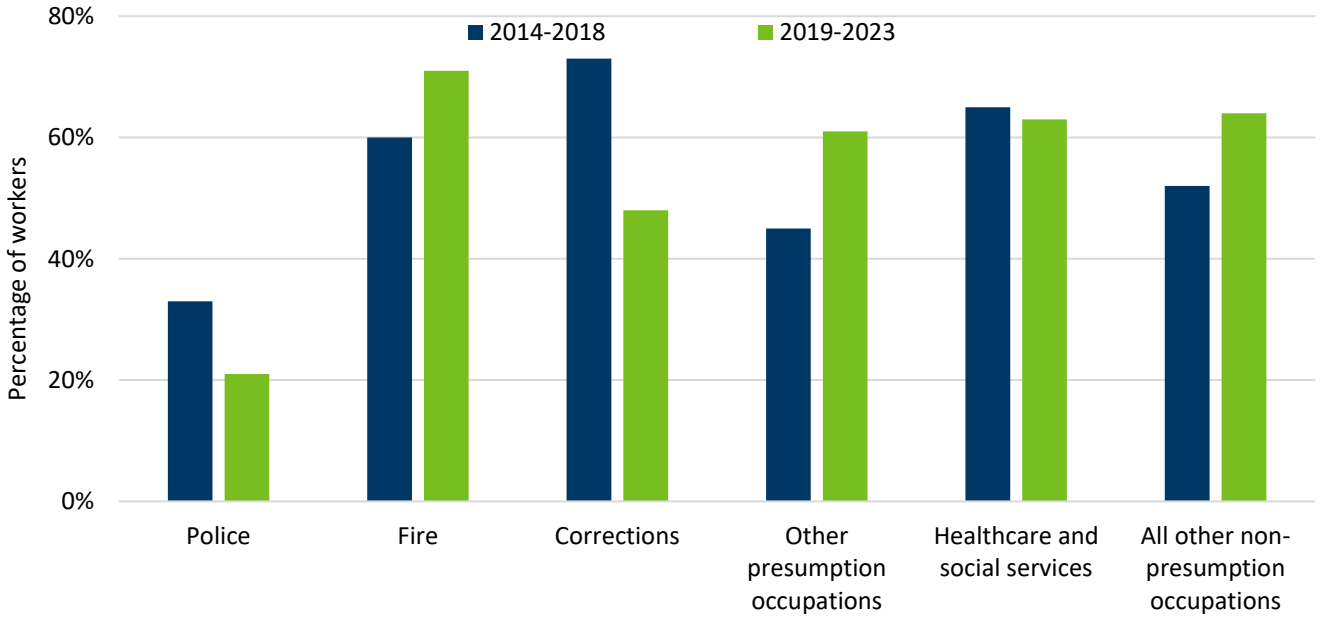
The next series of figures show the percentage of workers who returned to work in the same industry, limiting the analyses to only those workers who returned to work within a year of claim closure. Almost half of workers who returned to work following a PTSD claim remained in the same industry (47%), with non-presumption workers staying in the same industry at higher rates than presumption workers, both before and after the presumption (Figure 4.37a). Only 30% of presumption workers returned to work in the same industry following the presumption, compared to 64% of non-presumption workers.

Figure 4.37b. Return-to-work outcomes of PTSD claims among workers completing vocational rehabilitation by presumption group and presumption period



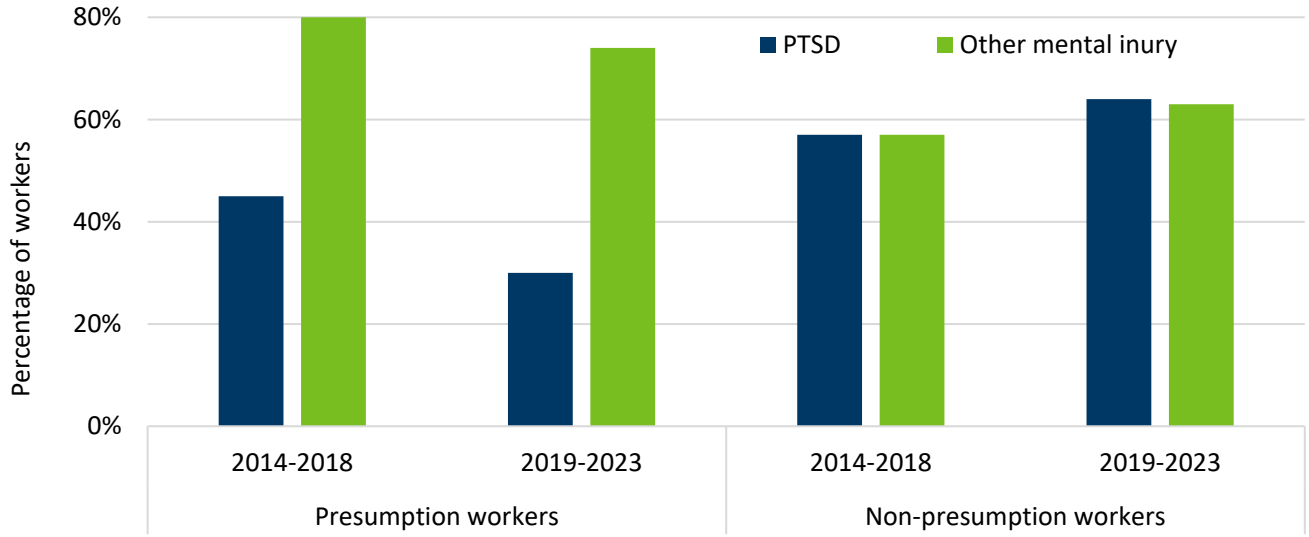
Among workers with closed vocational rehabilitation plans, and comparing return-to-work outcomes with the same or different employer (as opposed to the same or different industry), non-presumption workers returned to the same employer at higher rates than presumption workers and did so at a slightly higher rate following the presumption (Figure 4.37b). About 11% of presumption workers who completed vocational rehabilitation returned to work with the same employer before the presumption took effect, but none of the 89 presumption workers with claims after the presumption who completed vocational rehabilitation returned to work with the same employer. In contrast, presumption workers who completed vocational rehabilitation returned to work with a different employer at a higher rate than their non-presumption counterparts, both before and after the presumption. While the rate at which presumption workers with vocational rehabilitation returned to work with a different employer dropped after the presumption, this rate increased for non-presumption workers after the presumption.

Figure 4.38. Rates of return to work in the same industry among PTSD claims by occupation and presumption period



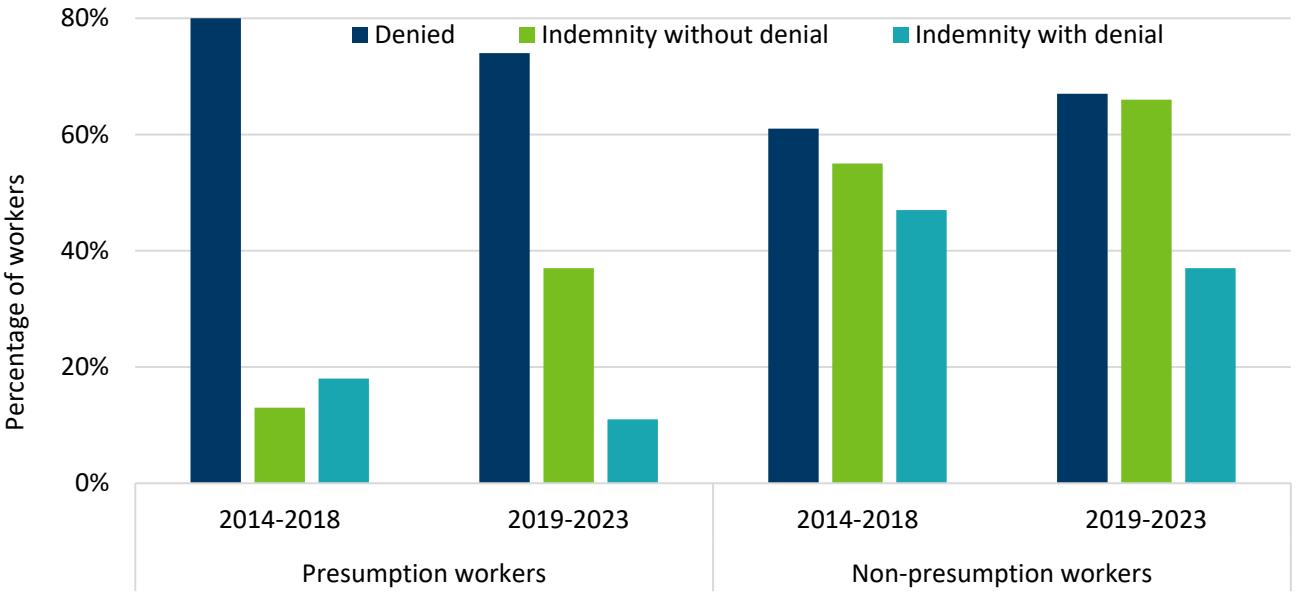
When disaggregated by occupation, police officers consistently showed the lowest rates of returning to the same industry following PTSD claims (Figure 4.38). Among police, the proportion returning to the same industry dropped from 33% before the presumption law to 21% afterward. Corrections workers, who initially had the highest same-industry return rate (73%), also experienced a notable decline, to 48%, after the presumption.

Figure 4.39. Rates of return to work in the same industry by presumption group, presumption period and mental injury type



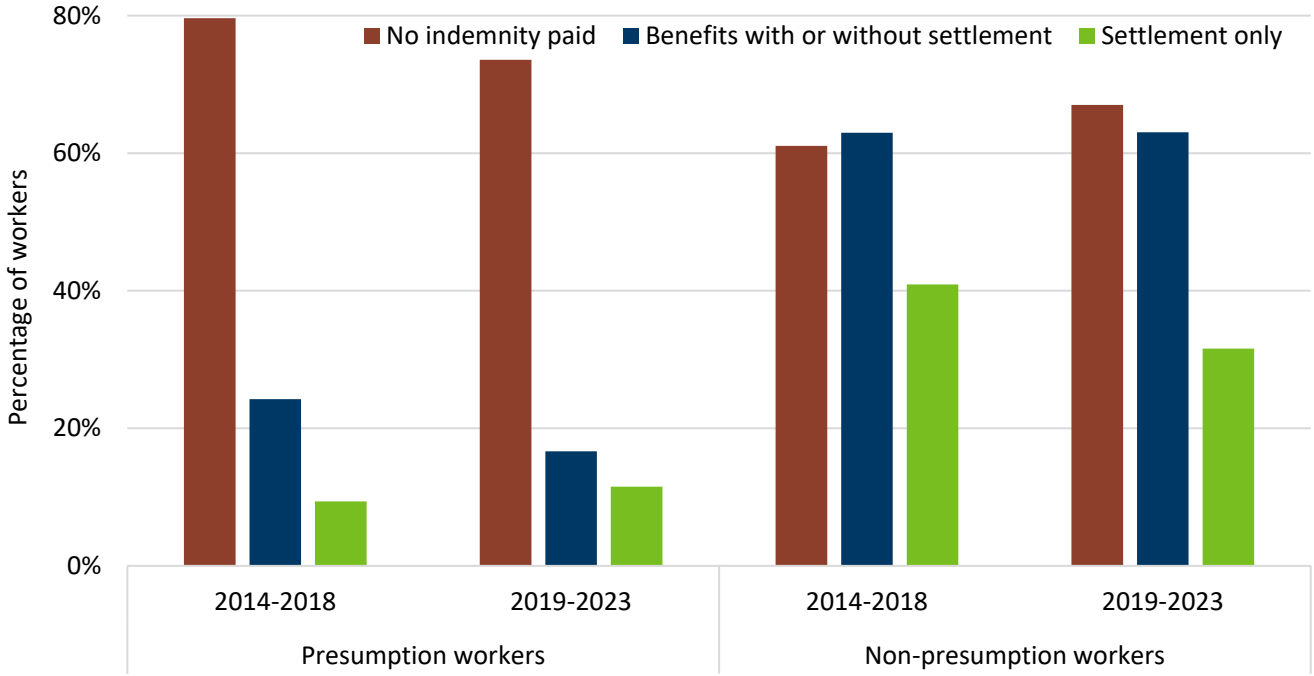
Among non-presumption workers, those with other mental injuries returned to work in the same industry at similar rates to workers with PTSD, both before and after the presumption (Figure 4.39). However, presumption workers with PTSD claims returned to work in the same industry at a lower rate than those with other mental injuries both before and after the presumption took effect. In addition, return-to-work rates among presumption workers were lower for both PTSD and other mental injury claims after the presumption.

Figure 4.40a. Rates of return to work in the same industry among PTSD claims by presumption group, presumption period and claims handling decision



Workers who were paid indemnity following a denial were least likely to return to the same industry, except for presumption workers paid indemnity without a denial before the presumption (the smallest group of workers). Presumption workers whose claims were denied and not paid returned to work at the same industry with the highest rates overall (Figure 4.40a).

Figure 4.40b. Return to work in the same industry rates among PTSD claims by presumption group, presumption period and indemnity type



Among workers with PTSD who returned to work, those paid only a stipulated settlement returned to work in the same industry at the lowest rates, particularly presumption workers (Figure 4.40b). Among non-presumption workers, those paid indemnity benefits (with or without a stipulation) were about as likely to return to work in the same industry as those whose claims were not paid. In contrast, among presumption workers, workers with unpaid claims returned to work in the same industry at the highest rates, while those paid indemnity remained in the same industry at rates closer to those paid only a settlement.

4.3.3 Discussion

While the presumption law aimed to improve access to workers' compensation benefits for public safety employees diagnosed with PTSD, it did not lead to improved return-to-work outcomes and, in several key areas, outcomes deteriorated.

Police officers experienced the steepest decline in return-to-work rates following the presumption. In contrast, non-presumption workers exhibited relatively stable or improved return-to-work rates across the same period.

Job tenure emerged as a significant predictor of return-to-work success. Workers with longer tenure returned to work at markedly lower rates compared to those with shorter tenure, regardless of presumption status. This trend could suggest that career-length factors, such as occupational identity, age or fewer alternative employment options, may contribute to reduced return-to-work success among experienced workers.

Geographic disparities were also evident. Twin Cities metropolitan area workers had lower return-to-work rates compared to non-metro workers both before and after the presumption, and the largest declines in return-to-work rates post-presumption were observed among police officers outside the Twin Cities area.

Claims handling and indemnity type strongly influenced return-to-work outcomes. Workers whose claims were denied but who received indemnity payments or stipulation-only settlements consistently returned to work at

the lowest rates. Interviews with key stakeholders (Section 6) suggest the adversarial nature of some claims resolutions, even when resulting in settlements, may discourage or hinder reemployment.

Finally, vocational rehabilitation services, which should support reintegration, were not as effective for presumption workers. Post-presumption, very few presumption workers who completed vocational rehabilitation programs returned to the same employer and industry retention rates among presumption workers fell sharply.

4.4 Summary of findings from analysis of PTSD and other mental injury claims

Identifying and tracking mental-injury-related claims in the workers' compensation system is a major challenge. Initial injury coding is based primarily on limited and unverified descriptive text in the First Report of Injury, which hinders early identification of PTSD claims. Among the PTSD claims identified for this study, less than half were originally coded as PTSD for the nature of injury based on the FROI. Detecting the remaining PTSD claims for the study cohort required an extensive search of claim-related documents. An AI text recognition tool was used to scan documents for keywords related to PTSD and other mental injuries. However, claims identified using this tool required further manual review to ensure the key words were being used in the correct context. Tightening insurer responsibilities related to identifying claims as mental injury (or potential mental injury) will be a crucial step in creating a more viable system for tracking mental injury claims in the workers' compensation system.

Among the mental injury claims identified for this study, several trends were apparent. Insurers issued an initial denial of primary liability for more than 90% of all PTSD claims from 2014 to 2023. This rate was far higher than the denial rate among all non-COVID-19 claims during the same period, which did not exceed 20% (Minnesota Workers' Compensation System Report, 2025). In addition, the initial denial rate among PTSD claims by workers in presumption occupations did not decrease after the rebuttable presumption came into effect in 2019 and remained high through the COVID-19 pandemic and the period of civil unrest in the Twin Cities in 2020, when counts of PTSD claims among presumption workers reached their peak. Further, initial denial rates for PTSD claims among presumption workers exceeded those among non-presumption workers each year from 2017 onward.

High rates of initial denial among PTSD claims may be influenced by several intersecting factors and statutory timelines at the beginning of a claim. First, there is variability and uncertainty regarding the date of injury for PTSD claims, for example, whether it is the date of trauma or diagnosis, the first date of treatment or first date of lost time. Second, for PTSD to be compensable under the law, the worker must have a diagnosis of PTSD from a licensed psychologist or psychiatrist after experiencing at least one month of persistent symptoms as required by the DSM-5 TR. Third, current statutory timelines were drafted for physical traumas with more than three days of claimed disability, and require timely action by all parties within a shorter timeframe than the requirement for at least one month of persistent symptoms for a PTSD diagnosis. Specifically, the employee must report an injury within 14 days of occurrence; the employer must submit a report of injury to their insurer within 10 days of the disability; and the insurer must accept or deny the claim and begin payment of benefits within 14 days of the employer receiving notice of disability. The high denial rates may be in part because the concepts of date of injury, required notice and a determination of compensability for a physical injury do not clearly align with requirements for a PTSD diagnosis under the DSM-5 TR.

It is important to note the positive outcomes in the period following the passing of the rebuttable presumption law. Workers in all occupations filed claims more quickly after a mental injury in the post-law period compared to before the law, which may demonstrate improvements in recognizing early symptoms of PTSD among workers. In addition, police officers were less likely to file claim petitions as the initiating document in PTSD claims after the presumption law compared to before, possibly pointing to improvements in the early stages of the claims process for claimants in this occupation.

A primary goal of the workers' compensation system is to maximize the potential for injured workers to return to work. Four in five PTSD claims by non-presumption workers resulted in the workers returning to work within a year after the claims closed. However, return-to-work rates were lower among presumption occupation workers, dropping to below 60% after the presumption. The decrease in the return-to-work rate among presumption workers was driven mainly by police officers, the largest occupation group among presumption workers in this study. Among workers who returned to work within a year of claim closure, the proportion returning to the same industry was much lower among presumption workers than among non-presumption workers, both pre- and post-presumption law. Police officers had the lowest rates of returning to work, with one in five returning to the same industry after being injured with PTSD after the presumption. Unexpectedly, the return-to-work outcome was even worse among the 89 police officers who completed vocational rehabilitation after a PTSD injury post-presumption; none of these officers returned to work in the same industry.

Regarding treatment costs, while the median treatment cost per claim increased over time for physical-injury-only claims, it decreased for PTSD-only claims, except for 2021. Within each of the last two years of the study period, 2022 and 2023, the median treatment cost per claim was lower for PTSD-only claims than for physical-injury-only claims. This year-over-year decrease in per-claim treatment costs may be explained by the observed reductions in both treatment service counts and duration among PTSD-only claims over time, although some of this decline may be due to the use of settlements, which hide total treatment costs and services.

5. Minnesota workers' compensation PTSD survey

One of the key legislative requirements of this report is to identify systemic or regulatory changes to improve the experience and outcomes of employees with PTSD. To fulfill this requirement, researchers sought input from interested stakeholders through an online public survey about PTSD in the Minnesota workers' compensation system. The findings presented in this section are based on a non-representative, voluntary sample of 751 individuals with varied roles in the Minnesota workers' compensation system who participated in the online survey. The online survey platform allowed for questions to be tailored to individuals based on their answers to prior questions, meaning different respondents received different sets of questions based on factors such as their occupation or whether they had personal experience with PTSD. This explains the variability in response counts per question reported below. A detailed methodology for this survey is described in Section 2.3.3.

Stakeholder engagement and opinion are a valuable part of this report. However, the results of the survey cannot be considered representative of all stakeholders in Minnesota. A significant portion of respondents had no direct personal experience with reporting, treating or managing PTSD-related claims. Many were providers, advocates or others operating outside of formal workers' compensation claim processes. As such, results should be interpreted with caution and not overgeneralized.

Despite these limitations, this survey provides insight into potential trends, concerns and experiences from the respondents' perspectives. However, caution is warranted when using these results to inform policy or system-level decisions.

5.1 Respondent roles and employment characteristics

Survey respondents had a variety of roles relevant to the workers' compensation system, including employees, health care providers, employers, advocates, insurers and legal representatives. As shown in Table 5.1, the vast majority (84%) identified as workers or employees. The next largest groups were health care providers (11%), employers (7%) and worker advocates (4%). Many respondents (n=88 or 12%) selected multiple applicable roles, but more than 70% selected "worker/employee" as their only role.

Table 5.1. Role of respondents (multiple selections, n=751)

Role	Count	Percent
Worker/employee	630	83.9
Health care provider to people with PTSD	86	11.5
Employer	53	7.1
Worker advocate/union representative	33	4.4
Insurance representative	22	2.9
Legal/attorney	18	2.4
Employee benefits organization	5	0.7

Note: The sum of percentages exceeds 100% due to respondents' opportunity to make multiple selections; survey questions with this feature are flagged as "multiple selections" next to the count of respondents.

5.2 Occupational background

Respondents were asked to identify the occupations in which they work or have worked in the past. Table 5.2 identifies the occupations selected by the 653 individuals who responded to this question. A large majority of respondents worked in healthcare-related roles, particularly in medical facilities. Other common occupations included teachers, paramedics, human services or social workers, and police. A number of respondents (n=63 or 10%) indicated they worked in multiple occupations.

Table 5.2. Most common occupations (multiple selections, among those who responded to this question, n=653)

Occupation	Count	Percent
Healthcare provider (in medical facility)	514	78.7
Teacher or teaching assistant	50	7.7
Licensed nurse (outside medical facility)	46	7.0
Paramedic or EMT	25	3.8
Human services or social worker	19	2.9
Police	18	2.8
Firefighter	9	1.4
Public safety dispatcher	2	0.3
Correctional officer	2	0.3
Other	48	7.4
Did not answer	5	0.8

5.3 PTSD experience and reporting behavior

The survey asked for respondents' experiences with work-related PTSD, including whether they believed they had suffered from PTSD due to their job, whether they reported the injury and whether they sought or received treatment. It is important to note these responses reflect self-reported experiences and are not based on formal or clinical medical diagnoses of PTSD. The results indicate a considerable share of respondents who reported experiencing work-related PTSD did not report it to their employer as a work injury or access formal care. The survey also asked respondents to identify the reasons behind their reporting and treatment decisions.

Table 5.3 presents the overall self-reported experience of work-related PTSD among the survey participants. Among all 751 respondents, approximately 40% reported having experienced PTSD, while 36% had not, and 23% were unsure.

Table 5.3. Ever suffered from a work-related PTSD (all respondents, n=751)

PTSD experienced	Count	Percent
Yes	302	40.2
No	272	36.2
Unsure	174	23.2
Did not answer	3	0.4

The 302 respondents who reported they suffered from a work-related PTSD injury were further asked whether they reported the injury or sought treatment. Table 5.4 shows the reporting and treatment-seeking behavior of those who self-reported they had experienced work-related PTSD. Notably, nearly half of these respondents did not report the injury or receive treatment. A smaller proportion received treatment without reporting the injury. Only about 10% both reported the injury and received treatment.

Table 5.4. Reporting and treatment behavior related to the work-related PTSD (among those who reported experiencing work-related PTSD, n=302)

Reporting and treatment behavior	Count	Percent
I never reported my PTSD injury to my employer, nor received treatment for it	137	45.4
I never reported my PTSD injury to my employer, but received treatment for it on my own	96	31.8
I reported my PTSD injury to my employer, but never received treatment for it	39	12.9
I reported my PTSD injury to my employer and received treatment for it	30	9.9

Respondents who did not report their PTSD injury (regardless of whether they sought treatment) were asked to identify potential reasons behind their decision. Table 5.5 lists the reasons given by respondents for not reporting their PTSD injury. Respondents were allowed to select multiple reasons. The most common reason was a lack of awareness about eligibility (65%), followed by difficulty navigating the system (45%) and fear of reporting (39%).

Table 5.5. Reasons for not reporting the work-related PTSD (multiple selections, n=233)

Reasons for not reporting	Count	Percent
I was unaware that work-related PTSD is eligible for workers' compensation benefits in Minnesota	152	65.2
I did not know how to navigate the workers' compensation system for a psychiatric injury	105	45.1
I was afraid to report the injury to my employer	91	39.1
I did not want to report the injury to my employer for personal reasons	56	24.0
I was unsure whether my PTSD injury was work-related	34	14.6
I was discouraged from reporting the injury by someone from work	19	8.2

Reasons for not reporting	Count	Percent
I was discouraged from reporting the injury by someone else	10	4.3
Other	19	8.2

Respondents who reported their PTSD injury to their employer were asked for the reasons behind their decision to report. Table 5.6 presents the motivations of those who reported their PTSD injury. Respondents were allowed to select multiple reasons. The top reasons were being certain the injury was work-related (68%) and not being afraid to report the injury (40%). Many respondents indicated they received encouragement from others to report their PTSD and wanted to report the injury to their employer.

Table 5.6. Reasons for reporting the work-related PTSD (multiple selections, n=69)

Reasons for reporting	Count	Percent
I was certain my PTSD injury was work-related	47	68.1
I was not afraid to report the injury to my employer	28	40.6
I wanted to report the injury to my employer	20	29.0
I was encouraged to report the injury by someone from work	19	27.5
I was encouraged to report the injury by someone else (i.e., spouse, attorney, health care provider)	13	18.8
I was aware that work-related PTSD is eligible for workers' compensation benefits in Minnesota	9	13.0
I knew how to navigate the workers' compensation system for a mental injury or someone assisted me with it	5	7.3

5.4 Access to and utilization of PTSD treatment services

Among respondents who indicated they did not receive treatment for their work-related PTSD (n= 176) (regardless of whether they reported the PTSD injury), the most frequently reported barrier was not knowing how to access care (59%) (Table 5.7). Other commonly cited challenges included cost (23%), lack of time off work (22%) and provider unavailability (11%). Additional barriers included difficulty finding a provider who could understand the individual (8%) or offer a specific type of therapy (6%). Notably, 14% selected "Other," suggesting the existence of additional obstacles to care.

Table 5.7. Reasons not to receive treatment for work-related PTSD (multiple selections, among respondents who did not receive treatment, n=176)

Reasons not to seek treatment	Count	Percent
I did not know how to access treatment for PTSD	104	59.1
I could not afford treatment	41	23.3
I could not get time off from work to attend therapy	38	21.6

Reasons not to seek treatment	Count	Percent
I could not find a provider with availability	20	11.4
I could not find a provider who could understand me	14	8.0
I could not find a provider who offered the type of therapy I was looking for	11	6.3
I could not find a provider who accepted my preferred method of payment (e.g., insurance, out-of-pocket, workers' compensation)	10	5.7
Other	25	14.2

Among those who did receive treatment for work-related PTSD (n = 126) (regardless of whether they reported the PTSD injury), the most common interventions were pharmacological and cognitive-based therapies (Table 5.8). More than half (56%) used selective serotonin reuptake inhibitors (SSRIs), while 43% received cognitive behavioral therapy (CBT). Other reported treatments included EMDR (27%), cognitive therapy (25%) and selective norepinephrine reuptake inhibitors (SNRIs) (21%). More than one in five respondents (22%) selected "Other," indicating the use of additional or individualized modalities not included in the survey.

Table 5.8. Type of work-related PTSD treatment received (multiple selections, among respondents who received treatment, n = 126)

Type of treatment received	Count	Percent
Selective serotonin reuptake inhibitors	70	55.6
Cognitive behavioral therapy	54	42.9
Eye-movement desensitization and reprocessing	34	27.0
Cognitive therapy	31	24.6
Selective norepinephrine reuptake inhibitors	27	21.4
Antihypertensive medications (for example, Prazosin)	19	15.1
Motivational interviewing	12	9.5
Cognitive processing therapy (CPT)	11	8.7
Narrative exposure therapy	10	7.9
Prolonged exposure therapy	6	4.8
Brief eclectic psychotherapy	2	1.6
Other	28	22.2

5.5 Employment outcomes

Respondents who reported they suffered from a work-related PTSD injury (n=302) were asked to describe their employment outcomes after their injury. As shown in Table 5.9, the majority (61%) reported they continued

working without a loss of time from work. An additional 14% took a temporary leave of absence but returned to their job afterward.

A smaller proportion of respondents (6%) left work for reasons unrelated to their PTSD injury, such as career changes, retirement or returning to school. Four percent reported retiring due to a PTSD-related disability. Others (4%) planned to return to a different position following leave, while only 2% expected to return to the same position after a leave of absence.

Table 5.9. Work status following work-related PTSD (among PTSD experienced, n=302)

Work status following work-related PTSD	Count	Percent
I continued working without a loss of time at work	183	60.6
I took a temporary leave of absence because of my PTSD injury but was able to return to work after	41	13.6
I left work for reasons unrelated to the PTSD injury (i.e., changed jobs, retired or returned to school)	17	5.6
I retired from my position with a PTSD disability	13	4.3
I took a leave of absence and plan to change positions when I return to work	11	3.6
I took a leave of absence but plan to return to work in my same position	5	1.7
Other	32	10.6

5.6 Return-to-work support

Respondents who self-identified as being employers, insurers, claims administrators, worker advocates or union representatives, employee benefits or retirement organization professionals, health care providers or in "other" roles were asked about factors that promote successful return to work for workers recovering from work-related PTSD and the likelihood of returning to work with proper support.

Respondents who identified as an employer, worker advocate, retirement organization professional or other were asked to identify factors perceived to promote returning to work as shown in Table 5.10. The most frequently endorsed measure was providing workers with training and education about PTSD and available mental health resources, selected by 62% of respondents. Early PTSD detection and screening (54%) and supporting recovered workers who are ready to return to work (52%) were also widely viewed as effective. Nearly half of respondents emphasized the importance of clear policies and procedures for reporting a mental injury and filing a workers' compensation claim.

Table 5.10. Factors perceived to promote higher return-to-work rates following PTSD (select up to four responses, n=97)

Factors that promote higher return-to-work rates	Count	Percent
Providing workers with training and education about PTSD and mental health resources	60	61.9
Conducting PTSD detection/screening for early detection	52	53.6

Factors that promote higher return-to-work rates	Count	Percent
Providing support to recovered workers who are ready to return to work	50	51.6
Having clear policies and processes for reporting a mental injury and filing a workers' compensation claim	48	49.5
Providing workers with training and education about the workers' compensation system as it applies to mental injuries	35	36.1
Providing paid leave	34	35.1
Paying for treatments	31	32.0
Communicating with workers while they are on leave for a PTSD injury	31	32.0
Other	4	4.1

Respondents from health care, insurance and retirement organizations were asked to identify the factors most important in improving return-to-work outcomes for workers with PTSD. As shown in Table 5.11, effective treatment of PTSD (76%) and timely intervention (73%) were the most frequently cited. These were followed by timely detection (56%) and employer-based PTSD education and training (51%). Nearly half indicated that providing paid leave also improves outcomes. The skill of the treating clinician — including their proficiency in evidence-based therapies (30%) and cultural competence (14%) — was also highlighted.

Table 5.11. Factors most important to improve return-to-work outcomes after work-related PTSD (select up to four responses, n=124)

Factors perceived to improve return-to-work outcomes	Count	Percent
Effective treatment of PTSD	94	75.8
Timely intervention	91	73.4
Timely detection of PTSD	69	55.6
Employer-based training and education about PTSD and mental health resources	63	50.8
Employee receiving paid leave from work	59	47.6
Clinician's proficiency in evidence-based treatments	37	29.8
Effective treatment of comorbidities	27	21.8
Clinician's cultural competence	18	14.2
Other	3	2.4

Respondents were also asked to estimate what proportion of workers with accepted PTSD claims could return to work if they received effective treatment and proper support. As shown in Table 5.12, 63% believed at least three of every four affected workers could return under such conditions. An additional 20% estimated between half and three-fourths would be able to return, while only 2% believed no workers would return. These findings

suggest strong confidence among stakeholders in the potential for recovery and reintegration when adequate clinical and organizational supports are in place.

Table 5.12. Estimates of return-to-work potential with effective PTSD treatment and support (among employer, insurer or claims administrator, health care provider who provides care to people with PTSD, employee benefits or retirement organization, and other, n=166)

Expected return-to-work percentage	Count	Percent
76% or higher	104	62.7
51 to 75%	33	19.9
26 to 50%	20	12.0
1 to 25%	3	1.8
0%	3	1.8
Did not answer	3	1.8

A related question was asked of employer-side respondents (employer, insurer or claims administrator, and employee benefits or retirement organization) about whether their organization currently offers a formal return-to-work program tailored for individuals with work-related PTSD. Only 23% (n=17) reported such a program exists in their organization, while 32% said no program is in place and 43% were unsure. These figures suggest structured return-to-work programs for PTSD are under-utilized or inadequately communicated.

Among respondents who affirmed having a PTSD-specific return-to-work program (n=17), perceptions of its effectiveness varied. A majority rated the program as either “Excellent” (30%) or “Good” (41%). However, a quarter of respondents rated their programs as only “Fair” or “Poor,” pointing to the need for further program improvement.

5.7 Workers’ compensation claims process barriers

This section focuses on perceived barriers encountered by professionals who reported prior experience working with injured workers with an active PTSD claim in the workers’ compensation system. As shown earlier, among the 89 respondents in applicable roles — health care providers who treat PTSD and those in employee benefits or retirement organizations — 30 individuals (34%) reported having worked with injured workers who had an active PTSD-related workers’ compensation claim.

Among those with prior workers’ compensation PTSD case experience, several recurring challenges were identified (Table 5.13). The most frequently cited barrier (57%) was work-specific requirements, including workability or fitness-for-duty evaluations and interpretation of job descriptions. This was followed by disability determinations (47%) and evaluation and diagnostic assessment (40%), each reflecting administrative and clinical complexity in substantiating PTSD for workers’ compensation eligibility.

Respondents also noted legal considerations, such as responding to subpoenas or navigating legal language (33%), as well as challenges in treatment planning and payment (30% each). These findings point to the friction between mental health care delivery and procedural requirements that may be specific to workers’ compensation systems.

Table 5.13. Reported challenges when working within the workers' compensation system for PTSD cases
(among respondents with prior experience handling PTSD workers' compensation claims, n=30)

Challenges with workers' compensation process	Count	Percent
Work-specific requirements (i.e., workability or fitness for duty evaluation, interpreting job descriptions)	17	56.7
Disability determinations	14	46.7
Evaluation and diagnostic assessment	12	40.0
Legal considerations (i.e., responding to subpoenas, legal fluency)	10	33.3
Treatment planning	9	30.0
Payment	9	30.0

5.8 Conclusions

Survey responses focused attention on the perceived complexity of using workers' compensation to identify, treat and provide benefits to workers after traumatic experiences. Just as important as providing an entry point into the system is the process for workers to exit the system and return to employment. Many respondents with PTSD either continued working or returned to work at a high rate, and respondents in other roles indicated most workers could successfully return to work with proper support. Timely detection and early treatment access in the period after a traumatic exposure were identified as critical points in the process.

The survey provided stakeholders the opportunity to share their experience with PTSD in Minnesota's workers' compensation system and their perceptions of PTSD as a work-related condition. These survey data provide insight into the respondents' concerns and experiences related to PTSD in the workers' compensation system in Minnesota. The survey was also used to inform additional stakeholder engagement. At the conclusion of the survey, respondents had an opportunity to indicate whether they were willing to participate in a follow-up interview or discussion group, and affirmative responses were used to recruit participants. Additionally, the survey results influenced the topics included in the interview protocol and questions asked of various stakeholder groups. Detailed results of the stakeholder interviews follow in Section 6.

6. Stakeholder interviews and panel discussions

This section synthesizes perspectives from a broad range of individuals familiar with Minnesota's workers' compensation system and PTSD claims. The insights were derived from 40 one-on-one semi-structured interviews and three multi-stakeholder panel discussions with selected survey respondents. Participants included first responders, health care providers, employers, insurers, legal professionals, retirement system administrators and advocacy groups. Discussions explored interviewees' experiences navigating the claim process and their views on system performance, gaps and potential areas for improvement.

The purpose of this engagement was to:

- understand how stakeholders interpret and experience the workers' compensation system related to a PTSD claim;
- probe the reasoning behind the survey responses (presented in Section 5) and explore perspectives in greater depth; and
- inform the development of practical recommendations that integrate stakeholder knowledge with policy and legal analysis presented in other sections of this report.

While stakeholder insights varied based on roles, they described common challenges related to claim initiation, adjudication, treatment access, legal processes and return-to-work pathways. It is important to note many perceptions expressed during stakeholder engagement did not align with the legal or administrative realities of the workers' compensation system. For example, some workers viewed initial claim denials as unjustified or punitive, despite statutory obligations requiring quick decisions with limited early documentation. Similarly, misunderstandings about eligibility criteria, independent medical examiner roles and PERA procedures contributed to frustration. This disconnect between stakeholder experience and what the law allows was a pervasive theme, underscoring the need for clearer communication and education of claimants around roles, procedures and expectations.

This section presents detailed insights by stakeholder type (Section 6.1), a summary of findings across stakeholder groups (Section 6.2) and a discussion of the implications for policy and system improvement (Section 6.3).

6.1 Stakeholder-specific insights from interviews and panel discussions

> *"I just wish it wasn't so adversarial, especially in the case of like officers or first responders … we already have to go see a therapist … then [they] put us through the ringer again and again. I mean, it just makes us feel like we don't matter. And what we went through doesn't matter."*
>
> *– Police officer reflecting on barriers despite presumption*

Stakeholder engagement revealed critical insights into the experiential, administrative and legal dimensions of PTSD claim initiation, adjudication and resolution in Minnesota's workers' compensation system. Participants' perspectives, which varied widely by stakeholder group, are presented here, followed by a summary of themes that cut across the groups and a discussion of the policy implications of these findings.

6.1.1 Presumption-covered workers

Presumption-covered workers who participated in the interviews were primarily police officers and firefighters. These participants described the process of filing a PTSD claim as emotionally taxing, procedurally opaque and often retraumatizing. Most interviewees reported needing to retain legal counsel to file a claim, even under the presumption. This dependence on legal counsel was attributed to confusion about documentation requirements and a perception that the presumption did not prevent denial of benefits. Many presumption-covered workers noted that repeated IMEs led to inconsistent determinations that were often in contradiction to evaluations conducted by treating providers. These repetitive evaluations were viewed as unnecessary and distressing. There was a general consensus that even with the statutory presumption, the claim process remained adversarial and procedurally burdensome.

Multiple respondents described the experience as challenging despite meeting the criteria for presumptive coverage. Several participants noted a lack of transparency from insurers and difficulty understanding which documents or medical evidence were considered sufficient. Interviewees also emphasized that presumption coverage did not shield them from long delays or denials, and some reported confusion about whether the presumption only applied during the period of employment. A few interviewees described having their claims denied after resigning or being placed on leave, which they had not anticipated would affect eligibility. Finally, many participants described a lack of employer support and expressed that the level of support varied depending on leadership. While some police and fire departments had embedded peer support models or administrative assistance, others offered little guidance, leaving workers to navigate the system independently.

6.1.2 Non-presumption workers

Workers without presumption coverage, including health care workers, described even greater obstacles navigating the workers' compensation system. Most non-presumption workers were unaware PTSD was a compensable injury or were unsure how to begin the claim process. A common experience reported by non-presumption workers was delaying seeking help and filing claims only after experiencing significant psychological distress or exiting employment. Several respondents noted employers were not always supportive or transparent about the workers' compensation process. Many reported there was no outreach from human resources or supervisors to discuss PTSD symptoms, claim options or available accommodations. Non-presumption workers expressed that stigma, fear of retaliation and loss of professional standing discouraged early reporting.

Multiple interviewees described difficulties gathering documentation and navigating requirements for medical certification. This was especially difficult for individuals without legal assistance or prior experience with the claims process. Legal representation was described as critical, but many found it inaccessible or cost-prohibitive. As a result, some workers abandoned claims after receiving denials or delayed seeking help until after their conditions worsened. Several described being caught between multiple systems (for example, workers' compensation, private insurance, disability) and lacking guidance about which path to pursue.

6.1.3 Employers

Employers expressed a range of perspectives about their role in supporting employees experiencing PTSD and navigating the workers' compensation system. Several employers emphasized their commitment to the well-being of their workforce while also acknowledging substantial institutional and procedural challenges. One recurring theme was the lack of clarity and guidance about how to support employees filing PTSD claims. Some employers described being uncertain about their responsibilities during the claim process, especially regarding confidentiality, accommodations and legal boundaries. In some cases, employers lacked designated personnel or expertise to coordinate with insurers or assist employees through administrative steps. The administrative burden was frequently cited as a barrier, particularly for smaller employers with limited human resource capacity. Employers noted PTSD claims often require significant time and documentation, and they felt overwhelmed by complex communication with insurers, attorneys and medical professionals. Some mentioned inconsistent communication with insurers, which left them unaware of claim status or unable to provide support.

"We feel like we're really in the dark … we are paying the wages; we have a spot we can't fill … it does pinch us."

– Employer describing the lack of system transparency and communication during an officer's PERA disability leave

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Employers also reported difficulty in balancing their duty to support employees with their administrative obligations. For example, supervisors sometimes struggled to distinguish between clinical and work-related PTSD symptoms and were unsure how to make appropriate referrals or adjustments. Others described tensions between maintaining workplace safety and accommodating employees during their recovery process. There was general agreement that more training, clearer guidance and stronger collaboration with insurers and legal experts are needed. Some employers have adopted informal strategies, such as peer support, temporary leave or modified duty arrangements, but these were described as uneven and dependent on local leadership. Overall, employers viewed PTSD-related claims as a growing area of concern that would benefit from standardized protocols, early intervention tools and better integration between the mental health and workers' compensation systems.

6.1.4 Insurers

Insurers reported facing substantial challenges in evaluating PTSD claims within the constraints of the current workers' compensation structure. One of the most frequently cited issues was the difficulty in determining work-related causality for mental health conditions, which are often cumulative and lack a single identifiable incident. The IME process was viewed by insurers as an essential tool for verifying diagnoses and causations. However, they acknowledged it is frequently misunderstood by claimants and perceived as adversarial, particularly when IMEs contradict findings by treating providers.

Some insurers expressed concerns about pressure from legal representatives on both sides to accept or reject claims prematurely. Documentation inconsistency was also a common concern. Insurers described difficulties in obtaining complete and timely medical records, as well as variability in the quality and specificity of diagnostic

information provided by clinicians. This inconsistency created uncertainty in claim decisions and sometimes led to delays in approvals or the need for additional assessments.

Several insurers noted they operate in an environment of legal ambiguity. They pointed to the need for clearer definitions and state-level guidance on PTSD-related standards of proof, especially under the presumption statute. This ambiguity contributed to variability in claim handling across insurers and adjusters. The insurers also highlighted tensions between meeting regulatory timelines and accommodating the diagnostic and treatment timelines typically required for PTSD. Some indicated the statutory 14-day deadline for acceptance or denial decisions was not always feasible for complex mental health claims, which evolve and may require longer-term evaluation.

Finally, many insurers advocated for system-level reforms that would improve transparency, reduce administrative friction and promote earlier intervention. They expressed interest in coordinated return-to-work frameworks, more consistent medical reporting standards and better education for claimants and providers about how the workers' compensation system functions in mental health cases.

6.1.5 Health care professionals

Health care professionals, particularly those who provide care to injured workers and specialize in mental health and occupational medicine, raised significant concerns about the challenges associated with PTSD claims in the workers' compensation system. A key issue identified was the mismatch between clinical best-practices for trauma-informed care and the procedural requirements of workers' compensation, particularly the use of repeated IMEs. Health care professionals described frustration that their assessments were frequently overruled or discounted in favor of IME reports, which they viewed as often lacking sufficient context or continuity of care. This practice was seen as undermining the therapeutic relationship between patients and providers, and, in some cases, contributing to worsening symptoms due to perceived invalidation of clinical findings.

Many health care professionals emphasized that the adversarial nature of the claims process itself could retraumatize patients and hinder recovery. Some described situations in which clients were reluctant to participate in treatment or disclose full details of their experiences out of concern that their disclosures might later be used in adversarial proceedings. The pressure to produce narrowly defined documentation, rather than deliver holistic care, was seen as a barrier to effective treatment.

Stigma associated with PTSD, especially among first responders, was also identified as a barrier to early diagnosis and intervention. Health care professionals noted patients often delayed seeking treatment due to fears about confidentiality, career impacts or social stigma. Several health care professionals recommended more proactive screening within occupational health systems, coupled with confidential pathways to access mental health services.

In addition to these patient-centered concerns, they reported administrative challenges related to documentation, billing and coordination with insurers. Some noted they had received little guidance about how to structure their evaluations to meet workers' compensation requirements, leading to inefficiencies and claim delays. Overall, health care professionals called for more integrated and trauma-informed policies that recognize the complexity of diagnosing and treating work-related PTSD. Recommendations included improving communication between treating providers and insurers, establishing clearer clinical criteria for diagnosis and causality, and reducing the reliance on repeated IMEs that may delay or derail treatment.

6.1.6 Legal professionals

Legal professionals representing both claimants and employers described the PTSD claims process as procedurally complex and frequently adversarial. A primary concern was the lack of uniformity in how claims are adjudicated, with significant variations between individual judges. Legal professionals noted that while the statutory presumption was intended to streamline access to benefits, judicial interpretations and administrative practices have, in some cases, limited its effectiveness. One recurring issue was the perceived ambiguity in key statutory terms, such as “diagnosis by a licensed professional” and trauma “arising out of employment,” which allowed for inconsistent application. Legal professionals representing workers emphasized this lack of clarity left many workers vulnerable to denials based on procedural technicalities rather than medical merit.

The process of litigation itself was described as emotionally taxing for claimants. Legal professionals highlighted how depositions, document production and multiple hearings contributed to retraumatization. Many clients withdrew or settled early due to psychological distress, often resulting in limited access to long-term benefits or treatment continuity.

Legal professionals also reported variability in the acceptance of medical evidence. Treating providers’ documentation was frequently discounted in favor of IME reports, which were sometimes perceived as biased or incomplete. Legal professionals advocated for better standards to evaluate medical opinions and called for judicial education about PTSD-specific clinical issues.

For employer-side counsel, concerns included prolonged timelines for claim resolution and limited mechanisms for early settlement. Some noted that unclear guidelines made it difficult for employers to plan for or manage PTSD claims efficiently. Both claimant and defense attorneys agreed the current process creates inefficiencies and fails to fully serve the interests of either party.

There was broad support among legal professionals for reforms to reduce adversarial elements, improve consistency in decision-making and better integrate mental health expertise into judicial proceedings. Legal professionals emphasized system improvements must address both the procedural and substantive challenges claimants face in navigating PTSD-related claims.

6.1.7 Advocacy groups

Advocacy groups highlighted several system-level obstacles that delay or complicate access to benefits, even when criteria are met, and inequities in the current PTSD claims system, particularly for workers who fall outside the scope of the statutory presumption. They emphasized current policies disproportionately disadvantage lower-wage workers, underrepresented occupations and those with less access to legal or institutional resources. A recurring concern was the lack of public education about PTSD as a compensable workplace injury. Advocacy groups reported that many affected workers were unaware of their rights, the availability of benefits or how to navigate the claims process. This knowledge gap, combined with stigma and fear of retaliation, created disincentives to early reporting and treatment.

These groups advocated for the expansion of presumption eligibility to a broader range of high-risk occupations beyond traditional public safety roles. They noted trauma exposure is not limited to police or firefighters but affects others in emotionally intensive roles, such as health care workers. The current presumption framework, in their view, reinforces occupational hierarchies that do not reflect the realities of workplace trauma.

Several advocacy groups also raised concerns about insurer practices, describing patterns of denial, repeated requests for documentation and delays that appeared to target the most vulnerable workers. They called for enhanced regulatory oversight to ensure consistency and accountability in claim handling.

Finally, there was strong support for integrating trauma-informed care principles across the claims process, including in medical evaluations, legal proceedings and administrative communications. Advocacy groups emphasized system reform should be centered on the lived experiences of affected workers and aimed at restoring trust in the workers' compensation system.

In sum, advocacy groups proposed systemic reforms focused on inclusivity, transparency and the recognition of PTSD as a legitimate and compensable occupational health concern across sectors.

6.2 Cross-cutting themes

While stakeholder-specific concerns varied, several systemic barriers emerged repeatedly across groups, revealing areas where the system has not adapted well to the nature of psychological injuries; these systemic shortcomings transcend any single role within the PTSD claims process. These themes were: a lack of accessible data about PTSD-related workers' compensation claims; inadequate communication regarding claim status; and a disconnect between procedural and clinical timelines.

6.2.1 Lack of accessible data about PTSD-related workers' compensation claims

> *"My workers' comp attorney was surprised when I got a letter saying that my claim was accepted. He said it's much more common for the claim to initially be denied."*
>
> *– Police officer, recounting an unusually smooth claim experience*

Stakeholders across sectors, including legal professionals, health care providers, employers, insurers and advocacy organizations, frequently raised concerns about the lack of transparent and accessible data about PTSD-related workers' compensation claims. Interviewees described an information gap that hindered their ability to understand how claims are adjudicated, denied or approved, and whether claim outcomes vary across insurers, occupations or presumption status. Many participants reported they were unaware of any centralized or publicly accessible datasets that track approval and denial rates, claim timelines or insurer-specific outcomes.

It is important to note that while stakeholders reported limited awareness of and access to data sources, some data is already publicly available. For example, the DLI has presented summary metrics about PTSD claims through public venues such as the Workers' Compensation Advisory Council and *COMPACT* publications, including detailed data released in 2017, 2020 and 2021. A PTSD claims appendix was also included in the *2023 Adequacy of Disability Benefits for Minnesota Police Officers* report and additional presentations were made in 2018 and 2023. While these resources are publicly available, they may not be widely known or easily accessed by all stakeholders, and they do not address the full range of concerns raised about claim-level transparency and insurer-level variability.

Participants from multiple sectors, including legal, advocacy and health care, argued that the lack of disaggregated, routinely updated data limits both policy oversight and frontline decision-making. In particular, stakeholders highlighted the need for more granular data by occupation, claim stage, presumption status and

insurer to evaluate the impacts of recent reforms. Without such infrastructure, interviewees contended, it remains difficult to assess whether policy changes are improving access to benefits or reducing systemic disparities. Of note, from a legal perspective, the more disaggregated the data, the more likely it is to be designated as not public under the Workers' Compensation Act and the Minnesota Government Data Practices Act (MGDPA) (Minn. Stat. §§ 176.231, subd. 9, and 13.02).

In summary, although some PTSD claim data has been compiled and reported by DLI and other entities, stakeholder interviews revealed that key actors remain unaware of or disconnected from these sources. This disconnect underscores the need for clearer dissemination pathways, broader awareness and potentially enhanced data systems that are more accessible, searchable and actionable for frontline users and policy evaluators alike.

6.2.2 Inadequate communication regarding claim status

> *"We have a number of officers that are struggling, but it seems like the system isn't designed to get them help without them going out of pocket or doing things on their own."*
>
> *– Employer, highlighting systemic challenges in providing timely support*

A shared frustration was the opacity of claims adjudication, particularly when a denial is filed. Stakeholders from legal, health care and advocacy sectors noted denial decisions are often insufficiently documented, leaving little basis for understanding inconsistencies or appealing outcomes. Unlike the stakeholder concerns in Section 6.1, which focus on individual procedural burdens, this reflects a deeper system-level failure to ensure traceability, transparency and learning across cases. After a claim is initiated, interviewees consistently reported there is no standardized method for sharing non-clinical updates about claim progression, such as whether a case is under review, scheduled for an IME or undergoing appeal or litigation.

The fragmentation of responsibilities across employers, insurers, health care providers and legal actors further complicates coordination. Stakeholders described parallel processes with little communication or alignment, leading to duplicated assessments, conflicting determinations and prolonged resolution timelines. This lack of visibility impedes coordinated planning, disrupts operations and contributes to avoidable stress across the system.

Employers described challenges in staffing and resource allocation when required to hold positions for extended periods without knowing whether or when an employee will return. Clinicians noted uncertainty about claim status can complicate treatment continuity, especially when patients experience delays in authorization for care or are subject to multiple IMEs. Legal professionals also emphasized the absence of procedural transparency prevents early case resolution and reduces opportunities for collaboration among parties.

An additional element of inadequate communication was denial reasons. Stakeholders noted that while Minnesota statutes require denial letters to include plain language explanations of legal and factual rationale for the denial, they often encountered vague or formulaic denials with little actionable detail. Several stakeholders expressed concern that there is no apparent oversight mechanism to monitor whether statutory standards for denial notices are consistently met.

Interviewees acknowledged the importance of protecting medical privacy but expressed concern that current practices offer no structured mechanism for sharing even administrative claim status updates. The resulting information vacuum limits timely decision-making, increases frustration and undermines trust in the system.

Multiple stakeholders recommended the introduction of a standardized communication protocol that would allow for the secure exchange of basic, non-medical status information. Such a system could support proactive reintegration planning, facilitate care coordination, and help legal and administrative stakeholders align timelines and expectations. Without breaching confidentiality, procedural updates — such as confirmation of claim initiation, IME scheduling or appeal status — were viewed as essential to ensuring responsiveness and system efficiency. Of note, the employer, insurer and employee to a claim are able to access all claim filings in DLI's case management system, Work Comp Campus, without need of an authorization for release of private or nonpublic information (Minn. Stat. § 176.231, subd. 9a); however, not all data elements mentioned in this section are required to be filed with DLI.

Overall, the lack of administrative transparency was perceived as a systemic barrier that affects claimants, care providers and institutions alike. Addressing this gap was viewed as a necessary step to improve predictability, reduce disruption and support more coordinated outcomes in PTSD workers' compensation cases.

6.2.3 Disconnect between procedural and clinical timelines

> *"The process is meant to be frictional rather than helpful, and it makes trying to get better virtually impossible … you're treated like a liar."*
>
> *– Police officer, emphasizing the procedural challenges during clinical recovery*

Insurers and medical professionals raised concerns that the statutory timelines for claim decisions are misaligned with the clinical realities of diagnosing PTSD. Under Minnesota workers' compensation law, primary liability decisions must be made within 14 days of claim knowledge. However, clinicians emphasized the DSM-5-TR requires at least one month of persistent symptoms before a formal PTSD diagnosis can be confirmed.

This misalignment is an example of where the system has not adapted well to the nature of psychological injuries. Providers reported that insurers often request IMEs within days or weeks of the traumatic event — prior to the completion of the required diagnostic window. This can result in premature assessments that undermine the credibility of treating clinicians and delay access to appropriate care.

From an administrative perspective, insurers acknowledged existing data systems do not capture whether denials are due to premature evaluation or diagnostic disagreement. This lack of documentation complicates efforts to assess the impact of procedural timelines on claim outcomes.

Stakeholders from both groups called for better alignment between regulatory timelines and clinical diagnostic standards. Several recommended tracking the timing of diagnosis in relation to claim decision points to identify patterns that may indicate systemic barriers to access. Improved documentation and coordination between administrative and clinical processes were seen as essential for promoting timely and appropriate care for workers with PTSD.

6.3 Policy implications from stakeholder perspectives

> *"If you've got a department with, say 20 officers, and one of those officers reaches out for support and they are then treated really poorly, there's four other officers … that are never going to come forward."*
>
> *– Advocate, underscoring the ripple effect of stigma and organizational culture*

Stakeholder interviews and panel discussions surfaced a set of recurring concerns that point to clear opportunities for policy and administrative reform within Minnesota's workers' compensation system for PTSD claims. While perspectives varied by role, several shared priorities emerged.

First, data limitations were repeatedly cited as a foundational barrier to evidence-based policymaking and system accountability. Stakeholders from nearly all groups, including employers, clinicians and labor representatives, noted there is no centralized, standardized system to track PTSD claims across Minnesota's workers' compensation system, public disability programs and private disability programs (for example, short- and long-term disability benefits offered by employers or insurers). As a result, it is currently not feasible to generate consistent statistics about approval or denial rates by occupation, presumption status, insurer or demographic group across all programs. This limitation stems from the fragmentation of data sources, lack of integrated reporting and legal barriers, rather than the complete absence of data in any one system. This lack of visibility also impedes evaluation of the real-world impact of Minnesota's presumption law, as described by multiple stakeholder groups.

Despite current legal barriers regarding data sharing across systems, for example, MGDPA, participants called for the development of a unified PTSD claims database that integrates data across insurers and systems and includes both administrative and clinical indicators. In addition, stakeholders strongly supported the publication of annual, disaggregated reports about PTSD claim outcomes to promote transparency, inform statutory reform and build public trust in the claims process.

Second, there was broad agreement that the PTSD claims process remains opaque, procedurally inconsistent and emotionally burdensome for workers. Stakeholders across all groups identified the need for greater transparency in claim status communication, especially to employers and treating providers. Current practices were described as siloed and adversarial, undermining collaboration, workforce planning and care coordination.

Stakeholders explained that procedural inconsistency manifests in several ways: IMEs are sometimes scheduled before clinical criteria for diagnosis are met; statutory deadlines are applied differently across cases; and denial documentation lacks uniform clarity. Additionally, ambiguity around establishing the date of injury in PTSD cases introduces variability in how procedural timelines are implemented. These inconsistencies in PTSD claim administration and application of the law hinder timely and equitable claim resolution.

Legal and medical professionals further emphasized critical procedural details, such as diagnostic timelines, IME outcomes, appeal rates and legal representation status, are not systematically documented or publicly available.

Without this information, stakeholders are unable to detect patterns of delay, identify sources of procedural inequity or intervene in cases of recurring bias.

> *"I know someone who's gone to four IMEs in two years and it's like they don't have a choice, because they are required to do it. Even when their attorney says … 'they're only doing this because they're trying to put the pressure on you to settle this case, not because they want you to get better, not because they are interested in your diagnosis, but because they think that this $5,000 exam could save them $15,000.'"*
>
> – *Police officer, describing the perceived misuse of IMEs to pressure settlements*

Third, participants emphasized the mismatch between statutory timelines and clinical realities in PTSD claim processing. Interviewees reported many PTSD claims are denied or referred to IMEs before a full clinical assessment can be completed, often within days of submission. (Data regarding PTSD IMEs are addressed in Section 4.1.2 and further in Appendix C.) Clinicians expressed concern that such premature actions undermine diagnostic accuracy and delay appropriate care. Legal and labor stakeholders similarly noted that procedural denials are frequently issued before a diagnosis is confirmed, creating unnecessary barriers to treatment and trust in the system.

This pattern may stem from confusion relating to Minnesota's 14-day rule for determining primary liability. Under Minnesota Statutes § 176.221, insurers must accept or deny liability within 14 days of the employer receiving notice of a reportable injury, but this provision was originally drafted to apply to injuries with a clearly established date of injury, such as physical traumas. For psychological conditions like PTSD, there does not seem to be a consensus in practice or court decisions regarding the correct date of injury for PTSD claims. Applying the 14-day requirement based on the exposure date, rather than the diagnosis date, results in decisions being made before a DSM-5-compliant diagnosis (which requires at least one month of symptom persistence) can be rendered.

Finally, multiple stakeholders underscored the importance of establishing early intervention pathways that operate independently of formal workers' compensation claims. First responders, clinicians and employer representatives consistently noted many workers delay or avoid reporting PTSD symptoms due to fear of retaliation, stigma surrounding mental health and concerns about the potential impact on career advancement or fitness-for-duty status. This underreporting is particularly acute in high-risk professions such as law enforcement and emergency medical services, where cultural norms valorize stoicism and discourage expressions of psychological distress.

Participants emphasized that offering confidential mental health check-ins, trauma-informed screening and informal support options, prior to the initiation of a workers' compensation claim, could reduce barriers to early care. Employers noted structured accommodation mechanisms, such as light-duty assignments or temporary role modifications, can facilitate early recovery while avoiding the adversarial dynamics of the formal workers' compensation process. Peer support programs, especially those embedded within the workplace, were described as uniquely effective in promoting help-seeking behavior and reducing stigma. These early-stage interventions were seen not as substitutes for workers' compensation, but as critical complements.

7. Evidence-based approaches for PTSD screening and treatment

This section presents a synthesis of empirical evidence and implementation data about evidence-based approaches for PTSD screening and treatment strategies. The review draws on peer-reviewed literature, national best practices and input from stakeholders. The analysis highlights both strengths and limitations in current practice, and identifies best practices for PTSD screening and early detection, as directed by statute to identify programs with timely and effective medical intervention.

7.1 Best practices in PTSD screening for high-risk occupations

7.1.1 Overview of evidence-based PTSD screening tools

A literature review of 41 articles identified a combination of PTSD-specific screening tools and screening tools to identify a history of exposure to traumatic events (see Methods in Section 2.3.4.). Psychological screening tools are self-report questionnaires that ask respondents to report on the frequency and/or severity of certain symptoms. Items are scored and combined to create a total score. Scores above a certain threshold are considered "positive screens" that indicate a high likelihood of the presence of an underlying diagnosis of PTSD. This contrasts with diagnostic assessments, which are clinical interviews conducted by a licensed mental health professional that confirm the presence or absence of a diagnosis based on clinical diagnostic criteria. Fitness-for-duty evaluations are medical evaluations that involve a clinical interview and examination and may include other tests to determine whether a worker is able to perform their job duties. A full list of the studies reviewed and the summary of findings is available in Appendix F for Section 7 and Appendix G for Section 8. The identified PTSD screening tools are listed in Table 7.1.

Table 7.1. Screening tools for PTSD symptoms

Measure	Construct measured	Description
PTSD Checklist (PCL) PCL-C (Civilian Version) PCL-M (Modified for World Trade Center rescuers and responders) PCL-5 (DSM-5 Version) PCL-S (asks about symptoms related to a "stressful" experience)	PTSD symptom severity	PCL-5 (the most recent and updated version) is a 20-item self-report measure that assesses severity of symptoms.
Primary Care PTSD Screener (PC-PTSD)	Screens for possible PTSD symptoms	A four-item screener that asks about the experience of nightmares, avoidance, hypervigilance, and emotional numbness in response to a traumatic event, with a revised version (PC-PTSD-5) that added a fifth item assessing guilt and/or self-blame.
Impact of Events Scale - Revised (IES-R)	Trauma symptom severity	A 22-item measure of psychological responses experienced in the prior seven days to a specific traumatic event and has three subscales of intrusion, avoidance, and hyperarousal.

Measure	Construct measured	Description
International Trauma Questionnaire (ITQ)	Screener for PTSD and complex PTSD (C-PTSD)**	Based on the International Classification of Diseases, 11th Edition (ICD-11) criteria, and includes nine symptom indicators for the symptom clusters of PTSD (re-experiencing, avoidance, and sense of threat) and nine symptom indicators for disturbances in self-organization that are needed for a diagnosis of C-PTSD (affective dysregulation, negative self-concept, and disturbances in relationships).

*Note that the definition of "mental impairment" in Minnesota law defines PTSD as the condition described in the most recently published edition of the DSM.

**C-PTSD can develop after experiencing chronic trauma and has additional symptoms, but its diagnosis only appears in the ICD-11, which is not in use in Minnesota.

The identified screening tools for history of traumatic event exposures are included in Table 7.2.

Table 7.2. Screening tools to identify a history of a traumatic event

Measure	Construct measured	Description
Life Events Checklist for DSM-5 (LEC-5)	Trauma History	An unscored, 16-item measure used to establish exposure to DSM-5 PTSD Criterion A traumatic events, wherein respondents rate one or more levels of exposure to each of the events on a six-point scale ("Happened to me", "Witnessed it", "Learned about it", "Part of my job", "Not sure", "Doesn't apply")
Critical Incident History Questionnaire (CIHQ)	History of exposure to critical incidents	A 34-item measure assessing cumulative exposure to critical incidents experienced in police officers' line of duty, where respondents indicate the frequency to which the events happen on a 13-point scale (0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10-20, 21-50, 51+) and the severity of each incident ("How difficult would it be for police officers to cope with this type of incident") on a scale from 0 ("Not at all") to 4 ("Extremely")
Trauma History Questionnaire (THQ)	Lifetime trauma history	A 13-item measure used to assess lifetime trauma history, where respondents indicate whether they have experienced or witnessed traumatic events such as natural disasters; accident/injury; sudden, life-threatening illness; military combat; death of a friend/family member in an accident or by murder; sudden, unexpected death of a close family member; assault; childhood abuse; or coerced sexual contact.

Of the identified screening tools, the PTSD checklist (PCL) was the most widely used screening measure to identify clinically significant symptoms of PTSD in the reviewed literature. While the remaining screening tools

were represented much less frequently in the literature review, some of them have demonstrated strong psychometric properties in workers. For example, the PC-PTSD is a very short screener that could be used in combination with screening for other mental health and substance use concerns. Further, the ITQ screening for both PTSD and C-PTSD may help employers learn more about the prevalence of C-PTSD in their employees. (See Table 7.1. C-PTSD or Complex PTSD is diagnosed separately in the ICD-11, but not in the DSM-5.) However, few systematic, occupationally related PTSD screening programs exist in the US, and many of the programs reviewed were small demonstration projects that do not have data about the efficacy or outcomes of the screening program. In general, several evidence-based screening tools exist for PTSD; however, the evidence around early identification and screening programs for workers is lacking.

7.1.2 Screening strategies in practice: California and New York

There were few formal screening and early PTSD detection programs in the reviewed articles, none of which were specific to individual state or federal workers' compensation jurisdictions. Across the United States, screening for PTSD is denoted extremely rarely, with screening formally mentioned in only two jurisdictions: California and New York. California's Medical Treatment Utilization Schedule and New York's Medical Treatment Guidelines both recommend one-time screening in individuals at risk for PTSD, such as those that have sustained an at-risk traumatic event. The guidelines described by California and New York also both mention three specific screening tools: the PCL, the PC-PTSD and the Post-traumatic Adjustment Scale. The PCL and the PC-PTSD Screen were identified in this literature review, whereas the Post-traumatic Adjustment Scale was not referenced in any of the reviewed literature.

7.1.3 Impact of PTSD early detection programs on workers' compensation claims and occupational risk for exposure to trauma

The impact of PTSD early detection programs, such as screening, on workers' compensation claims has not been studied and was not identified as part of this literature review. Nevertheless, this literature review identified very high rates of exposure to trauma in various occupations, such as first responders, for whom the majority will be exposed to a work-related traumatic event (Baker and Smith, 2023; Bing-Canar et al., 2019; Chung et al., 2015; Di Nota et al., 2020; Maia et al., 2007; Mueller et al., 2021; Noor et al., 2019; Petrie et al., 2018; Testoff et al., 2022). Rates of positive PTSD screens varied across professions, geographic location and context, with screening rates biased by factors such as whether such screening is associated with an assessment of an individual's occupational fitness for duty or whether screening is performed anonymously (Martin et al., 2017). In practice, pre-employment psychological screening and evaluation occurs commonly in some occupations, particularly in first responders, though the degree to which such screening or evaluation focuses on PTSD is variable (Marshall et al., 2017; Opie et al., 2020). Given the propensity for exposure to trauma in many occupational settings, implementing procedures for early detection of PTSD may result in more appropriate treatment referrals, reduced workers' compensation claim filings and relevant information readily available to the insurer when determining whether to accept or deny a workers' compensation claim by virtue of standardized data collection practices temporally associated with traumatic occupational exposures.

7.1.4 Best practices for PTSD screening

This literature review has revealed the extremely limited data about the best practices for PTSD screening. In practice, work-related PTSD cases appear to be most-commonly identified well after exposure to trauma occurs

and, often, after repeated traumatic exposures (Baker and Smith, 2023; Leung and Shen, 2022; Martin et al., 2017; Robertson, 2019; Steel et al., 2021; Wright et al., 2022). As such, the systematic application of screening in higher-risk occupations is necessary for early identification and treatment of PTSD. This practice is further supported by the fact that screening tools for PTSD are relatively inexpensive to administer. Pre-employment screening for PTSD can serve to identify pre-existing illness or increased risk and may aid in workers' compensation adjudication of PTSD claims. Subsequent, systematic screening following traumatic exposures is recommended to yield longitudinal data that not only may serve to identify PTSD cases, but also may be able to identify the progression of PTSD-related symptoms across workers who serve in high-risk occupations with multiple traumatic exposures (Berninger, Webber, Cohen, et al., 2010; Berninger, Webber, Niles et al., 2010; Chie et al., 2011; Corrigan et al., 2009; Cukor et al., 2011; Maslow et al., 2015; Stein et al., 2021). The timing of screening in association with a known traumatic event should be conducted within 30 days after such an event occurs. This screening would identify cases of acute stress disorder (symptoms of post-traumatic stress that last for fewer than 30 days). Early detection and referral for services for these cases could prevent cases from progressing to PTSD. However, repeated screening is also recommended (between one and six months after the traumatic event) to identify cases where symptom onset was delayed. In occupations where trauma exposure is frequent (such as, more than three to four times a year), routine, quarterly or biannual screening may be preferred to screening based on exposure timing.

Consistent with the limited screening recommendations in other workers' compensation jurisdictions, the PCL-5 (a 20-item tool) and the PC-PTSD-5 (a five-item tool) are appropriate screening tools that are supported by established evidence. The PCL-5 provides more granular data with a greater likelihood that high scores are indicative of a PTSD diagnosis. The PC-PTSD-5 is easier to administer, but workers who screen positive will need further assessment to confirm presence or absence of a PTSD diagnosis. The ITQ, while not yet well-studied, is recommended because of its ability to screen for both PTSD and C-PTSD. However, the current statutory requirements for workers' compensation in Minnesota define PTSD as "the condition as described in the most recently published edition of the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association," which does not have a separate, specific C-PTSD diagnosis. A positive screen on the ITQ would need to be confirmed by a diagnostic assessment using DSM-5-TR criteria to be compensable under workers' compensation. Using the ITQ to screen workers in high-risk occupations would increase understanding of the potential prevalence of C-PTSD cases that may be compensable. Regardless of which tool is used to screen for PTSD, a process involving an occupational health professional to collect, store and review this data is required, with established threshold levels for follow-up screening and referral for psychological evaluation.

7.2 Barriers to workplace screening

7.2.1 Worker concerns about stigma, privacy and early screening

Although studies show early detection of PTSD using validated screening instruments, like the PCL-5, can support early access to treatment and improved worker health outcomes (Baker and Smith, 2023; Larsson et. al., 2025; Baker et. al., 2024; Denning et. al., 2014), work-based screening programs must consider mental health stigmas and misunderstandings (Bovin et. al., 2023, Karchoud et. al., 2024) in the workplace to maximize their effectiveness. Both employers and workers who were interviewed for this report (described in section 6) identified challenges with work-based screening programs and early detection screening in the workplace. First, workers communicated a misunderstanding of psychological screenings, confusing them with diagnostic assessments or fitness for duty evaluations. From this perspective, screenings are viewed as a threat to workers'

job security and previous studies have found workers are less likely to seek mental health services if they feel their livelihood or reputation would be threatened by doing so (Krakauer et. al 2020, Eyllon et. al. 2020). These concerns were particularly prominent among workers interviewed for this report, whose sense of job security depends on their fitness for duty, such as public safety and health care workers. Like the findings of previous studies about care-seeking behaviors among military personnel (Sharp et. al., 2015), interviews found that workers' concerns that a PTSD diagnosis could lead to unwanted work restrictions, forced medical leaves of absence, suspension of professional licenses or permits (such as, to drive an emergency vehicle or carry a firearm) and/or job termination can discourage them from seeking help. Further, workers feared a PTSD diagnosis could cause relational strains with coworkers, particularly for those whose jobs require strong interdependence and teamwork, and in fields that are primarily occupied by men. This is consistent with the findings of previous studies on the social implications of mental health stigma in the workplace (Sharp et. al., 2015; Ricciardelli, 2020), where workers expressed fear that a PTSD diagnosis would signal weakness, unreliability and/or untrustworthiness to supervisors and colleagues, or that seeking support could be viewed as "playing the system" (Ricciardelli, 2020).

7.2.2 Employer concerns about early screening, potential costs and stigma

Like workers, employers interviewed for this report also expressed concerns about psychological screening programs, fearing possible implications and unintended consequences of implementing them, such as costs related to positive screening follow-ups, fitness-for-duty determinations, treatment, medical leaves of absence, return-to-work support and staffing shortages. They identified a lack of clear guidance or procedural norms for managing mental health in the workplace that may be exacerbating the issue. Employers may also hesitate to include psychological screenings in routine employee health programs because of the need to have a clear pathway to treatment for positive screenings. For screening programs to be most beneficial to both workers and employers, and to minimize negative perceptions and misunderstandings of them, research shows it is imperative for employers to gain employee trust (Inwald and Panza, 2022). This can be accomplished by clearly communicating expectations, especially regarding confidentiality, and working to decrease stigmas surrounding mental health in the workplace. Employers can shift workplace culture and decrease stigma by prioritizing mental health, especially in high-risk occupations like public safety (Hillman, 2022). Additionally, mindfully developing interventions that consider existing stigma (Stangl et. al., 2019) and implementing mental health awareness and resilience training programs, which have been found to decrease stigma and be generally well-received by workers (Krakauer, 2020; Marks et. al., 2024; Nisbet et. al., 2025), are positive steps employers can take to decrease stigma concerning mental health conditions. Misunderstanding of work-based screening programs can be reduced by using consistent processes and policies and informing employees about what to expect from them. Lastly, to further ensure consistency and address uncertainty for workers and their employers, screening programs should follow clear, reliable protocols and be distinguished from fitness for duty evaluations (Inwald and Panza, 2022).

7.3 Current PTSD treatment modalities in Minnesota's workers' compensation system

7.3.1 Evidence-based treatments for PTSD

An umbrella literature review was conducted to identify systematic reviews and meta-analyses of treatments reporting PTSD outcomes. A total of 754 articles were identified; after removal of 148 duplicates, 606 articles underwent abstract screening by two trained social worker reviewers based on predefined eligibility criteria.

Seventy-nine articles were selected for full-text review (see Methods in Section 2.3.4). Sixty-four articles were included in the review (see Appendix F for full list of articles).

The reviewed articles were evaluated primarily in terms of the reported effect size of treatment, most commonly measured by a "standardized mean difference" or similar biostatistical measures that can be uniformly compared across multiple studies. The summarized data in the tables below can be used to broadly understand the literature review regarding treatments for PTSD particularly by qualitatively interpreting the combination of the reported effect sizes in addition to the breadth of study for a particular treatment as represented by the number of articles addressing such a treatment. Reported effect sizes are classified according to standard interpretations of these measures, where effect sizes below zero would indicate a negative effect, effect sizes of 0-0.2 are considered "very small," 0.2-0.5 "small," 0.5-0.8 "moderate," 0.8-1.3 "large" and greater than 1.3 "very large." The degree of evidence of effectiveness for PTSD was categorized based on the number of articles addressing such a treatment, where inclusion in one to two articles was considered "very limited" evidence, three to four articles "limited," five to seven "moderate," eight to 10 "strong" and greater than 10 "very strong."

However, there are a number of significant limitations in interpreting systematic reviews and meta-analyses in this way due to the fact that these types of articles are studies of multiple studies at once, where there are many differences to the variety of studies conducted even for a single treatment. Thus, interpreting this complex of a literature base in a simplified way as below is prone to a variety of limitations with respect to considering individual treatments, including: different outcomes being studied (for example, PTSD severity versus nightmares versus anxiety); different populations being studied (for example, veterans versus the general populace); different study designs within individual studies (and, thus, different strength of conclusions); effect sizes sometimes reported for groups of treatments rather than individual treatments; effect sizes not necessarily being reported; and only qualitative results. Nevertheless, the tables below represent the breadth and state of the literature regarding various treatments for PTSD in a simplified fashion.

Psychotherapy

Evidence for effective psychotherapies in treating PTSD are described in Table 7.3. In general, trauma-focused psychotherapies demonstrated effectiveness beyond more traditional (non-trauma-focused) psychotherapies.

Table 7.3. Psychotherapies demonstrating effectiveness for treating PTSD

Therapy	Number of articles referencing therapy	Degree of evidence of effectiveness for PTSD	Range of reported effect sizes	Interpretation of reported effect sizes
Cognitive Behavioral Therapy (CBT)	23	Very strong	0.03 – 8.61	Very small to very large
Trauma-Focused CBT (TF-CBT)	8	Strong	0.39 – 3.03	Small to very large
Cognitive Therapy (CT)	5	Moderate	0.09 – 2.4	Very small to very large
Eye-Movement Desensitization and Reprocessing Therapy (EMDR)	18	Very strong	0.03 – 5.35	Very small to very large
Prolonged Exposure Therapy (PE)	16	Very strong	0.05 – 7.2	Very small to very large

Therapy	Number of articles referencing therapy	Degree of evidence of effectiveness for PTSD	Range of reported effect sizes	Interpretation of reported effect sizes
Cognitive Processing Therapy (CPT)	11	Very strong	0.2 – 23.89	Very small to very large
Narrative Exposure Therapy (NET)	6	Moderate	0.39 - 1.19	Small to large
Brief Eclectic Psychotherapy	6	Moderate	0.28 – 0.57	Small to moderate
Imagery Rehearsal Therapy	6	Moderate	0.35 – 4.38	Small to very large
Virtual Reality Exposure Therapy	5	Moderate	0.59 – 1.01	Moderate to large
Mindfulness-based therapy	12	Very strong	0.26 – 1.6	Small to very large

Medications

Medication-based therapies were grouped according to their drug class and summarized in Table 7.4.

Table 7.4. Evidence for effectiveness of medications for the treatment of PTSD

Medication class	Specific agents	Number of articles referencing medication class	Degree of evidence of effectiveness for PTSD	Range of reported effect sizes	Interpretation of reported effect sizes
Selective Serotonin Reuptake Inhibitors (SSRIs)	fluoxetine, paroxetine, sertraline, citalopram, escitalopram	8	Strong	0.13 – 2.51	Very small to very large
Selective Norepinephrine Reuptake Inhibitors (SNRIs)	duloxetine, venlafaxine, desvenlafaxine	6	Moderate	0.19 – 0.48	Very small to small
Atypical antipsychotics	risperidone, olanzapine	5	Moderate	0.11 – 1.36	Very small to very large
Anticonvulsants	mirtazapine (also a tricyclic antidepressant), topiramate	6	Moderate	0.01 – 3.28	Very small to very large
Norepinephrine and dopamine reuptake inhibitors (NDRIs)	bupropion	4	Limited	-0.34 – 1.11	Moderate negative effect to large positive effect
Serotonin antagonist and reuptake inhibitors (SARIs)	nefazodone, vilazodone	4	Limited	0.13 – 1.32	Very small to large

Medication class	Specific agents	Number of articles referencing medication class	Degree of evidence of effectiveness for PTSD	Range of reported effect sizes	Interpretation of reported effect sizes
Monoamine oxidase inhibitors (MAOIs)	phenelzine, tranylcypromine, isocarboxazid, selegiline	4	Limited	0.24 – 1.07	Small to large
Tricyclic antidepressants	amitriptyline, desipramine, doxepin, imipramine, nortriptyline	3	Limited	0.36 – 1.33	Small to very large
Alpha-1 agonists (Antihypertensive)	prazosin	11	Very strong	0.061 – 1.87	Very small to very large
Alpha-2 agonists (Antihypertensive)	guanfacine, clonidine	1	Very limited	-0.08 – 1.87	Very small negative effect to very large positive effect
Beta blockers (Antihypertensive)	propranolol	3	Limited	0.25	Moderate
N-methyl-D-aspartate (NMDA) agonist	ketamine, d-cycloserine	2	Very limited	0.12 – 0.61	Very small to moderate
Antihistamine	hydroxyzine	1	Very limited	0.87 – 1.56	Large to very large
Steroid	dexamethasone	1	Very limited	0.14	Very small
Cholinesterase inhibitor	rivastigmine	1	Very limited	0.18 – 0.41	Very small to small
Antioxidant	n-acetylcysteine	1	Very limited	0.91 – 1.38	Very large

Other substances that cannot be prescribed, yet were evaluated, were cannabinoids, 3,4-methylenedioxymethamphetamine (MDMA; a stimulant and NMDA agonist) and tianeptine (an atypical tricyclic antidepressant). But, notwithstanding their varied legal status in the United States, the evidence for use of these medications in PTSD is still very limited.

Physical and alternative therapies

Evidence for physical and alternative therapies are presented in Table 7.5.

Table 7.5. Evidence for physical and alternative therapies for treatment of PTSD

Treatment	Number of articles referencing treatment	Degree of evidence of effectiveness for PTSD	Range of reported effect sizes	Interpretation of reported effect sizes
Yoga	6	Moderate	0.17 – 1.16	Very small to large
Repetitive transcranial magnetic stimulation (rTMS)	3	Limited	1.13 – 1.23	Large
Emotional freedom technique ("tapping")	3	Limited	1.38 – 2.96	Very large
Acupuncture	3	Limited	0.46 – 1.28	Small to large
Biofeedback	2	Very limited	0.53	Moderate
Creative art therapies (music therapy, art therapy, drama therapy)	1	Very limited	Qualitative results only	N/A
Animal-related therapies (canine therapy, equine therapy)	1	Very limited	Qualitative results only	N/A
Hypnotherapy	2	Very limited	0.72 – 1.18	Moderate to large
Thought field therapy	2	Very limited	Qualitative results only	N/A
Visual kinesthetic dissociation (rewind therapy)	1	Very limited	Qualitative results only	N/A
Traumatic incident reduction	1	Very limited	Qualitative results only	N/A
Resilience therapy	1	Very limited	1.26	Large

7.3.2 Types of PTSD treatments covered under Minnesota workers' compensation

Minnesota's workers' compensation treatment parameters cover several types of psychotherapies and medication-based treatments for PTSD. Other treatments may be covered as authorized by an insurer, or by a workers' compensation judge or mediator/arbitrator after a medical request or a claim petition is filed. The seven specific types of psychotherapy covered are:

1. cognitive behavioral therapy (CBT);
2. cognitive processing therapy (CPT);
3. cognitive therapy (CT);
4. prolonged exposure therapy (PE);
5. brief eclectic psychotherapy (BEP);
6. eye-movement desensitization and reprocessing (EMDR); and
7. narrative exposure therapy (NET).

An insurer may authorize coverage of another "evidence-based, trauma-focused psychotherapy" if seven working days prior notice is provided. (Minn. R. 5221.6700, subp. 5, paragraph A(8).)

The three classes of medications covered are:

1. selective serotonin reuptake inhibitors (SSRIs);
2. selective norepinephrine reuptake inhibitors (SNRIs); and
3. antihypertensive medication, if there is scientific literature demonstrating the medication is effective treatment for PTSD.

In the case that these three classes of medications are ineffective or contraindicated, or produce adverse effects, serotonin antagonist and reuptake inhibitors (SARIs) may be prescribed, in addition to "other medications if prescribed by a licensed psychiatrist, or a psychiatric mental health advanced practice registered nurse (PMH-APRN)," with the exception of benzodiazepines (Minn. R. 5221.6700, subp. 9, paragraph C).

7.3.3 Aligning available treatments and best practices

The literature review identified that the specific psychotherapy and medication treatments currently indicated in Minnesota's PTSD treatment parameters are appropriate and generally supported by medical literature. There were no discrepancies between types of psychotherapy covered by Minnesota's treatment parameters and those supported by the medical literature. There were two types of therapy identified as part of this literature review with evidence of effectiveness that are not currently addressed by Minnesota's PTSD treatment parameters, namely imagery rehearsal therapy and virtual reality exposure therapy.

The medical literature supports use of SSRIs and SNRIs and first-line medication treatments for PTSD. With respect to antihypertensive medications, the medical literature delineates specific antihypertensive classes of medications, including alpha-1 receptor agonists, alpha-2 receptor agonists and beta receptor antagonists ("beta blockers"), with alpha-1 receptor agonist medications having robust literature supporting their use, whereas evidence for use of alpha-2 receptor agonists and beta blockers is only weakly supported at best. The medical literature supports use of SARIs as a second-line intervention given the known potential significant adverse effects associated with this drug class. The medical literature also supports use of the drug class of atypical antipsychotics (for example, risperidone, olanzapine) for treatment of PTSD. Of note, there are several medications that were identified in the literature review for treating specific symptoms of PTSD (for example, nightmares) rather than the condition PTSD as a whole, and the inclusion of treatment of individual PTSD-related symptoms may merit consideration.

The currently covered treatments under workers' compensation largely reflect the scientific evidence for best practices for treatment of PTSD. Under Minn. Stat. § 176.83, subd. 5 (b)(8), DLI is required to review and update the treatment parameters for PTSD each time the American Psychological Association adopts a significant change to their Clinical Practice Guideline for the Treatment of PTSD in Adults, using the expedited rulemaking process. However, given the evolving landscape around evidence-based treatments, it is recommended DLI and the Medical Services Review Board (MSRB), which advises DLI about workers' compensation medical issues, review treatments for PTSD more frequently. One option to address this would be to convene a panel of experts to evaluate the treatment parameters every two to three years to determine if: (1) new treatments should be added to the list of evidence-based treatments; (2) new research supports prior treatments that had limited available evidence; and (3) whether treatments should be removed because of evidence indicating their ineffectiveness or potential safety concerns. MSRB and panels of experts could review other practice guidelines (for example, those set forth by other professional societies) and guidelines for effective treatments (for

example, the U.S. Preventive Services Task Force or the U.S. Department of Veterans Affairs' National Center for PTSD) to make these determinations.

7.4 Increasing access to effective PTSD treatments

7.4.1 Clinician training and incentives to ensure access to gold-standard PTSD treatments

Shortages of trained mental health professionals have been documented as far back as the 1950s (Albee, 1959) and recent estimates suggest the behavioral health workforce would need to double to meet the demand (Health Resources and Services Administration, 2024). Mental health care demands have increased in recent years following the COVID-19 pandemic (Keuhne, 2022) and these demands have surpassed the supply of clinicians because mental health clinicians retire without sufficient new clinicians entering the field to replace them (Morreale et al., 2020). A recent Pulse survey conducted by the American Psychological Association (2024) found that half of psychologists are not taking new clients because they are full. Furthermore, lack of specialized training and differences in education and training between mental health care fields (such as, psychology, psychiatry and clinical social work) creates barriers to continuity of care between providers (Frank and McQuire, 2005). Although evidence-based treatments for PTSD exist, many community-based clinicians do not consistently deliver evidence-based treatments for PTSD (Finley, 2018). Investing in programming to train clinicians could expand the eligibility of the existing clinician network and help reduce wait times for workers seeking treatment for PTSD. Providers from all specialties would benefit from training in trauma-informed, evidence-based therapeutic modalities (for example, prolonged exposure or EMDR), cultural sensitivity and responsiveness within various occupational subcultures (such as, public safety and health care) and navigating the workers' compensation system. Training and certification can be expensive and time-consuming, so offering incentives and financial assistance to clinicians who are willing to work in occupational health settings to provide services to workers in high-risk occupations (before and after workers' compensation claims are filed) or within the workers' compensation system could be a wise investment for employers and insurers.

7.4.2 Addressing barriers to treatment for evidence-based mental health interventions

Once workers find a therapist that offers the evidence-based psychotherapy they desire, insurance coverage and out-of-pocket expenses can be barriers (Frank and McQuire, 2005). Health care clinicians that provide medical services to an injured worker under the workers' compensation law are required to participate in the Medical Assistance Program and MinnesotaCare as a condition of receiving payment for treatment of the workers' compensation injury (Minn. Stat. § 256B.0644 and Minn. R., parts 5221.0500, subp. 1, and 9505.5200 to 9505.5240). However, because of the nature of mental health care, many clinicians in private practice do not accept Medical Assistance or MinnesotaCare, and approximately one third only take cash payment for their services (American Psychological Association, 2024; Caplan, 2024). This creates potential barriers to care for injured workers with PTSD or potential confusion about whether or how treatment would be paid for under the workers' compensation system.

Wait times within larger, integrated health systems that likely would accept workers' compensation payments can be long and, in some cases, are limited to patients who receive primary care in those systems (Glied, 2005). On the private practice side, there are also significant hurdles for therapists to become paneled with insurance companies and the paperwork involved may be too burdensome for therapists in small practices to manage (American Psychological Association, 2024; Kuehne, 2022).

To address this barrier, employers may develop partnerships with practitioners to offer evidence-based therapy for their employees at little to no cost as a benefit for employees. Further, employers may work with their group health insurers to ensure therapists with the appropriate training in evidence-based treatments for PTSD are paneled with their insurance company to improve access to treatments for employees.

7.4.3 Expanding the clinician network to reduce wait times for PTSD treatment

Consistent with research on the matter, stakeholders from all interviewed interest groups reported limitations in the current mental health care system, indicating there seems to be an insufficient supply of clinicians to meet demands for treatment, particularly in rural communities (Morreale, 2020; Frank and McQuire, 2005). Previous research has found that investing in multi-disciplinary training and teamwork, with each clinician practicing to their highest level of education and licensure, can reduce the burdens of inadequate mental health care staffing and allow patients better continuity of care (Kuehne, 2022). According to the Minnesota Department of Health's licensed health care workforce data, there are currently 3,747 licensed psychologists and 1,178 licensed psychiatrists in the state of Minnesota, leaving approximately 4,925 licensed clinicians who are eligible to diagnose PTSD under the workers' compensation laws (Minnesota Department of Health Office of Rural Health and Primary Care, 2025). Nine in 10 of these clinicians reside in the greater Twin Cities metropolitan area. Further, some of these clinicians will not be available to see patients in Minnesota because they may not be currently practicing, have full caseloads or are practicing primarily in another state.

Expanding workers' compensation clinician eligibility to include all clinicians who are educated and licensed to diagnose and treat PTSD in the state of Minnesota, including master's level clinicians, would help address several barriers to accessing care for workers with work-related PTSD. First, it would substantially increase the number of eligible clinicians who could diagnose PTSD for workers' compensation claims. There are currently 7,723 licensed independent clinical social workers (LICSW), 2,888 licensed marriage and family therapists (LMFT), 3,927 licensed professional clinical counselors (LPCC) and 1,599 psychiatric mental health nurse practitioners (PMHNP or PMH-APRN), representing a total of 16,137 new clinicians who could be available to provide diagnoses for workers (Minnesota Department of Health Office of Rural Health and Primary Care, 2025). Expanding eligibility to master's level clinicians to complete diagnostic assessments in the state of Minnesota would increase the available workforce by 327%. The current licensure restrictions exacerbate mental health clinician shortages and complicate sustainability and continuity of care in the system over time (Kuehne, 2022). Next, accepting diagnostic assessments from all licensed clinicians would reduce the burden on injured workers of navigating the mental health care system and finding an eligible clinician, which can be challenging and expensive (Stevens 2005; Caplan, 2024). Workers and employers would also financially benefit from an eligibility expansion, as clinicians' fees are often influenced by their level of licensure and training, ranging from $100 to $300 a session (Caplan, 2024). Interviewees for this report noted costs exceeding twice as much as those numbers for diagnostic evaluations and IMEs. Expanding clinician eligibility to master's level clinicians who have demonstrated training in evidence-based treatment for PTSD would also reduce redundancy and expenses for workers who have already established a therapeutic relationship with a clinician who is licensed to perform diagnostic assessments and provide evidence-based psychotherapy for PTSD, because they would not have to undergo re-evaluation by a separate, eligible clinician. Reducing redundancy would not only decrease the financial burdens of assessment and treatment, but would also protect injured workers from possible re-traumatization from recounting traumatic incidents during repeated diagnostic assessments with new clinicians.

7.5 Conclusions

The assessment of evidence-based best practices for screening identified eight PTSD-specific screening tools and three screening tools to identify a history of exposure to traumatic events. These tools are not specifically designed for work-related PTSD, but may be helpful in early detection and treatment of PTSD. The effectiveness of these screening tools may depend on how well employers integrate the tools in workplace wellness programs and the acceptance of the tools by the working population.

The review of evidence-based treatment modalities assessed 11 psychotherapies and identified 10 as effective. (Table 7.3). Only five of 15 medication treatments were deemed effective (Table 7.4) and only one of the 12 physical and alternative therapies was determined to be effective (Table 7.5), though there were limited data to evaluate these methods. The effectiveness of the treatment protocols covered under Minnesota workers' compensation via the treatment parameters is supported by evidence. The evolution of treatments for work-related PTSD will require ongoing review and updating of the covered treatment protocols.

Accessing appropriate care for work-related PTSD is a critical step in the process. Privacy and stigma concerns, costs, wait time to see a provider and the limited provider categories that can diagnose work-related PTSD in Minnesota are barriers to receiving timely and effective care.

8. PTSD prevention and return-to-work strategies

As directed by statute, this section identifies programs with effective prevention and programs with high return-to-work outcomes. This section presents a synthesis of empirical evidence and implementation data about PTSD prevention and return-to-work strategies in high-risk occupations, with a particular focus on first responders in Minnesota. The review draws on peer-reviewed literature, national best practices and state-level program documentation to: (1) identify effective approaches to mitigating PTSD risk through workplace-based prevention; and (2) examine the structural components of return-to-work programs that support functional recovery and workforce reintegration. The analysis highlights both strengths and limitations in current program design and delivery, offering a foundation for enhancing Minnesota's occupational mental health infrastructure through coordinated, evidence-informed interventions.

8.1 Preventative measures in high-risk occupations

8.1.1 Mental health wellness training programs

The foundation of PTSD prevention in high-risk sectors lies in robust mental health wellness training. Over the past decade, a growing body of empirical literature has supported the use of structured resilience-building programs that combine psychoeducation, cognitive-behavioral techniques, mindfulness practices and stress inoculation. These interventions aim not only to reduce immediate stress reactivity but also to foster enduring adaptive coping strategies.

Systematic reviews have consistently demonstrated the protective value of such programs. Resilience training in first responder populations has been associated with a 25% to 30% reduction in PTSD symptoms over time (Pietrzak et al., 2014; Meichenbaum, 2007; Leppma et al., 2018). Participants report improved emotional regulation, reduced avoidance behaviors and greater psychological flexibility — protective factors that appear to sustain for up to 12 months post-intervention.

Minnesota has actively embraced this model through programs such as the *Minnesota Responder Resilience Program* and the *MnFIRE Emotional Resilience Training* initiative. These efforts operationalize best practices in prevention, tailoring content to local needs and occupational contexts. While formal peer-reviewed evaluations are pending, early implementation reports suggest strong uptake and positive participant feedback.

Recent statutory changes have further institutionalized this preventive approach. Under 2023 amendments to Minnesota law (Session Laws 2023, Chapter 48; HF 1234), public employers must provide either annual wellness training or access to an employee assistance program (EAP) or peer support program to remain eligible for reimbursement of costs related to PTSD or other claims under the Public Employees Retirement Association (PERA). This legislative shift strengthens the alignment between fiscal incentives and mental health prevention strategies in Minnesota's public workforce.

8.1.2 Integrating PTSD prevention into workplace safety systems

Embedding PTSD prevention into occupational safety and health systems is critical for scalability and sustainability. Best practices for integration focus on aligning mental health promotion with existing operational structures — thereby normalizing psychological readiness as part of professional competence, not a response to pathology.

Key components include the following.

- Occupational stress inoculation training (OSIT): Using pre-deployment or pre-exposure, OSIT teaches cognitive and behavioral strategies through simulated stress scenarios. Effectiveness studies have shown a 25% to 50% reduction in PTSD symptoms among trained first responders (Arnetz et al., 2009; Cohen et al., 2013).
- Routine screening and early intervention: Embedding routine mental health assessments allows for early detection of subclinical symptoms, timely referrals and prevention of chronicity (Harvey et al., 2014; Milligan-Saville et al., 2017).
- Peer support integration: When formally embedded into workplace protocols, peer support networks reduce stigma, facilitate early help-seeking and promote emotional debriefing after traumatic events Fallon et al., 2023; Donovan 2023).
- Trauma-informed safety protocols: These protocols include post-incident debriefings, workload regulation after major incidents and supervisor training in trauma recognition and response. Such policies ensure cumulative psychological burdens are recognized and addressed as occupational hazards (Billings et al., 2023; Korpela 2024).

These practices reflect a shift from reactive care models to anticipatory systems designed to buffer the mental health impacts of routine occupational trauma.

8.1.3 Role and effectiveness of employee assistance programs

EAPs constitute a key mental health infrastructure within many public- and private-sector workplaces, including emergency services, health care and social services. Designed to offer confidential counseling and referral services, EAPs provide a critical bridge between workplace support and clinical care. Although EAP design and fidelity vary considerably across settings, their impact in mitigating PTSD onset has been supported in observational and quasi-experimental studies (Creamer et al., 2012; Jacobson Frey**,** 2012).

Best-performing EAPs exhibit the following characteristics.

- Timely access: Programs that enable access to trauma-informed clinicians within 24 to 48 hours of incident exposure are associated with lower rates of chronic PTSD (Billings et al., 2023).
- Integrated referral pathways: EAPs that connect seamlessly with cognitive behavioral therapy, peer support and pharmacological services facilitate more effective longitudinal care (Bisson et al., 2022; Clair et al., 2019).
- Confidentiality and organizational support: Uptake is highest when EAPs are framed as confidential, endorsed by leadership and actively promoted by supervisors (Matthews et al., 2021; Moore et al., 2023).

In Minnesota, EAPs are often augmented by local innovations such as the MnFIRE peer support initiative. These efforts improve reach and relevance, particularly in rural fire departments where access to licensed trauma clinicians may be limited. However, rigorous evaluation of EAP impact in these contexts remains a notable gap.

8.2 Return-to-work programs for workers with PTSD

8.2.1 Components of effective return-to-work programs

Returning to work after a PTSD diagnosis is not simply a matter of medical clearance; it requires a carefully structured, psychologically informed process that addresses both the clinical realities of PTSD and the occupational demands. In the workers' compensation system, returning to work may involve vocational rehabilitation; however, in this section, returning to work is conceptualized more broadly to include the medical and psychological components critical to recovery and reintegration for trauma-affected workers. Successful return-to-work programs recognize PTSD affects functional capacity, cognitive processing, emotional regulation and interpersonal functioning, all crucial for the safe performance of duties in high-risk professions.

This research review identified several components of effective return-to-work programs and specific interventions for sustainable outcomes.

- Structured psychological support: Cognitive behavioral therapy integrated into return-to-work programs has been shown to improve psychological outcomes and facilitate returning to work among individuals with work-related PTSD. Interventions typically include stress inoculation, emotional regulation and trauma-focused cognitive reframing. A recent meta-analysis found CBT-based interventions reduced the length of sick leave and accelerated returning to work by an average of 1.5 days (Xu et al., 2023). Another systematic review reported return-to-work rates as high as 85% for multi-domain interventions that combined psychological treatment with workplace accommodations (Nowrouzi-Kia et al., 2023).
- Phased reintegration approaches: Gradual return-to-work strategies, starting with light-duty tasks or reduced hours, help workers with PTSD rebuild confidence and manage stress triggers. These approaches are associated with improved functional outcomes and lower relapse risk. Evidence shows that phased reintegration, when combined with psychological support and workplace accommodations, enhances return-to-work rates and long-term job retention (Nowrouzi-Kia, et al., 2023; Arends et al., 2014).
- Peer support integration: Peer support programs, involving trained colleagues who have personal experience with trauma recovery, contribute to higher engagement rates, lower stigma and stronger emotional support networks. These interventions are associated with up to a 35% reduction in symptom severity and reduced program dropout rates (Davidson and McDuffie, 2020; Stevens and LaSala, 2015; Lloyd-Evans et al, 2018).
- Individual readiness assessment: Successful return-to-work planning depends on personalized assessments of psychological readiness, functional capacity and occupational risk exposure (Franche et al., 2007; Lee et. Al, 2023). Minnesota's PTSD treatment parameters (Minn. R. 5221.6700, subp. 4) require a mental health care provider to engage and collaborate with the patient to establish an individual treatment plan, including addressing returning to work. Best practice frameworks emphasize using structured clinical interviews, validated readiness assessments and joint planning with health care providers.
- Supervisor and organizational support: Organizational factors, including supervisor training, flexible scheduling (when feasible) and visible endorsement of mental health recovery as a workplace priority, are crucial in sustaining return-to-work efforts (Dimoff et al, 2019; Grunert et al, 1992; SAMHSA, 2014). However, flexible scheduling remains a significant implementation barrier for smaller employers, such as

public safety departments, due to limited staffing and operational constraints. These smaller departments may struggle to accommodate graduated or modified duty assignments, even when clinically indicated, which can delay or disrupt the reintegration process. As such, aligning return-to-work protocols with public safety department capacity and resourcing is essential for broader adoption of best practices.

In addition, the following components focus on sustainability in return-to-work programs. They are drawn from national guidelines about trauma-informed occupational health and from Minnesota's implementation experience.

- Embedded resilience maintenance (Joyce et al, 2018): Provides ongoing resilience workshops, CBT boosters and mindfulness coaching for at least six to 12 months post-return.
- Cross-disciplinary case management (Cullen et al, 2018): Fosters structured collaboration between mental health providers, occupational therapists, return-to-work coordinators, human resources and supervisors.
- Continuous readiness assessment (Nigatu et al, 2016): Monitors symptom levels and functional readiness quarterly during the first year post-return and adjusts return-to-work plans dynamically based on mental health reassessments.

8.2.2 Return to work in practice: California and Ontario programs for first responders

Other jurisdictions have established comprehensive return-to-work models that can inform Minnesota's approach. The following examples include one public-sector initiative program operating outside of the workers' compensation system and one program embedded within the workers' compensation system.

The California Commission on Peace Officer Standards and Training (POST) offers an Organizational Wellness Program designed to support law enforcement agencies in developing tailored wellness initiatives (post.ca.gov/wellness). This program is facilitated by experts from the University of California San Diego Centers for Integrative Health and focuses on integrating physical, emotional and mental health strategies for both sworn and non-sworn personnel. The program emphasizes evidence-based practices, including resilience training and peer support, to enhance officer well-being and performance. While this program operates alongside the workers' compensation system, it is not embedded within it.

Ontario's legislative framework for PTSD among first responders is established through the 2016 Supporting Ontario's First Responders Act (Post-Traumatic Stress Disorder) (www.ola.org/en/legislative-business/bills/parliament-41/session-1/bill-163). This act amended the Workplace Safety and Insurance Act by introducing a presumption that PTSD diagnosed in first responders is work-related, thereby facilitating access to benefits. Additionally, the act empowered the Ministry of Labour to require employers to provide information about their PTSD prevention plans, integrating mental health considerations into occupational health and safety practices.

The following practices are drawn from California's POST Organizational Wellness Program and Ontario's Supporting Ontario's First Responders Act (2016). They reflect complementary strategies to support first responders with PTSD and may inform Minnesota's future return-to-work models.

- Early case management activation: Ontario – prompt engagement of case managers ensures timely coordination of services and access to benefits.

- Mandatory peer mentor assignment: Ontario – assigning trained peer mentors supports psychological recovery and workplace integration.
- Cross-sector collaboration: California and Ontario – both emphasize coordination among health care providers, return-to-work coordinators and supervisors.
- Adapted duties based on recovery: California – modified job tasks support phased reintegration aligned with psychological recovery.

8.2.3 Return-to-work initiatives in Minnesota

Minnesota's commitment to enhancing return-to-work outcomes for PTSD-affected first responders is reflected in several promising initiatives.

- MnFIRE Peer Support Program (for firefighters only): Provides trained peer supporters who engage with injured firefighters throughout the recovery and return-to-work process. This program is offered through the Minnesota Firefighter Initiative (MnFIRE), a nonprofit collaboration between the Minnesota Professional Fire Fighters, the Fire Chiefs Association and the State Fire Marshal's Office. Participation is limited to fire service members. The program reduces stigma and encourages continual mental health monitoring after returning to work (mnfireinitiative.com/peer-support).
- Minnesota Responder Resilience Program (multi-agency, open to all first responders): Offers resilience-building and stress-inoculation training sessions before and during return to work, reinforcing cognitive-behavioral coping skills. The program is administered by the Minnesota Department of Public Safety in partnership with regional public safety agencies. It serves law enforcement officers, firefighters, EMS personnel and corrections officers (ahn.mnsu.edu/services-and-centers/center-for-rural-behavioral-health/about-us/current-center-projects/tough-call-protocol-and-resilient-responders-program).
- Department of Public Safety Peer Support Networks (regional, multi-disciplinary): Offers enhanced regional coverage of peer services, particularly for rural responders with limited access to specialized trauma services. These networks are coordinated by public safety agencies and include certified peer supporters across disciplines, including law enforcement, EMS, fire service and corrections (dps.mn.gov/about-dps/programs-and-legislative-requirements/peer-peer-training-standards).
- Vocational Rehabilitation Integration (selected public safety departments): Some public safety departments offer modified vocational rehabilitation programs that focus on physical accommodation, psychological reintegration and role adaptation. Eligibility varies and is often based on department-level discretion or injury type. These programs are less standardized across jurisdictions (dli.mn.gov/business/workers-compensation/work-comp-vocational-rehabilitation).

While rigorous evaluation is still underway, early survey and administrative data from Minnesota-based programs suggest promising outcomes in terms of participant satisfaction, supervisor engagement and reported improvements in post-return-to-work resilience. A formal evaluation of the MnFIRE Peer Support Program and the Minnesota Responder Resilience Program is currently being conducted by the Minnesota Department of Health and partnering universities.

8.3 Conclusions

Work-related PTSD prevention strategies and return-to-work programs are evolving. Preventing work-related PTSD is important for high-risk occupations, such as first responders, and effective prevention and management can be integrated into existing programs, such as occupational health and safety and EAPs.

Returning to work for someone with work-related PTSD can be challenging because the re-entry into the workplace may trigger PTSD symptoms. A structured return-to-work program with phased integration, supervisor support, a peer support network and flexibility in duty modification are key strategies that can mitigate risk and improve functional recovery. Many of these practices are included in statewide pilots and organizational return-to-work protocols already operating for first responders in Minnesota. Programs in California and Ontario also provide practical examples of return-to-work programs for peace officers and first responders.

9. Conclusions

The following is a summary of the essential conclusions that guide the primary recommendations from this study.

9.1 PTSD diagnosis and claim process

- **The combination of statutory timelines for notice, reporting and acceptance or denial of a claim, lack of clarity around the appropriate date of injury and DSM-5 diagnostic requirements create confusion and may lead to higher rates of denials.**
  The employee, employer and insurer each have statutory time limitations for specific required actions at the beginning of a claim, for example, providing notice, completing the report of injury and accepting or denying the claim. These time limitations and confusion around which date to assign to the injury often conflict with the DSM-5 requirement that an employee experience at least one month of persistent systems before PTSD can be diagnosed. These factors and timelines may contribute to confusion among workers, employers and insurers, affect timing and preparation of the First Report of Injury and influence the determination of liability before there is a PTSD diagnosis that meets the statutory definition. (Sections 3 and 4.)
- **PTSD claims are not easily identifiable using First Report of Injury (FROI) data.**
  Insurers and self-insured employers inconsistently or inaccurately identify PTSD and mental injury claims on FROI submissions. This makes identification of PTSD claims for analysis difficult. For this study, identification of PTSD claims required a costly artificial intelligence tool and extensive manual review due to inaccurate coding and incomplete injury narratives. Industry coding behavior and narrative drafting should be addressed to increase fidelity in future studies. (Section 4.)
- **Access to qualified providers who can diagnose PTSD is limited.**
  Minnesota Statutes § 176.011, subdivision 15 (d), requires a PTSD diagnosis from a licensed psychiatrist or psychologist. This excludes master's-level clinicians, thereby reducing access to a PTSD diagnosis, particularly in rural areas and under-resourced settings. The restrictions on eligible diagnosing clinicians reduce opportunities for early identification and intervention for workers with PTSD. (Section 7.)
- **PTSD claims are denied at high rates leading to more settlements.** More than 90% of PTSD claims are initially denied and a large proportion of the denied claims proceed to settlements through the legal process. In addition to drawing out the claim process and creating a burden on the worker, additional costs are incurred through legal processes. Claims that involve settlements are more costly than other claims. The high rates of denial may be due, in part, to the incompatibility of the claim process with the development, diagnosis and treatment of mental injuries. (Section 4.)
- **Presumption does not significantly increase rates of acceptance.**
  Despite the statutory presumption of work-relatedness for certain occupations, PTSD claims from workers in occupations covered by a presumption are still denied at high rates. Denials regularly dispute the diagnosis itself, rather than denying based on causation or providing substantial factors to rebut the presumption. Most claims with denials based on a disputed diagnosis are not accepted even after the claim matures past the initial filing of the claim and DSM-5 timelines. (Section 4.)
- **Stakeholders lack a clear understanding of how the system operates for PTSD claims.**
  Employers, insurers and workers express confusion about legal requirements, including attaining a diagnosis under the DSM-5 criteria and how to apply and/or rebut the presumption, resulting in

inconsistent claim outcomes and a perceived lack of fairness. Workers describe a lack of clarity and guidance in the process and are unsure how or why decisions are made by insurers. (Sections 5 and 6.)

9.2 PTSD treatment and return-to-work outcomes

- **Most PTSD cases will respond well to treatment. Proactive prevention and early detection of PTSD improves outcomes and reduces costs and burdens to claimants, insurers and employers.**
  PTSD is a complex condition. It can be managed with appropriate diagnosis and treatment. Preventing work-related PTSD is important for high-risk occupations, such as first responders, and effective prevention and management can be integrated into existing programs, such as occupational health and safety and employee assistance programs (EAPs). (Sections 7 and 8.)
- **Effective return-to-work programs with phased integration, supervisor support, a peer support network and flexibility in duty modification can mitigate risk and improve functional recovery.**
  Many of these practices are included in statewide pilots and departmental return-to-work protocols already operating for first responders in Minnesota. Programs in California and Ontario also provide practical examples of return-to-work programs for peace officers and first responders. (Section 8.)
- **A prolonged claim resolution process and high incident rate of independent medical examinations undermine treatment and return-to-work outcomes.**
  Administrative delays in the claims process can lead to worsened PTSD symptoms and prolonged absence from work, reducing the likelihood of successful reintegration. (Sections 7 and 8.) The more frequent involvement of independent medical examinations (IMEs) after enactment of the presumption law creates a more complex and prolonged claim resolution process for PTSD injuries experienced by presumption workers. (Section 4.)
- **Stigma and procedural complexity suppress claims.**
  Cultural stigma, fear of retaliation and the adversarial nature of the workers' compensation process discourage eligible workers from filing PTSD claims, likely contributing to underreporting and untreated trauma. (Sections 6, 7 and 8.)

10. Recommendations

The workers' compensation system in Minnesota strives to create an environment where injured workers promptly receive benefits and services and where the system operates efficiently and effectively. The goal of this report is to identify systemic or regulatory changes to improve the experience and outcomes of employees with work-related PTSD. Making the following improvements would provide workers with a better experience throughout the process of diagnosing PTSD, filing a work-related PTSD claim, receiving effective treatment and returning to work. Some changes relate to administration, education and outreach, which can be made within DLI, while others would require legislative action to amend statutes that were designed for physical injuries to the realities of compensable mental injuries in the workplace.

The following recommendations include a brief summary of the previous sections and follow from the conclusions described in Section 9. Note that most of the recommendations in 10.1 and 10.2 would be relatively low cost to implement, unless otherwise noted.

10.1 Recommendations to improve the administrative processing of claims

PTSD claims are distinct from typical physical injury claims. PTSD symptoms may develop gradually over weeks or months and can result from multiple traumatic exposures, which can delay formal diagnosis. This delayed onset, combined with the complexity of mental health assessments, presents challenges for the timely and accurate processing of PTSD claims.

The data show some claims are denied early in the process, often before a definitive diagnosis has been established by a qualified mental health professional. Such early denials may lead to more claims being resolved through legal settlements, which can increase both financial and emotional burdens on workers, rather than administrative adjudication. Additionally, current administrative data do not consistently include specific markers to identify mental injury claims, which limits the ability to monitor trends and outcomes effectively.

1. **Improve data quality on the First Report of Injury (FROI) for mental injury claims.**
   The absence of explicit data fields or standardized indicators for PTSD claims within the FROI complicates comprehensive monitoring and evaluation of these claims. At a high rate, insurers and self-insured employers inconsistently or inaccurately identify PTSD and mental injury claims on FROI forms. Improved data capture along with monitoring capabilities will enable more informed policy decisions and support ongoing efforts to address systemic challenges related to work-related PTSD claims.
   - Insurers and self-insured employers should use consistent Workers Compensation Insurance Organizations (WCIO) codes to identify mental injury claims on the FROI, such as "Mental Disorder" or "Mental Stress." This clarity would replace the commonly used but vague code "No Physical Injury," which only identifies the absence of a physical injury and does not specify a mental injury. They should also be explicit in the FROI injury narrative about the types of mental injuries being reported by the worker and the employer, stating clearly if a claim is related to PTSD. DLI can also explore with WCIO and Minnesota Workers' Compensation Insurers Association (MWCIA) adding a PTSD-specific "Nature of Injury" code.
   - DLI can provide outreach and education to insurers and self-insured employers to achieve voluntary compliance. For instances where voluntary compliance is not forthcoming, it is recommended DLI be given more specific penalty authority for inaccurate or insufficient claim data submitted to DLI; this would require a legislative amendment.

2. **Standardize the date of injury definition for PTSD.**
   There is variability and uncertainty regarding the "date of injury" for PTSD claims. Statutes and administrative guidelines should clearly define the "date of injury" for PTSD claims as the date on which a qualified mental health professional provides a formal diagnosis. This clarification will support consistent claim processing and reduce premature denials based on traumatic event dates. This would require a legislative amendment.
3. **Align early claim timelines to the PTSD diagnosis date and provide education around statutory requirements in the claim process.**
   Current statutory timelines written for physical injuries are not compatible with the nature of PTSD injuries and the DSM-5 requirement of one month of persistent symptoms. Aligning early claim timelines to the clinical diagnosis date will enhance fairness and consistency in claims administration. It is recommended policymakers explore timelines specific to mental injuries. See the following for example.

   - *Notification by employee of injury*: Currently, the worker must report the injury to the employer within 14 days of the occurrence of the injury to ensure eligibility, though reports made within 180 days may still be valid under certain conditions (Minn. Stat. § 176.141). It is recommended to add language specific to PTSD to chapter 176 requiring notice of injury by the employee within a certain number of days after receiving a diagnosis of PTSD. This would require a legislative amendment.
   - *Acceptance or denial by insurer of claimed injury*: Currently, within 14 days of notice to or knowledge by an employer of a reportable injury, the insurer must either accept the claim and begin benefit payments or issue a denial (Minn. Stat. § 176.221, subd. 1). It is recommended to clarify the insurer's 14-day statutory period for acceptance or denial. It should begin from the date the insurer receives a written or formal PTSD diagnosis. This would require a legislative amendment.
   - *Increase education and outreach to stakeholders about the claims process*: Regardless of future changes, there is a need for broader understanding of how the system works for work-related PTSD claims and stakeholder obligations. This could include: DLI and stakeholders identified in Section 6 creating more opportunities for public engagement and training; developing clear and accessible educational materials; and strengthening relationships with stakeholders.
     - For example, the posting required by Minn. Stat. § 176.139, subd. 1, could be updated to include specific information about the diagnostic requirement for a PTSD claim, which is more likely to reach employees and employers pre-injury, and the *An employee's guide to Minnesota's workers' compensation system*, sent to employees post-injury, could be updated to include more information specific to PTSD claims. Neither example would require a legislative amendment.

4. **Increase education and enforcement around PTSD denial narratives.**
   Many stakeholders reported denial notifications often lack sufficient detail about the reasons for denial and the evidence supporting that decision. This can lead to confusion and uncertainty for injured workers and result in unnecessary litigation. For all claims, the law requires a denial of liability to contain a specific and clear statement of the facts forming the basis for denial. (Minn. R. 5220.2570, subp. 2(E).) For claims subject to the rebuttable presumption, there is a specific requirement that "[a]ny substantial factors that are used to rebut this presumption that are known to the employer or insurer at the time of the denial of liability shall be communicated to the employee on the denial of liability." (Minn. Stat. § 176.011, subd. 15 (e).)

It is recommended DLI provide outreach and education to insurers and self-insured employers regarding the legal requirements of denials, and their application to claims for PTSD, whether or not the claims are subject to the rebuttable presumption. If outreach and education do not adequately address the behavior, DLI may assess penalties under Minn. R. 5220.2570, subps. 10 and 11, for frivolous or nonspecific denials (a penalty under this rule is not a determination on the merits of the denial of primary liability). The current penalty amount may not be an adequate deterrent, for example, a penalty for a nonspecific denial is five hundred dollars for each violation. Increased and targeted enforcement in this area may require additional DLI staffing resources and a change to DLI's penalty authority would require a legislative amendment or rule change.

5. **Continue collection and analysis of detailed claims data to inform future policy decisions regarding the PTSD presumption.**
   The rebuttable presumption law is intended to reduce the burden of proof that PTSD is work-related for workers in specified occupations and to ensure such cases are managed appropriately and efficiently. Analysis of Minnesota workers' compensation claims data shows that denial rates for claims filed by workers in covered occupations are like those for non-covered occupations. Claims from occupations covered by the presumption settle at a higher rate and claimants covered under the rebuttable presumption do not demonstrate higher return-to-work rates compared to other claimants. Current data are insufficient to provide recommendations about the rebuttable presumption law, including which occupations are covered. It is recommended additional analysis be conducted regarding the effect of the rebuttable presumption, the occupations covered by the presumption and the rebuttal standard. The data should be analyzed after any administrative and statutory changes are made following this study and the data for claims filed after the changes have had the opportunity to mature.

10.2 Recommendations for expanding access to PTSD diagnosis and treatment and vocational rehabilitation services

The report highlights significant limitations in behavioral health care resources, especially in rural and underserved regions of Minnesota. Current workers' compensation regulations restrict the authority to diagnose PTSD for workers' compensation purposes exclusively to psychiatrists and doctoral-level psychologists. This limitation creates access barriers, delaying timely diagnosis and complicating effective management of PTSD claims. Delays in diagnosis can subsequently impede timely access to necessary treatment services and benefits. Additionally, most individuals diagnosed with PTSD respond well to treatment. However, the field of PTSD treatment is continually evolving, with new therapies emerging and ongoing research refining understanding of treatment efficacy and safety. It is essential that workers' compensation programs provide access to effective, evidence-based treatment options to support recovery and return to work.

6. **Expand the list of qualified diagnosing providers.**
   Revise workers' compensation statutes to authorize licensed master's-level mental health clinicians — including Licensed Independent Clinical Social Workers (LICSW), Licensed Marriage and Family Therapists (LMFT), Licensed Professional Clinical Counselors (LPCC) and/or Psychiatric Mental Health Nurse Practitioners (PMHNP) — to perform PTSD diagnostic assessments for compensation purposes, consistent with broader state licensing standards. Expanding diagnostic eligibility promotes timely recognition of PTSD, enabling more effective claim processing and treatment access and, particularly, benefiting workers in rural and underserved communities. This would require a legislative amendment.

7. **Regularly update best practices for diagnosis and treatment.**
   DLI and the Medical Services Review Board should conduct periodic reviews of PTSD treatment guidelines, ideally every two to three years. A panel of experts could be convened to assess whether:

   - new treatments warrant inclusion on the list of evidence-based options;
   - recent research strengthens or modifies the evidence supporting existing treatments; and
   - any treatments should be removed due to evidence of ineffectiveness or safety concerns.

   Regularly updating treatment parameters ensures injured workers receive access to the most effective and safe interventions, thereby promoting better health outcomes and supporting timely return to work. An expert panel review process provides a systematic approach to maintaining alignment with advancing clinical knowledge.

   - For example, two types of effective therapies identified in Section 7 are not currently addressed by Minnesota's PTSD treatment parameters, namely imagery rehearsal therapy and virtual reality exposure therapy. Further discussion and analysis by experts would be useful.

8. **Target outreach regarding vocational rehabilitation services available from DLI's Vocational Rehabilitation unit for denied PTSD claims.**
   The DLI Vocational Rehabilitation unit (VRU) provides vocational rehabilitation services to injured workers eligible for rehabilitation services whose claims have been denied, while the worker is challenging the denial. (Minn. Stat. § 176.104.) The legislative rationale for VRU was early vocational rehabilitation intervention to provide needed vocational assistance to injured workers before, rather than after, a determination of liability by the courts. In recent years, the volume of PTSD claims for which VRU has provided assistance has dropped significantly. It is recommended VRU develop an outreach plan to describe the available return-to-work assistance.

   - For example, DLI could increase outreach specifically to employee assistance program or nonprofit organizations that support first responders and their families, outreach to attorneys who represent injured workers and outreach to the broader workers' compensation community through DLI publications.

10.3 Summary of best practices identified by stakeholders and literature review

Stakeholder interviews and panel discussions in Sections 5 and 6 surfaced clear opportunities for policy and administrative reform within Minnesota's workers' compensation system for work-related PTSD claims. While perspectives varied by role, several shared priorities emerged that align with best practices for prevention, early detection and return-to-work as identified in Sections 7 and 8. A brief summary of the stakeholders' perspective and the literature review results are included here. For more in-depth treatment of these subjects, refer back to the respective sections.

1. **Establish early intervention pathways that operate independently of formal workers' compensation claims.**
   In the stakeholder feedback, first responders, clinicians and employer representatives consistently noted that many workers delay or avoid reporting PTSD symptoms due to fear of retaliation, stigma surrounding mental health and concerns about the potential impact on career advancement or fitness-for-duty status. Participants emphasized that employers offering confidential mental health check-ins,

trauma-informed screening and informal support options, prior to the initiation of a workers' compensation claim, could reduce barriers to early care.

- In Section 8, best practices for embedding PTSD prevention into occupational safety and health systems are identified as having the following components.
  - *Occupational stress inoculation training*: Using pre-deployment or pre-exposure, OSIT teaches cognitive and behavioral strategies through simulated stress scenarios. Effectiveness studies have shown a 25% to 50% reduction in PTSD symptoms among trained first responders.
  - *Routine screening and early intervention*: Embedding routine mental health assessments allows for early detection of subclinical symptoms, timely referrals and prevention of chronicity.
  - *Peer support integration*: When formally embedded into workplace protocols, peer support networks reduce stigma, facilitate early help-seeking and promote emotional debriefing after traumatic events. (Stakeholders also identified peer support programs as uniquely positioned to reduce stigma and promote help-seeking behavior.)
  - *Trauma-informed safety protocols*: These protocols include post-incident debriefings, workload regulation after major incidents and supervisor training in trauma recognition and response. Such policies ensure cumulative psychological burdens are recognized and addressed as occupational hazards.

2. **Successful return-to-work programs require a carefully structured process.**
   Employers noted that structured accommodations to support returning to work, such as light-duty assignments or temporary role modifications, can facilitate early recovery while avoiding the adversarial dynamics of the formal workers' compensation process. Insurers expressed interest in coordinated return-to-work frameworks.
   - Section 8 details successful components of return-to-work programs that include:
     - structured psychological support;
     - phased reintegration approaches;
     - peer support integration;
     - supervisor and organizational support; and
     - embedded resilience maintenance.
3. **Employers require more support and education from their insurers.**
   During stakeholder interviews, employers generally agreed more training, clearer guidance and stronger collaboration with insurers were needed to help them successfully navigate the workers' compensation system, including accommodating employees during the recovery process and how and when to submit a claim.

10.4 Other ideas for system improvement and reform

1. **Insurers and self-insured employers could use predictive analytics to support return-to-work outcomes, monitor treatment methodologies and assess claims data for patterns of disparity.**
   - *Return to work likelihood*: Machine-learning models using structured claims and employment data can measure return-to-work likelihood based on factors like injury type, tenure, prior wages and treatment patterns. Models such as Random Forest or XGBoost are well-suited for predicting complex outcomes like return-to-work rates. For example, the monopolistic Ontario Workplace Safety and Insurance Board built predictive return-to-work models that tailor case management based on worker risk profiles and the Johns Hopkins Adjusted Clinical Groups (ACG) System uses

similar tools to predict complex medical outcomes. These tools could help claims adjusters personalize return-to-work plans early in the process.

- *Monitoring treatment pathways*: Insurers and self-insured employers could also monitor PTSD treatment pathways in real time. After a PTSD diagnosis, it is often unclear whether workers receive the best available treatments (for example, cognitive-behavioral therapy, eye movement desensitization and reprocessing). Health process mining tools can analyze sequences of medical billing transactions to identify if workers are following evidence-based treatment pathways — or falling through the cracks. Early intervention if treatment drops off can prevent worsening disability. For example, Kaiser Permanente's Behavioral Health Initiative uses process-mining tools to monitor mental health care adherence and Truveta Health AI enables real-time tracking of treatment gaps in clinical care.
- *Auditing tools for fairness in claim administration*: Analytics tools can audit claims processing data for patterns of disparity — such as whether PTSD claims from certain occupations, races or genders are denied at higher rates even when controlling for other factors. Techniques like Disparate Impact Analysis and Outlier Detection could identify concerning trends. For example, the New York State Department of Financial Services uses fairness analytics to monitor insurer practices and the Equal Employment Opportunity Commission has piloted AI tools to detect workplace bias patterns.

2. **Require disputed PTSD claims to be reviewed by impartial medical experts agreed upon by both parties instead of using independent medical examinations.** Workers and clinicians perceive bias in independent medical examinations and inconsistencies in claim denials. These issues contribute to distrust in the claim process and may discourage legitimate filings or timely treatment. Requiring disputed PTSD claims to be reviewed by impartial medical experts agreed upon by both parties, instead of using the current process of independent medical examinations, is one possible remedy to this concern. This would represent a systemic shift from current practice and require a complex law change.

3. **Increase data collected by the DLI and OAH.**
   A meaningful barrier to this report was the lack of comprehensive data. For example, the Medical Call Data from the Minnesota Workers' Compensation Insurers Association (MWCIA) used to describe costs and trends in Section 4 are limited to data from insurers. A significant percentage of PTSD claims in Minnesota are with self-insured employers and medical cost data from self-insured employers were not readily available for this report.

   - *Medical data:* DLI does not broadly collect information about medical treatment for accepted claims. Currently, DLI requests Medical Call Data from MWCIA to conduct research on medical costs and trends in Minnesota's workers' compensation system; however, medical cost and treatment data could be collected by DLI from insurers and self-insured employers to improve research efforts. This would require a law change and the cost to the system may be substantial. Of note, for denied claims, which account for about 90% of PTSD claims, any real-time treatment or cost data would reside with the employee, their treating physician or their group health provider – all outside of the workers' compensation system. So, DLI collecting PTSD data for accepted claims would represent a unique subset of PTSD data.
   - *Employment data*: DLI's workers' compensation data could be linked with the Department of Employment and Economic Development's (DEED's) unemployment insurance wage records on a

recurring basis to more readily identify and analyze return-to-work outcomes. This may require a law change and would be a high-cost item.

- *Stipulation for Settlement data*: Stipulations for Settlement are currently filed with the Office of Administrative Hearings (OAH). DLI receives filed Stipulations for Settlement from OAH in a PDF format with limited associated metadata (e.g., document type and submitted date). If upon filing, the filer was required to enter fields with certain claim and payment data described in the text agreement of the Stipulation for Settlement, it would improve claim data available to be aggregated and studied to describe the life of a claim. This would likely require a significant change to the technology systems of both DLI and OAH, a possible law change, and filer buy-in; it would also be a high-cost item.

11. Limitations and Future Research Directions

11.1 Limitations

The study examined a number of aspects of PTSD as a work-related condition and the process of managing this condition in the workers' compensation claims system. Each section of the report encountered challenges. When considering the results of this study it is important to keep the following limitations in mind.

- Variability in data sources: The analysis of the legal framework of PTSD in workers' compensation systems encountered considerable variability in data sources. Differences in reporting standards, legal frameworks, and claim adjudication processes across jurisdictions may limit the generalizability of findings.
- Lack of longitudinal data: Many studies and claim records rely on cross-sectional data, making it difficult to assess long-term outcomes of PTSD cases, including recurrence, return-to-work success, and chronic disability.
- Potential underreporting: Stigma surrounding mental health conditions may lead to underreporting of PTSD symptoms. Additionally, the shortages of mental and behavioral health care providers, particularly in rural areas, may lead to PTSD cases being underdiagnosed. These factors will affect the accuracy of estimates of the burden of work-related PTSD.
- Inconsistencies in the application of diagnostic criteria: Variability in how PTSD is diagnosed and assessed by different medical professionals and evaluators may lead to differential claim acceptance rates.
- Employer-specific differences: Self-insured employers may have differing claim adjudication processes from insurers, making direct comparisons challenging.

11.2 Future Research Directions

This assessment of PTSD as a work-related condition identified a number of areas where additional research is needed to characterize the burden of PTSD, the optimal methods to prevent and manage PTSD, and track the outcomes of PTSD cases. The following are some examples of potential research involving PTSD as a work-related condition.

- Population based assessment of PTSD prevalence within specific occupational populations: This is needed to characterize burden and evaluate barriers to diagnosis and treatment.
- Longitudinal studies on PTSD claim outcomes: Examining long-term trajectories of claimants, including treatment effectiveness, return-to-work rates, and the impact of early interventions.
- Comparative analysis across jurisdictions: Further investigation on detailed differences in PTSD claim approval rates, legal frameworks, and policy effectiveness across different states to identify best practices.
- Impact of legal reforms: Evaluating the effects of recent legislative changes, such as expansions to the rebuttable presumption list, on claim acceptance rates and claimant outcomes across different states.
- Equity in adjudication: Analyzing whether disparities exist in PTSD claim outcomes based on demographic and occupational factors (e.g., gender, race, occupation) and employer insurance type (self-insured vs. insured entities).

- Duty disability: HF 1234/SF 1959 (2023) modified duty disability provisions for firefighters and police officers. Once data from this program have matured, it may be helpful to assess whether it affected workers' compensation outcomes in occupation groups subject to the law change.
- ICD-11: At which time ICD-11 is adopted by the United States, consider whether Minnesota's statutory definition and diagnostic criteria should be expanded to include ICD-11 Complex PTSD.

12. References

12.1 List of Abbreviations

Abbreviation	Full Term
AI	Artificial Intelligence
BLS	Bureau of Labor Statistics
CBT	Cognitive Behavioral Therapy
CDC	Centers for Disease Control and Prevention
CISM	Critical Incident Stress Management
COVID	Coronavirus Disease
CPT	Cognitive Processing Therapy
DEED	Minnesota Department of Employment and Economic Development
DLI	Minnesota Department of Labor and Industry
DSM	Diagnostic and Statistical Manual of Mental Disorders
DSM-5	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition
DSM-5-TR	Diagnostic and Statistical Manual of Mental Disorders, 5th Edition, Text Revision
EAP	Employee Assistance Program
EMDR	Eye Movement Desensitization and Reprocessing
EMS	Emergency Medical Services
FROI	First Report of Injury
FY	Fiscal Year
GA	General Assembly (legislative context)
HB	House Bill
HIA	Health Impact Assessment
ICD	International Classification of Diseases
ICD-10	International Classification of Diseases, 10th Revision
IME	Independent Medical Examination
IRB	Institutional Review Board
ITQ	Impact of Traumatic Events Questionnaire
LPN	Licensed Practical Nurse
MHC	Mental Health Counselor
MMLU	Massive Multitask Language Understanding
MN	Minnesota
MWCIA	Minnesota Workers' Compensation Insurers Association
NCCI	National Council on Compensation Insurance

Abbreviation	Full Term
NIOSH	National Institute for Occupational Safety and Health
NLP	Natural Language Processing
NOID	Notice of Intention to Discontinue
NOPLD	Notice of Primary Liability Determination
OAH	Minnesota Office of Administrative Hearings
OIPRT	Occupational Injury Prevention Research Training
OSHA	Occupational Safety and Health Administration
OSIT	Occupational Stress Inoculation Training
PAO	Program Administrative Officer
PC-PTSD	Primary Care PTSD Screen
PCL	PTSD Checklist
PCL-5	PTSD Checklist for DSM-5
PERA	Public Employees Retirement Association
PPD	Permanent Partial Disability
PTSD	Post-Traumatic Stress Disorder
PTS	Post-Traumatic Stress
RA	Research Assistant
REBT	Rational Emotive Behavior Therapy
ROI	Return on Investment
SB	Senate Bill
TC Metro	Twin Cities Metropolitan Area
TPD	Temporary Partial Disability
TR	Trauma Recovery
TTD	Temporary Total Disability
UI	Unemployment Insurance
UMN	University of Minnesota
US	United States
WHO	World Health Organization

12.2 Statutory References

Minnesota Statutes Chapter 176 — Workers' Compensation Act

Minnesota Statutes § 176.011 — Definitions
- Subdivision 12a — Definition of health care provider
- Subdivision 15 — Definition of occupational disease
- Subdivision 15 — Definition of mental impairment
- Subdivision 15 — Rebuttable presumption for PTSD claims
- Subdivision 16 — Definition of personal injury

Minnesota Statutes § 176.081 — Attorney fees and dispute resolution

Minnesota Statutes § 176.102 — Rehabilitation (claims filing requirements and timelines)

Minnesota Statutes § 176.105 — Disability schedules and functional loss ratings

Minnesota Statutes § 176.111 — Death and dependency benefits

Minnesota Statutes § 176.129 — Special Compensation Fund (reimbursement provisions)

Minnesota Statutes § 176.135 — Medical services and physical rehabilitation

Minnesota Statutes § 176.155 — Independent medical examinations (location and timing)

Minnesota Statutes § 176.221 — Timelines and requirements for claim acceptance or denial
- Subdivision 1 — Claim acceptance or denial timelines
- Subdivision 3 — Penalties for late payments

Minnesota Statutes § 176.231 — First report of injury (FROI) reporting requirements

Minnesota Statutes § 176.66 — Occupational diseases

Minnesota Statutes § 176.421 — Appeals procedures (Workers' Compensation Court of Appeals)

Minnesota Rules Chapter 5220 — Workers' compensation administrative rules related to payment of compensation and vocational rehabilitation

Minnesota Statutes Chapter 353 — Public Employees Retirement Association (PERA) provisions

2023 Session Laws, Chapter 48 (House File 1234) — Legislative amendments on PTSD claims processing in public disability systems

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Appendices

Appendix A. PTSD Criteria in the DSM-5 and DSM-5-TR

Changes from DSM-5 to DSM-5-TR[22]

In 2013, the American Psychiatric Association revised the PTSD diagnostic criteria in the 5th edition of its *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-5*; 1). PTSD was included in a new category in *DSM-5*, Trauma- and Stressor-Related Disorders. All conditions included in this classification require exposure to a traumatic or stressful event as a diagnostic criterion. *DSM-5-TR* was published in March 2022 to include scientific advances since the release of *DSM-5*. No changes were made to the PTSD diagnostic criteria for adults in this update. However, the *DSM-5-TR* contains revisions to the descriptive text accompanying the PTSD criteria. One change to the revised descriptive text discusses the duration of symptoms for specific diagnostic criteria and, for the first time, refers to a lifetime diagnosis of PTSD:

> The diagnosis of PTSD requires that the duration of the symptoms in Criteria B, C, D, and E be more than 1 month (Criterion F). For a current diagnosis of PTSD, Criteria B, C, D, and E must all be met for more than 1 month, for at least the past month. For a lifetime diagnosis of PTSD, there must be a period of time lasting more than 1 month during which Criteria B, C, D, and E have all been met for the same 1-month period of time.

This issue of "lifetime diagnosis of PTSD" has been the topic of recent litigation in Minnesota. *See Peterson v. City of Minneapolis*, No. A-24-1205 (Minn. July 16, 2025).

Full copyrighted criteria and descriptive text revisions are available from the American Psychiatric Association.[23]

Criteria for PTSD

All of the criteria are required for the diagnosis of PTSD in adults. The following text summarizes the diagnostic criteria[24].

- Exposure to actual or threatened death, serious injury or sexual violence in one (or more) of the following ways:
    1. Directly experiencing the traumatic event(s).
    2. Witnessing, in person, the event(s) as it occurred to others.
    3. Learning that the traumatic event(s) occurred to a close family member or close friend. In cases of actual or threatened death of a family member or friend, the event(s) must have been violent or accidental.
    4. Experiencing repeated or extreme exposure to aversive details of the traumatic event(s) (e.g., first responders collecting human remains; police officers repeatedly exposed to details of child

[22]PTSD: National Center for PTSD, U.S. Department of Veterans Affairs. PTSD and DSM-5 - PTSD: National Center for PTSD; accessed April 18, 2025.
[23]American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed, text rev.) doi.org/10.1176/appi.books.9780890425787
[24]National Library of Medicine at the National Institutes of Health. Exhibit 1.3-4, DSM-5 Diagnostic Criteria for PTSD -- Trauma-Informed Care in Behavioral Health Services -- NCBI Bookshelf; accessed April 17, 2025.

abuse). **Note:** Criterion A4 does not apply to exposure through electronic media, television, movies, or pictures, unless this exposure is work related.

B. Presence of one (or more) of the following intrusion symptoms associated with the traumatic event(s), beginning after the traumatic event(s) occurred:

1. Recurrent, involuntary, and intrusive distressing memories of the traumatic event(s).
2. Recurrent distressing dreams in which the content and/or affect of the dream are related to the traumatic event(s).
3. Dissociative reactions (e.g., flashbacks) in which the individual feels or acts as if the traumatic event(s) were recurring. (Such reactions may occur on a continuum, with the most extreme expression being a complete loss of awareness of present surroundings.)
4. Intense or prolonged psychological distress at exposure to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).
5. Marked physiological reactions to internal or external cues that symbolize or resemble an aspect of the traumatic event(s).

C. Persistent avoidance of stimuli associated with the traumatic event(s), beginning after the traumatic event(s) occurred, as evidenced by one or both of the following:

1. Avoidance of or efforts to avoid distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).
2. Avoidance of or efforts to avoid external reminders (people, places, conversations, activities, objects, situations) that arouse distressing memories, thoughts, or feelings about or closely associated with the traumatic event(s).

D. Negative alterations in cognitions and mood associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following:

1. Inability to remember an important aspect of the traumatic event(s) (typically due to dissociative amnesia, and not to other factors such as head injury, alcohol, or drugs).
2. Persistent and exaggerated negative beliefs or expectations about oneself, others, or the world (e.g., “I am bad,” “No one can be trusted,” “The world is completely dangerous,” “My whole nervous system is permanently ruined”).
3. Persistent, distorted cognitions about the cause or consequences of the traumatic event(s) that lead the individual to blame himself/herself or others.
4. Persistent negative emotional state (e.g., fear, horror, anger, guilt, or shame).
5. Markedly diminished interest or participation in significant activities.
6. Feelings of detachment or estrangement from others.
7. Persistent inability to experience positive emotions (e.g., inability to experience happiness, satisfaction, or loving feelings).

E. Marked alterations in arousal and reactivity associated with the traumatic event(s), beginning or worsening after the traumatic event(s) occurred, as evidenced by two (or more) of the following:

1. Irritable behavior and angry outbursts (with little or no provocation), typically expressed as verbal or physical aggression toward people or objects.
2. Reckless or self-destructive behavior.
3. Hypervigilance.
4. Exaggerated startle response.
5. Problems with concentration.
6. Sleep disturbance (e.g., difficulty falling or staying asleep or restless sleep).

F. Duration of the disturbance (Criteria B, C, D and E) is more than 1 month.

G. The disturbance causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.

H. The disturbance is not attributable to the physiological effects of a substance (e.g., medication, alcohol) or another medical condition.

Specify whether:

With dissociative symptoms: The individual's symptoms meet the criteria for posttraumatic stress disorder, and in addition, in response to the stressor, the individual experiences persistent or recurrent symptoms of either of the following:

1. **Depersonalization:** Persistent or recurrent experiences of feeling detached from, and as if one were an outside observer of, one's mental processes or body (e.g., feeling as though one were in a dream; feeling a sense of unreality of self or body or of time moving slowly).
2. **Derealization:** Persistent or recurrent experiences of unreality of surroundings (e.g., the world around the individual is experienced as unreal, dreamlike, distant, or distorted). **Note**: To use this subtype, the dissociative symptoms must not be attributable to the physiological effects of a substance (e.g., blackouts, behavior during alcohol intoxication) or another medical condition (e.g., complex partial seizures).

Appendix B. Supplementary Tables

Table B.1. Claim paths by presumption and time period, PTSD closed claims

	Number of claims			Percentage		
	2014-2018	2019-2022	Total	2014-2018	2019-2022	Total
Presumption workers						
FROI denied, not paid	66	197	263	31%	23%	25%
FROI denied, paid benefits	22	91	113	10%	11%	11%
FROI denied, settlement	78	474	552	37%	55%	52%
FROI accepted, paid benefits	18	18	36	9%	2%	3%
Claim petition, settlement	25	55	80	12%	6%	7%
All other claims	4	23	27	2%	3%	3%
Non-presumption workers						
FROI denied, not paid	146	181	327	56%	64%	60%
FROI denied, paid benefits	10	12	22	4%	4%	4%
FROI denied, settlement	55	34	89	21%	12%	16%
FROI accepted, paid benefits	22	40	62	8%	14%	11%
Claim petition, settlement	18	10	28	7%	4%	5%
All other claims	12	6	18	5%	2%	3%

Table B.2. Denial reasons by filing gap among closed PTSD claims by presumption workers, injury years 2021 to 2023

	Days from injury date to claim filing			
Denial reason	**30 days or fewer**	**31 - 90 days**	**91 - 180 days**	**181 or more days**
Presumption of compensability, as defined by juris., does not apply	32%	28%	30%	31%
Stress non-work related	24%	25%	32%	27%
No injury per statutory definition	19%	17%	2%	6%
No medical evidence of injury	8%	18%	16%	6%
Idiopathic condition	5%	3%	2%	10%
No employee/employer relationship	4%	6%	7%	13%
Other reason*	9%	4%	11%	6%

*Other reason includes 14 less-frequent denial reasons. "Denial of Injury" was not included as a valid reason.

Table B.3. Denial reasons by filing gap among closed PTSD claims by workers in non-presumption occupations, injury years 2021 to 2023

Denial reason	Days from injury date to claim filing			
	30 days or fewer	31 - 90 days	91 - 180 days	181 or more days
Presumption of compensability, as defined by juris., does not apply	11%	7%	0%	0%
Stress non-work related	27%	33%	23%	33%
No injury per statutory definition	40%	23%	23%	27%
No medical evidence of injury	11%	16%	27%	20%
Idiopathic condition	6%	7%	8%	0%
No employee/employer relationship	0%	0%	4%	0%
Other reason	6%	14%	15%	20%

Table B.4. Vocational rehabilitation closure reason by time period and worker group, closed PTSD claims with vocational rehabilitation plan

Occupation group	Injury year time period	Number of cases	Plan complete	Settlement	Agreement	Decision and order	Unable to locate worker	Missing
Police	2014-2018	27	11%	78%	4%	0%	4%	4%
	2019-2022	98	0%	70%	13%	1%	0%	15%
All other presumption	2014-2018	12	17%	58%	17%	0%	0%	8%
	2019-2022	8	13%	38%	25%	0%	0%	25%
Health care and social services	2014-2018	7	57%	29%	14%	0%	0%	0%
	2019-2022	8	75%	0%	13%	13%	0%	0%
All other non-presumption	2014-2018	20	40%	30%	20%	5%	5%	0%
	2019-2022	12	33%	17%	25%	0%	0%	25%

Table B.5. Vocational rehabilitation outcome by time period and worker group, closed PTSD claims with vocational rehabilitation plan

Occupation group	Injury year time period	Number of cases	Working with same employer	Working with different employer	Unemployed	Missing
Police	2014-2018	27	4%	56%	37%	4%
	2019-2022	98	0%	35%	50%	15%
All other presumption	2014-2018	12	25%	33%	33%	8%
	2019-2022	8	0%	50%	25%	25%
Health care and social services	2014-2018	7	43%	0%	43%	14%
	2019-2022	8	50%	38%	13%	0%
All other non-presumption	2014-2018	20	30%	15%	55%	0%
	2019-2022	12	33%	17%	25%	25%

Table B.6. Median claim duration and indemnity benefits by claim path by presumption group and presumption period, PTSD closed claims

	Median claim duration days		Median indemnity benefits	
	2014-2018	2019-2022	2014-2018	2019-2022
Presumption workers				
FROI denied, not paid	77	44		
FROI denied, paid benefits	1,010	775	$110,500	$172,900
FROI denied, settlement	665	612	$ 85,000	$120,000
FROI accepted, paid benefits	945	380	$225,600	$100,200
Claim petition, settlement	460	409	$ 75,000	$125,000
Non-presumption workers				
FROI denied, not paid	41	52		
FROI denied, paid benefits	497	432	$ 25,800	$ 29,400
FROI denied, settlement	408	473	$ 20,000	$ 25,000
FROI accepted, paid benefits	308	252	$ 6,000	$ 8,100
Claim petition, settlement	316	317	$ 15,000	$ 36,500

Table B.7. Mean and median duration and amount paid and number of cases with indemnity benefits, closed PTSD claims

Mean values

Occupation group	Injury year time period	Weeks of TTD benefits	Weeks of TPD benefits	TTD paid	TPD paid	Settlement paid	Total benefits paid	Claim duration (days)
Police	2014-2018	69	62	$ 63,400	$ 55,200	$ 95,800	$120,100	808
	2019-2022	56	30	$ 62,800	$ 30,700	$116,200	$125,800	658
All other presumption	2014-2018	57	43	$ 50,500	$ 26,300	$ 83,800	$ 93,000	864
	2019-2022	21	25	$ 22,600	$ 5,600	$101,800	$ 94,400	535
Health care and social services	2014-2018	9	--	$ 6,100	--	$ 30,400	$ 26,100	407
	2019-2022	17	16	$ 10,900	$ 2,900	$ 34,700	$ 24,400	363
All other non-presumption	2014-2018	29	13	$ 22,400	$ 4,500	$ 41,200	$ 42,800	519
	2019-2022	19	19	$ 15,100	$ 2,100	$ 41,600	$ 38,700	374

Median values

Occupation group	Injury year time period	Weeks of TTD benefits	Weeks of TPD benefits	TTD paid	TPD paid	Settlement paid	Total benefits paid	Claim duration (days)
Police	2014-2018	75	31	$ 61,500	$ 42,300	$ 87,100	$100,000	684
	2019-2022	52	27	$ 63,100	$ 29,300	$120,000	$125,000	620
All other presumption	2014-2018	57	50	$ 51,100	$ 16,600	$ 70,000	$ 84,300	664
	2019-2022	13	8	$ 10,100	$ 2,300	$102,500	$ 93,000	486
Health care and social services	2014-2018	5	--	$ 2,800	--	$ 20,000	$ 16,000	365
	2019-2022	11	10	$ 6,700	$ 2,000	$ 15,900	$ 14,200	296
All other non-presumption	2014-2018	21	13	$ 10,800	$ 4,600	$ 20,000	$ 20,000	395
	2019-2022	9	7	$ 6,400	$ 2,100	$ 25,700	$ 25,000	309

Number of cases

Occupation group	Injury year time period	TTD paid	TPD paid	Settle-ment paid	Total benefits paid	Claim duration (days)
Police	2014-2018	30	17	102	106	106
	2019-2022	88	43	539	552	554
All other presumption	2014-2018	12	7	35	40	40
	2019-2022	17	5	84	95	94
Health care and social services	2014-2018	9	--	23	29	29
	2019-2022	25	14	17	37	36
All other non-presumption	2014-2018	22	6	71	81	79
	2019-2022	26	6	47	61	59

"--" denotes fewer than five cases paid benefit.

Appendix C. Independent Medical Examinations

Insurers (including self-insured employers) often use an independent medical examination (IME) to provide an additional opinion about an injured worker's diagnoses, whether other conditions are related to the workplace injury, whether the worker has attained maximum medical improvement, and other medical and job-related issues. IMEs may involve an actual examination and diagnostic testing of an injured worker or only the review of submitted medical records. The medical provider performing the IME writes a report to the insurer, which then submits the report to the Department of Labor and Industry or to the Office of Administrative Hearings if the claim is involved in an administrative dispute or litigation event.

This appendix section provides statistics about IMEs because IMEs were mentioned in many interview and focus group comments and could play a role in policy recommendations. The purpose of this analysis is to document the incidence of IMEs by worker group and presumption period and to examine the timing of the IME report filing.

Statutory requirements regarding IMEs are in Minnesota Statutes § 176.155, including the time periods during the claim when an insurer can request an IME.

Methodology

The workers' compensation claims database does not capture information about IMEs except to note that a document called an IME was filed and to record the date of the filing. The available data do not include the actual date of the IME examination. Some IMEs are not filed as separate documents and were not included in this analysis; they are submitted as attachments to other documents and are not otherwise recorded in the database.

The analysis of multiple IME reports is also hindered by the IME document type being used to label IME-related documents; follow-up remarks submitted by IME doctors responding to specific questions from other parties use the same label in the database as full IME reports. Gathering information about the incidence and timing of IMEs required searching the database for documents using the term "Independent Medical Examination" or abbreviation "IME" as their document type. The results of the search included other documents using these terms that were not IME reports. The most common document that was not an IME report was a document related to an extension for the IME report.

The resulting file was limited to claims from injury-years 2014 through 2022 because of the large drop-off in the number of IME documents for 2023 claims. Only documents with filing dates prior to July 1, 2024, were retained. In addition, the statistics below only involve the first IME report; data about the number of claims with multiple IMEs were not analyzed.

The claim identifiers were then matched into the IME document file to identify the IME documents related to claims in the mental injury claims database. For PTSD cases involving multiple claim filings, the IME records were moved to the primary case used for analysis. Claims with multiple IME documents were adjusted so that if an IME report document was filed, then only the record with the first IME report document was retained (with a flag used to identify IME reports with an extension filing). Claims with only documents referencing extensions, and no IME reports, were edited to retain only the first IME-related document for analysis.

The resulting data were then checked against the claim documents to verify the documents identified as IME reports were actually IME reports. Documents from at least three claims from each injury year, a total of 34 claims, were reviewed. One IME document was found to be an independent *vocational* examination, not a medical examination. A second set of 25 claims were reviewed to verify that IME documents were absent from PTSD claims with settlements that did not have already-identified IME documents. Between two and four claims from each injury year were reviewed and none of the claims had documents that appeared to be an IME.

Results

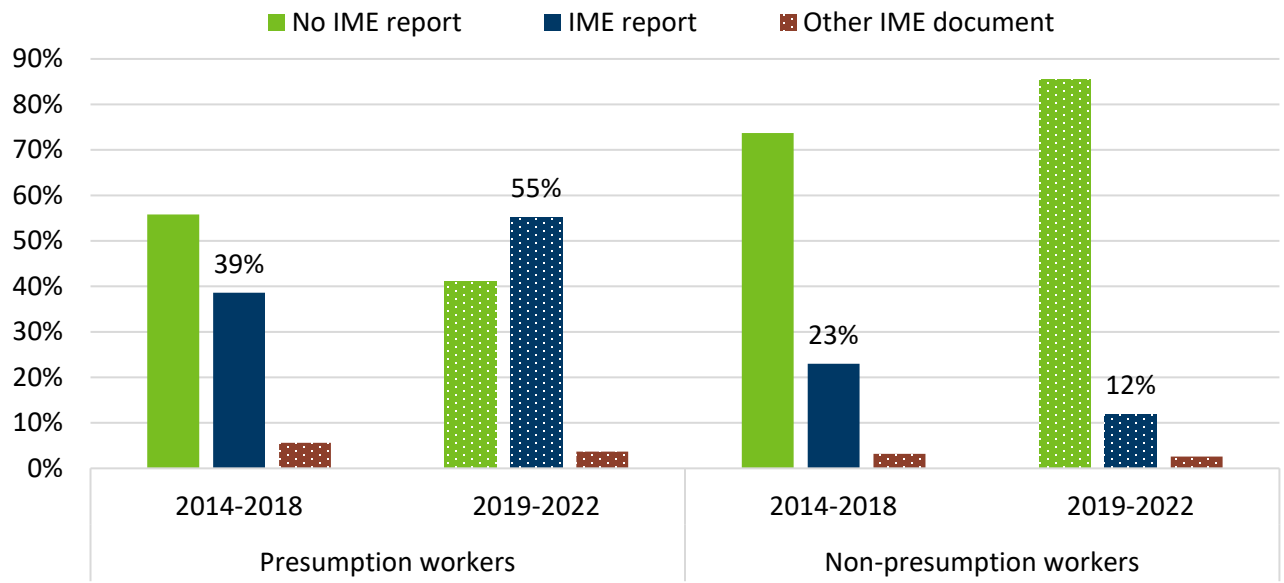
The IME search process resulted in identification of 680 claims for PTSD or another mental injury with an IME report and 64 claims with only a non-report IME document (Table C.1). PTSD claims accounted for 661 of the 680 IME report claims and for 61 of the 64 other IME document claims; only 2% of the claims for other mental injuries had an IME-related document. The remainder of the analysis, therefore, examined only PTSD claims.

Table C.1. Number of claims with independent medical examination documents by claim type, injury years 2014 to 2022

Claim type	No IME document	IME report	Other IME document only
PTSD	940	661	61
Other mental injury	932	19	3
Total	1,872	680	64

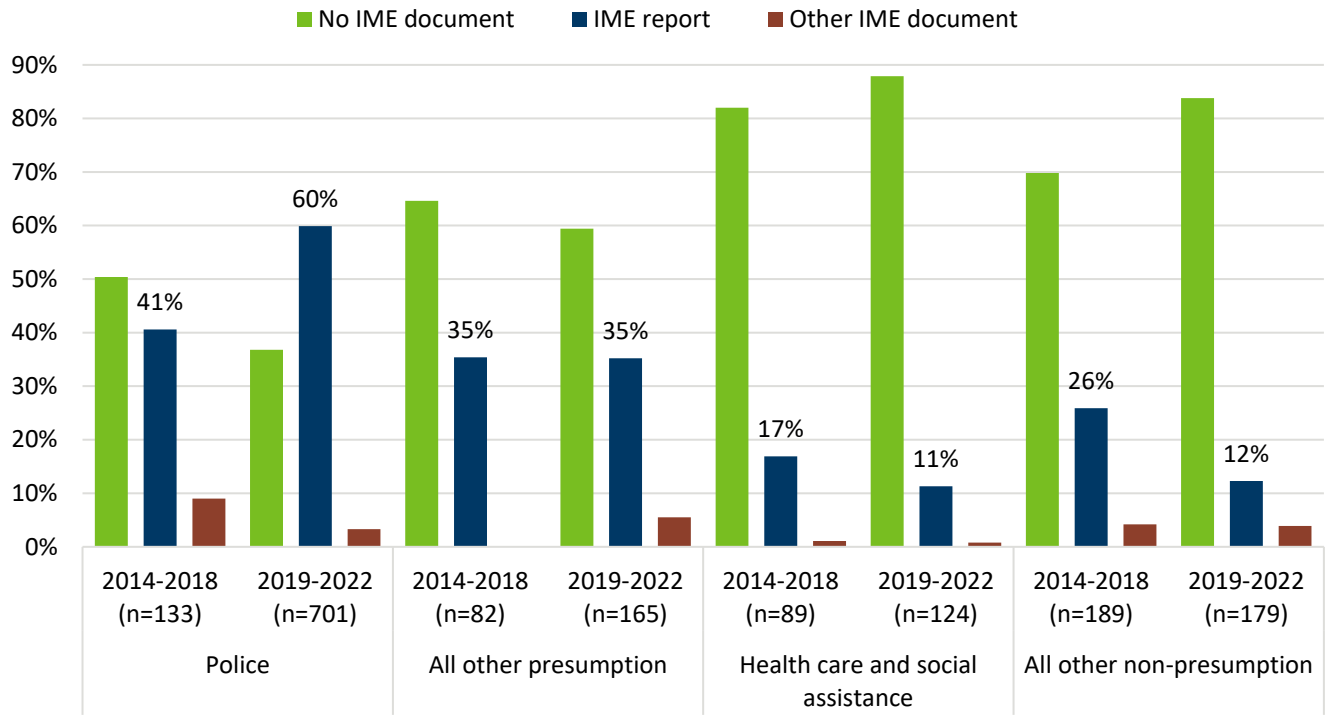
Within the PTSD claims, there were differences in IME filing by presumption occupation group and by timing before and after the presumption took effect (Figure C.1). A higher percentage of claims from workers in the presumption occupations had IME reports and the percentage increased after the presumption took effect. The number of IME reports filed for presumption occupation claims increased by 395 after 2018. For workers in the non-presumption occupations, the percentage of claims with an IME report decreased after 2018.

Figure C.1. Percentage of PTSD claims with IME documents by presumption group and time period



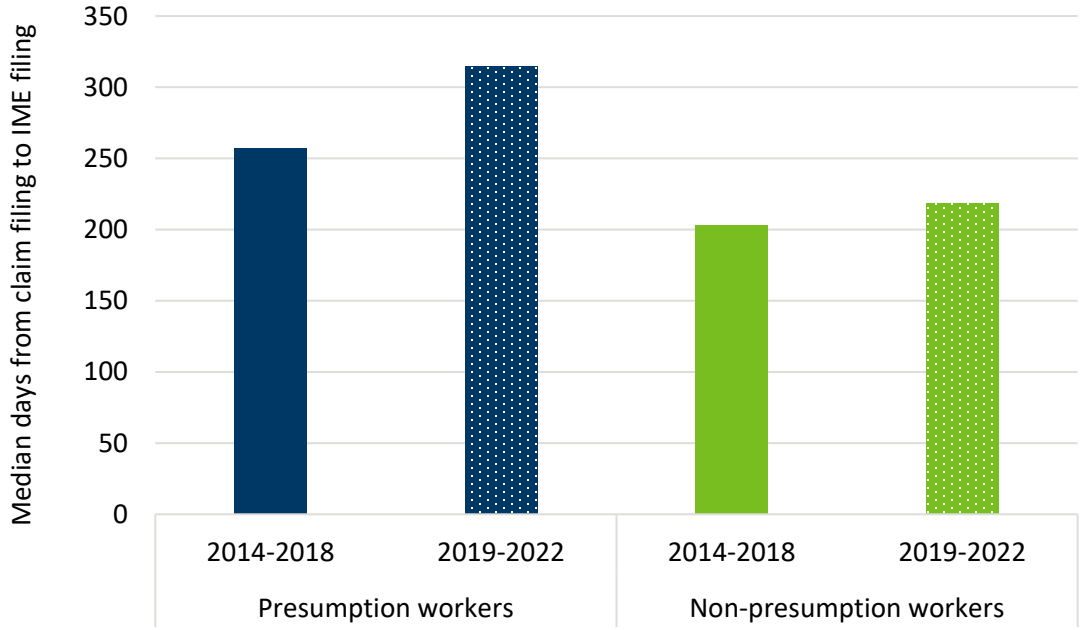
These presumption occupation effects were not consistent for all presumption occupation workers. As shown in Figure C.2, the IME filing increase was concentrated among police occupations, with no change in the percentage for other presumption workers.

Figure C.2. Percentage of PTSD claims with IME documents by occupation group and time period



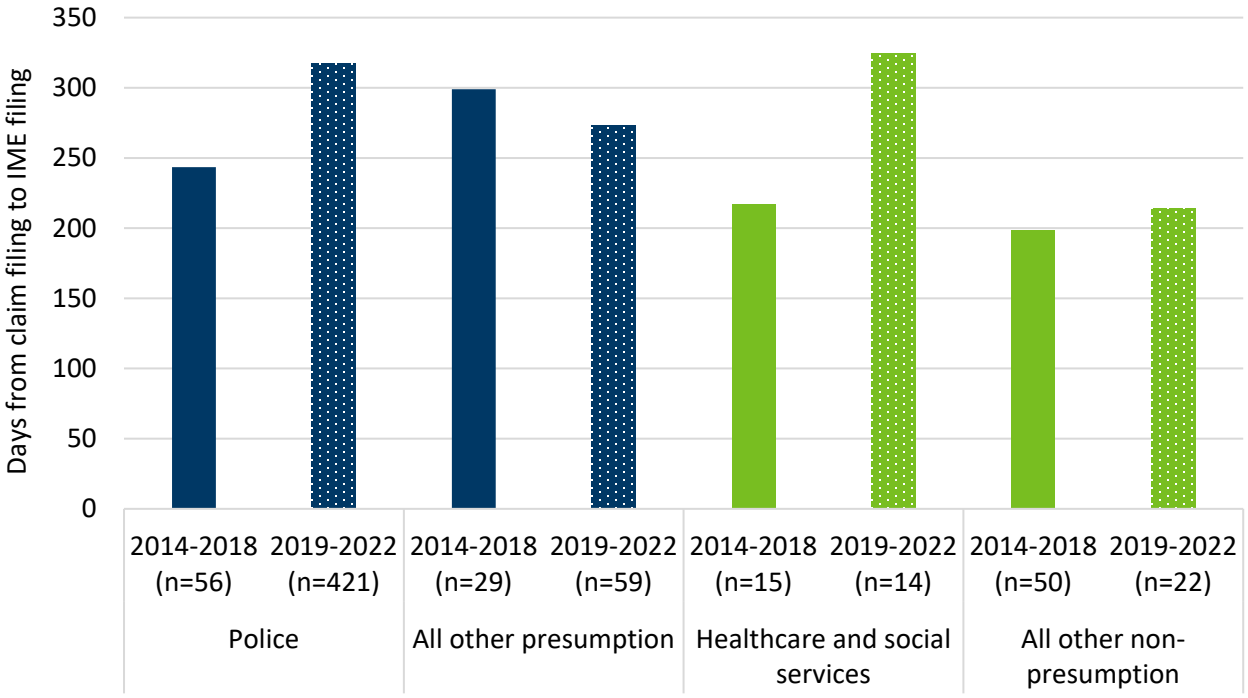
The number of days between the filing of the claim, whether by First Report of Injury or through a claim petition, and the filing of the IME report also shows differences by presumption group and time period (Figure C.3). For all PTSD claims, the median number of days from claim filing to IME filing was 294 days, almost 10 months. This duration was 54 days longer for presumption occupation workers than for other workers before the presumption took effect and it increased to 97 days after the presumption became effective.

Figure C.3. Days from claim filing to IME report filing for PTSD claims by presumption group and time period



These presumption group differences were not consistent for all presumption occupation worker groups; the median number of days increased by 74 days for police workers and decreased by 26 days for all other presumption workers (Figure C.4). Interestingly, the median number of days also increased substantially for health care and social services workers, from 217 days to 325 days.

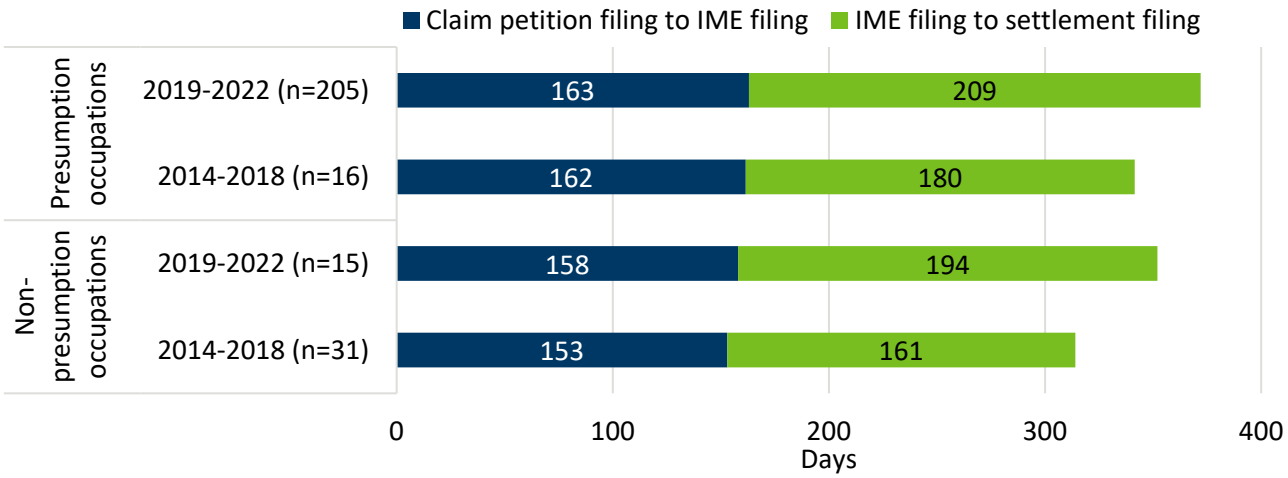
Figure C.4. Median days from claim filing to IME report filing for PTSD claims by occupation group and time period



Further insight into the timing of IMEs is obtained by including the timing from IME report filing to the filing of the settlement document. This analysis is limited to closed claims that followed a pattern of claim petition to IME to settlement, with the settlement being the only benefit payment. Figure C.5 shows the median number of days from claim petition filing to IME filing and then to settlement filing by presumption coverage and time period. The median number of days from the claim petition filing to the settlement filing remained within a range of 153 days to 163 days for the four analysis groups, but the days to the settlement showed a wider set of values. For both the presumption and non-presumption workers, the median duration from the IME filing to the settlement was a month longer after the presumption became effective.

As shown in Figure C.5, the IME filing serves as an approximate midpoint in the process from the claim petition to the settlement. The number of days from the claim petition to the IME filing is not logically related to the number of days from the IME to the settlement, so changes to the IME filing date should not compound. However, based on correlations with other duration measures, actions taken to decrease the duration from claim petition to the IME can reduce the time to reach a settlement and decrease total claim duration.

Figure C.5. Median days between claim petition filing, IME filing and settlement filing, closed claims paid only settlements



Appendix D. Survey Instrument

Workers' Compensation - Post-Traumatic Stress Disorder Survey - 2024

Throughout this survey, the following abbreviation will be used:

PTSD = Post-Traumatic Stress Disorder

The University of Minnesota and the Minnesota Department of Labor and Industry ("DLI") are conducting a study on PTSD in the Minnesota workers' compensation system. The information you provide in response to the survey will be used by the University of Minnesota and DLI as part of the PTSD study. Your participation is voluntary. The study will not report any responses that can be linked to a particular individual or organization.

At the end of the survey, you have the option to sign up to be considered for a follow-up interview with the University of Minnesota. Signing up for an interview is not required. Survey responses will be reviewed as part of the interview selection process. If you do not sign up for an interview, your survey responses will be analyzed without any identifying information.

This survey is administered through a secure survey system at the University of Minnesota. Please complete this survey only once. Contact PTSDstudy@umn.edu with any questions.

Please complete the survey. Click the "Next Page" button below to continue.

Thank you!

Start time _____

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

Information that identifies an injured worker is private data on individuals. Private data you choose to supply on this survey will be used by the University of Minnesota researchers and authorized DLI staff members working on the PTSD study. Private data may also be shared as required by law. For example, the data may be provided to the state or legislative auditor and upon court order.

This survey is voluntary; you are not required to participate and there are no consequences to you if you do not complete the survey. If you choose to complete the survey, your input may help identify potential changes to the workers' compensation system to improve the experience and outcomes of injured workers with work-related PTSD.

With which role(s), related to the workers' compensation system, do you identify?

- ☐ Employer
- ☐ Legal / Attorney
- ☐ Insurance / Insurer or Claims Administrator
- ☐ Worker advocate or Union
- ☐ Health Care Provider who provides care to people with PTSD
- ☐ Employee Benefits Organization / Retirement Organization
- ☐ Worker/Employee
- ☐ Other

Please specify 'other' role.

_____

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

What is your current employment status?

- ◯ Work full-time
- ◯ Work part-time
- ◯ Retired
- ◯ Unable to work due to PTSD
- ◯ Unable to work for any other reason
- ◯ Unemployed
- ◯ Other

Please specify 'other' employment status:

_____

Indicate which, if any, occupations you work or have worked.

Please select all that apply.

- ☐ Licensed Police Officer / Sheriff / Deputy Sheriff / Minnesota State Patrol
- ☐ Firefighter
- ☐ Paramedic / Emergency Medical Technician
- ☐ Public Safety Dispatcher
- ☐ Correctional Officer or Security Counselor
- ☐ Licensed nurse employed to provide emergency medical services outside of a medical facility
- ☐ Healthcare provider or support professional (in a medical facility)
- ☐ Teacher or Teaching Assistant
- ☐ Human Services or Social Worker
- ☐ Transit Worker
- ☐ Other

Please specify 'other' occupation(s):

_____

How long have/did you work as a Licensed Police Officer / Sheriff / Deputy Sheriff / Minnesota State Patrol?

- ◯ Less than one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 10-15 years
- ◯ 15 or more years

How long have/did you work as a Firefighter?

- ◯ Less than one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 10-15 years
- ◯ 15 or more years

How long have/did you work as a Paramedic / Emergency Medical Technician?

- ◯ Less than one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 10-15 years
- ◯ 15 or more years

How long have/did you work as a Licensed nurse employed to provide emergency medical services outside of a medical facility?

- ◯ Less than one year
- ◯ 1-5 years
- ◯ 6-10 years
- ◯ 10-15 years
- ◯ 15 or more years

How long have/did you work as a Public Safety Dispatcher?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
How long have/did you work as a Correctional Officer or Security Counselor?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
How long have/did you work as a Transit Worker?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
How long have/did you work as a Teacher or Teaching Assistant?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
How long have/did you work as a Human Services or Social Worker?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
How long have/did you work as a Healthcare provider or support professional (in a medical facility)	☐ Less than one year ☐ 1-5 years ☐ 6-10 years ☐ 10-15 years ☐ 15 or more years
For how long have/did you work in an 'OTHER' occupation?	◯ Less than one year ◯ 1-5 years ◯ 6-10 years ◯ 10-15 years ◯ 15 or more years
To ensure a human, and not a robot, is completing this survey, please select all pictures of dogs below:	

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

Which of the following resources does your employer/organization provide?

Please mark all that apply.

- ☐ Mental health wellness training/activities
- ☐ Employee assistance program
- ☐ Treatment/counseling for PTSD
- ☐ Benefits for PTSD
- ☐ Screening for PTSD
- ☐ Critical Incidence Stress Management
- ☐ Peer support program
- ☐ Other
- ☐ Unknown
- ☐ NONE OF THE ABOVE

Please specify 'other resources' your employer/company provides for prevention/treatment of PTSD: _____

Does your agency/organization manage workers' compensation claims data on its own?

- ◯ Yes
- ◯ No

Consider your experience with the workers' compensation claims process as it applies to mental injuries.

Please review the list of steps in the process and select any steps which you feel are difficult to understand and/or may cause barriers to the effective implementation of the claims process.

- ☐ Recognizing that there was a mental injury
- ☐ Recognizing that the injury was work-related
- ☐ Worker reporting the injury to the employer
- ☐ Employer reporting the injury to the insurer
- ☐ Self-Insured Employer/Insurer reporting the injury to the Department of Labor and Industry (DLI)
- ☐ Employer/Insurer providing a Notice of Primary Liability Determination to the Worker within 14 days
- ☐ Injured Worker finding an eligible provider to evaluate/diagnose the mental injury
- ☐ Timing of PTSD diagnosis received from an eligible provider
- ☐ Injured Worker finding a provider to provide eligible evidence-based psychotherapy treatments
- ☐ Accepting a claim \ Obtaining claim acceptance
- ☐ Provision of benefits- treatment costs coverage
- ☐ Provision of benefits- paid time off from work
- ☐ Provision for permanent benefits
- ☐ Return to work considerations (i.e., accommodations, training, fitness for duty)
- ☐ Other
- ☐ NONE OF THE ABOVE

Please specify 'other': _____

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

Minnesota State Statute, §176.011, Subd. 15 (e), identifies the following occupations in the "rebuttable presumption" category, meaning a PTSD diagnosis is assumed to be work-related.

Please review the rebuttable presumption, Minn. Stat. §176.011, Subd. 15 (e):

"If, preceding the date of disablement or death, an employee who was employed on active duty as:

- **a licensed police officer;**
- **a firefighter;**
- **a paramedic;**
- **an emergency medical technician;**
- **a licensed nurse employed to provide emergency medical services outside of a medical facility;**
- **a public safety dispatcher; a correctional officer or security counselor employed by the state or a political subdivision at a corrections, detention, or secure treatment facility;**
- **a sheriff or full-time deputy sheriff of any county;**
- **or a member of the Minnesota State Patrol**

is diagnosed with a mental impairment as defined in paragraph (d), and had not been diagnosed with the mental impairment previously, then the mental impairment is presumptively an occupational disease and shall be presumed to have been due to the nature of employment."

The list of occupations in the statute (above) encompasses all workers who may be at greater risk for developing work-related PTSD.	◯ Strongly disagree ◯ Disagree ◯ Neutral ◯ Agree ◯ Strongly agree
Are there other occupations that encompass workers who may be at risk for developing work-related PTSD?	◯ Yes ◯ No

Please specify 'other' occupations:

_____

My occupation puts me at risk for developing work-related PTSD.	◯ Strongly disagree ◯ Disagree ◯ Neutral ◯ Agree ◯ Strongly agree

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

Please review the workers' compensation definition of PTSD, Minn. Stat. § 176.011, subd. 15 (d):

"For the purposes of this chapter, 'mental impairment' means a diagnosis of post-traumatic stress disorder by a licensed psychiatrist or psychologist.

For the purposes of this chapter, 'post-traumatic stress disorder' means the condition as described in the most recently published edition of the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric Association.

This definition accurately describes PTSD-related mental injuries that occur in the workplace.	◯ Strongly disagree ◯ Disagree ◯ Neutral ◯ Agree ◯ Strongly agree
The statute in Minnesota requires a PTSD diagnosis from a licensed psychiatrist or psychologist. This requirement should be:	◯ Left unchanged ◯ Expanded to any Masters-level clinicians who are licensed to perform diagnostic assessments using the DSM-5/DSM-5-TR (i.e., LICSW, LMFT, LPCC) ◯ Restricted further ◯ Unsure
In your opinion, which should be removed?	◯ Psychiatrists ◯ Psychiatric Nurse Practitioners ◯ Psychologists
Minnesota statute requires clinicians to diagnose PTSD using the most recently published edition of the DSM-5/DSM-5-TR. Which of the following statements most accurately reflects your opinion:	◯ The state workers' compensation system should continue to use the DSM-5/DSM-5-TR alone to diagnose work-related PTSD. ◯ The state should consider expanding the statute to include the ICD-10/ICD-11, which contains criteria for both PTSD and Complex PTSD. ◯ Unsure

Below is the list of eligible treatments included in the treatment parameters for work-related PTSD in the workers' compensation system:

- Cognitive behavioral therapy

- Cognitive processing therapy

- Cognitive therapy

- Prolonged exposure therapy

- Brief eclectic psychotherapy

- Eye-movement desensitization and reprocessing (EMDR)

- Narrative exposure therapy With prior notice (see below), another evidenced-based, trauma-focused psychotherapy treatment modality:

- Selective serotonin reuptake inhibitors (SSRIs)

- Selective norepinephrine reuptake inhibitors (SNRIs)

- Antihypertensive medications (e.g., Prazosin)

- Serotonin antagonist and reuptake inhibitors (SARIs)

- Other medications if prescribed or recommended by a licensed psychiatrist, a psychiatric mental health advanced practice registered nurse (PMH-APRN) or another health care provider after consultation with a psychiatrist or PMH-APRN

Which of the following statements most accurately represents your professional opinion about this list (above)?	◯ The list is inclusive of all effective treatments for PTSD and should remain UNCHANGED ◯ One or more of the treatment modalities listed should be REMOVED from the list ◯ One or more treatment modalities should be ADDED to the list
Which should be removed?	☐ Cognitive behavioral therapy ☐ Cognitive processing therapy ☐ Cognitive therapy ☐ Prolonged exposure therapy ☐ Brief eclectic psychotherapy ☐ Eye-movement desensitization and reprocessing (EMDR) ☐ Narrative exposure therapy ☐ Motivational interviewing ☐ Selective serotonin reuptake inhibitors (SSRIs) ☐ Selective norepinephrine reuptake inhibitors (SNRIs) ☐ Antihypertensive medications (e.g., Prazosin)
To ensure a human, and not a robot, is completing this survey, please select the letter "P":	◯ G ◯ S ◯ P ◯ T ◯ M
What is the highest level of clinical education and licensure you have attained?	◯ Medical Doctor (i.e., Psychiatrist) ◯ Doctoral (i.e., Psychologist) ◯ Nurse Practitioner (i.e., Psychiatric Nurse Practitioner) ◯ Master's (i.e., Marriage and Family Therapist, Clinical Social Worker, Clinical Counselor) ◯ Bachelor's (i.e., Alcohol and Drug Counselor)
Have you ever suffered from a work-related PTSD injury?	◯ No ◯ Yes ◯ Unsure

Which of the following best describes your actions related to the work-related PTSD injury?

- ◯ I never reported my PTSD injury to my employer, nor received treatment for it.
- ◯ I reported my PTSD injury to my employer, but never received treatment for it.
- ◯ I never reported my PTSD injury to my employer, but received treatment for it on my own.
- ◯ I reported my PTSD injury to my employer and received treatment for it.

Which, if any, of the following influenced your decision not to report the work-related PTSD injury to your employer?

Please mark all that apply.

- ☐ I was unsure whether my PTSD injury was work-related.
- ☐ I was unaware that work-related PTSD is eligible for workers' compensation benefits in MN.
- ☐ I did not want to report the injury to my employer for personal reasons.
- ☐ I was afraid to report the injury to my employer.
- ☐ I didn't know how to navigate the workers' compensation system for a psychiatric injury.
- ☐ I was discouraged from reporting the injury by someone from work.
- ☐ I was discouraged from reporting the injury by someone else.
- ☐ Other

Please specify 'other' influence:

_____

Which, if any, of the following influenced your decision to report the work-related PTSD injury to your employer?

Please mark all that apply.

- ☐ I was certain my PTSD injury was work-related.
- ☐ I was aware that work-related PTSD is eligible for workers' compensation benefits in MN.
- ☐ I wanted to report the injury to my employer.
- ☐ I was not afraid to report the injury to my employer.
- ☐ I knew how to navigate the workers' compensation system for a mental injury, or someone assisted me with it.
- ☐ I was encouraged to report the injury by someone from work.
- ☐ I was encouraged to report the injury by someone else (i.e., spouse, attorney, healthcare provider).

Which of the following influenced your decision not to receive treatment for your work-related PTSD injury?

Please mark all that apply.

- ☐ I didn't know how to access treatment for PTSD.
- ☐ I couldn't afford treatment.
- ☐ I couldn't find a provider who accepted my preferred method of payment (e.g., insurance, out-of-pocket, workers' compensation).
- ☐ I couldn't find a provider who offered the type of therapy I was looking for.
- ☐ I couldn't find a provider with availability.
- ☐ I couldn't find a provider who could understand me.
- ☐ I couldn't get time off from work to attend therapy.
- ☐ Other

Please specify 'other' influence:

_____

Which of the following treatments have you received for your work-related PTSD injury:

Please mark all that apply.

- ☐ Cognitive behavioral therapy (CBT)
- ☐ Cognitive processing therapy (CPT)
- ☐ Cognitive therapy
- ☐ Prolonged exposure therapy
- ☐ Brief eclectic psychotherapy
- ☐ Eye-movement desensitization and reprocessing (EMDR)
- ☐ Narrative exposure therapy
- ☐ Motivational interviewing
- ☐ Selective serotonin reuptake inhibitors (SSRIs)
- ☐ Selective norepinephrine reuptake inhibitors (SNRIs)
- ☐ Antihypertensive medications (e.g, Prazosin)
- ☐ Other
- ☐ Unsure
- ☐ NONE OF THESE

Please specify 'other' type of PTSD treatment you have received:

_____

What was the ultimate outcome of your PTSD injury?

- ◯ I continued working without a loss of time at work.
- ◯ I took a temporary leave of absence because of my PTSD injury but was able to return to work after.
- ◯ I took a leave of absence but plan to return to work in my same position.
- ◯ I took a leave of absence and plan to change positions when I return to work.
- ◯ I retired from my position with a PTSD disability.
- ◯ I left work for reasons unrelated to the PTSD injury (i.e., changed jobs, retired, returned to school).
- ◯ Other

Of the following, which do you think best promote higher return-to-work rates for workers with work-related PTSD?

Select up to 4 responses.

- ☐ Conducting PTSD detection/screening for early detection
- ☐ Providing workers with training and education about PTSD and mental health resources
- ☐ Providing workers with training and education about the workers' compensation system as it applies to mental injuries
- ☐ Having clear policies and processes for reporting a mental injury and filing a workers' compensation claim
- ☐ Providing paid leave
- ☐ Paying for treatments
- ☐ Communicating with workers while they are on leave for a PTSD injury
- ☐ Providing support to recovered workers who are ready to return to work
- ☐ Other

Of the following considerations, which do you think are the most important in improving the chances of workers with work-related PTSD returning to work?

Select up to 4 responses.

- ☐ Timely detection of PTSD
- ☐ Employer-based training and education about PTSD and mental health resources
- ☐ Timely intervention
- ☐ Effective treatment of PTSD
- ☐ Effective treatment of comorbidities
- ☐ Clinician's cultural competence
- ☐ Clinician's proficiency in evidence-based treatments
- ☐ Employee receiving paid leave from work
- ☐ Other

If workers with accepted work-related PTSD claims receive effective treatment and have the proper support, what percentage would be able to return to work?

- ◯ 0%
- ◯ 1-25%
- ◯ 26-50%
- ◯ 51-75%
- ◯ 76% or higher

Have you ever worked with injured workers who had an active claim for a PTSD injury in the workers' compensation system?

- ◯ No
- ◯ Yes
- ◯ Unsure

What aspects, if any, were challenging about working within the workers' compensation system compared to working with patients/clients suffering from PTSD who are outside the system (not work related)?

Please mark all that apply.

- ☐ Evaluation and diagnostic assessment
- ☐ Treatment planning
- ☐ Work-specific requirements (i.e., workability or fitness for duty evaluation, interpreting job descriptions)
- ☐ Disability determinations
- ☐ Case documentation
- ☐ Confidentiality
- ☐ Payment
- ☐ Legal considerations (i.e., responding to subpoenas, legal fluency)
- ☐ Other

Do you have a return to work program for individuals with work-related PTSD?

- ◯ No
- ◯ Yes
- ◯ Unsure

How effective is this program?

- ◯ Excellent
- ◯ Very good
- ◯ Good
- ◯ Fair
- ◯ Poor

Is there anything you would like to add about the PTSD workers' compensation claims process that was not asked in this survey?

_____

To navigate this survey, please do not use the browser arrows.
Use only the "PREVIOUS PAGE" and "NEXT PAGE" buttons on the bottom.

The next questions capture some demographic information that will be used to describe who responded overall to the survey.

What age group are you in?

- ◯ 18-20
- ◯ 21-30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 61-70
- ◯ 71 and above

What race are you?

Please mark all that apply.

- ☐ American Indian or Alaskan Native
- ☐ Asian or Asian American
- ☐ Black, African, or African American
- ☐ Native Hawaiian or other Pacific Islander
- ☐ White
- ☐ Other
- ☐ Unknown

What is your ethnic background?

- ◯ Hispanic/Latinx
- ◯ Non-Hispanic/Latinx

What is your gender?

- ◯ Woman
- ◯ Man
- ◯ Transgender
- ◯ Gender non-conforming
- ◯ Other

Please specify gender:

_____

THANK YOU FOR COMPLETING THIS SURVEY.

The University of Minnesota study team would like to interview a few people to obtain a more robust understanding of experiences with the workers' compensation system as it relates to PTSD claims.

An interview would take 30-60 minutes via Zoom and would be scheduled at your convenience.

Might you be interested in participating in an interview?

◯ Yes
◯ No

Thank you again for your time.

If you selected 'yes' above, indicating interest in participating in an interview, you will be directed to a new survey to provide your contact information.

Please click the 'Submit' button below to record your responses

---

Stop time

_____

Appendix E. Interview and Panel Discussion Protocol

WC PTSD Study Interview Guide[25]

The moderator will review the following at the beginning of each interview[26]:

1) ***Introductions***
   Hello, my name is [_____], and I am with the University of Minnesota.
2) ***Thank participant/Purpose***
   Thank you for taking the time to speak with me regarding the Minnesota Workers' Compensation process for Post-Traumatic Stress Disorder (PTSD) claims.
   We want to make sure we understand the process for these claims. There are no right or wrong answers, please share your honest thoughts and opinions. Everything said here is kept confidential.
3) ***Time commitment***
   This interview may take about 45-60 minutes of your time.
4) ***Review confidentiality and privacy***
   As a reminder, we will be audio recording this session. If you want or need to stop the interview at any point, you may do that. We may follow-up with you to check-in but that's it.
   Do you have any questions before we begin?

** Italicized text is for reference/instruction only.*

GOAL: Obtain information to address what questions/responses from the survey that we didn't understand. Get at the how and why - what the process is like. What is it that makes this process [so difficult]? Open/generic questions. More unstructured. Lead each section with phrase that links to goal, then ask what is important to understand.

Interview Questions:

Info about participant / Gentle start

GOAL: **We want to know a little about you.**

To start, please briefly describe your job/role (not where you work).

PROBE: What do you do for a living?

[25] PTSD: National Center for PTSD, U.S. Department of Veterans Affairs. PTSD and DSM-5 - PTSD: National Center for PTSD; accessed 4/18/2025.
[26] American Psychiatric Association. (2022). *Diagnostic and statistical manual of mental disorders* (5th ed, text rev.) https://doi.org/10.1176/appi.books.9780890425787

WC process for PTSD as a work-related condition
Overall system evaluation and improvements[27]

GOAL: **We want to know about the workers' compensation claims process for PTSD as a work-related condition.**

What is important for us to understand about how this process works?

PROBE: Do you have an example to share?
PROBE: What part of the process goes well? What does not go well?
PROBE: How do workers learn about the process? Their rights?

What is important for us to understand about the process for denials?

PROBE: How do claim denials fit into the process?
PROBE: What challenges do workers face while trying to address the denial of a claim?
PROBE: What factors influence a workers' decision to dispute a denial? Role of union? Attorneys?
PROBE: A workers' understanding of their rights?

What is important for us to understand about the process for settlements?

PROBE: How do claim settlements fit into the process?
PROBE: What challenges do workers face while trying to address the settlement of a claim?
PROBE: What factors influence a workers' decision to settle a claim? Role of union? Attorneys?
PROBE: How could these processes be improved?

Screening and mental health resources
PTSD diagnosis and access to care

GOAL: **We want to know more about the resources and care available for workers with work-related PTSD.**

What is important for us to understand about available resources and access to care?

PROBE: How do employees find out about these resources?
PROBE: Eligibility criteria? Limitations?
PROBE: How often? Frequency?

What is important for us to understand about the process of getting diagnosed with work-related PTSD?

PROBE: Facilitators? What factors help in this process? Why/how?
PROBE: Barriers? What factors are challenging in this process? Why/how?

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[27] National Library of Medicine at the National Institutes of Health. Exhibit 1.3-4, DSM-5 Diagnostic Criteria for PTSD - Trauma-Informed Care in Behavioral Health Services - NCBI Bookshelf; accessed 4/17/2025.

Return-to-work

GOAL: **We want to know more about factors that influence workers returning to work.**

What is important for us to understand about workers with work-related PTSD returning to work?

PROBE: What factors encourage/support return-to-work? Why/how?
PROBE: What factors discourage/prevent return-to-work? Why/how?

Rebuttable presumption policies

GOAL: **We want to know more about the impact of rebuttable presumption policies.**

Currently, Minnesota has something called a rebuttable presumption related to work-related PTSD. It establishes that there are specific occupations where employees diagnosed with PTSD are assumed to have it stem from their employment.

What is important for us to understand about how this presumption affects workers?

PROBE: How should the state decide which occupations are covered by the rebuttable presumption law?
PROBE: Why should an occupation be covered by the rebuttable presumption law?

Data and Evaluation

Is there anything you would like to add (regarding work-related PTSD and/or the WC system)?

PROBE: How could this process be improved?
PROBE: What could be done to improve workers' understanding of knowledge regarding their rights about filing a work-related PTSD claim? During the process? Sources.
PROBE: What kinds of information or feedback would help evaluate the WC claims system's performance more effectively?
PROBE: How do you think data could be used to improve the claims process?

Closing and Thanks

Thank you for taking the time to help us better understand this claims system and how it may be improved.

Study information and updates can be found on the MN DLI website: https://www.dli.mn.gov/business/workers-compensation/post-traumatic-stress-disorder-study#:~:text=The%20law%20included%20a%20requirement,traumatic%20stress%20disorder%20(PTSD).

Appendix F. PTSD Treatment Literature Review

Table F.1. Studies Included in the PTSD Treatment Literature Review

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Albuquerque (2022)	To analyze the available evidence on the effect of ketamine in the treatment of post-traumatic stress.	Meta-analysis	14	Ketamine was administered intravenously as a bolus (two trials) or fractional infusion (twenty trials) with a treatment time interval of two weeks. One experimental study had sublingual administration.	Midazolam; Saline; or None	Ketamine significantly reduced PTSD symptoms compared to controls.
Anderson (2020)	To investigate the effectiveness of organizational peer support and crisis-focused psychological interventions intended to mitigate post-traumatic stress injuries (PTSIs) among public safety personnel (PSP), frontline healthcare personnel (FHP) and other relevant groups at risk of occupational potentially psychologically traumatic events (PPTE) exposure.	Systematic review	14	Peer support, Spousal or family support, Psychological first aid, Mental health first aid, Pastoral crisis intervention, Critical incident stress management or CISM, Critical incident stress debriefing or CISD, Crisis management debriefing, Debriefing, Defusing, Family CISM, Post-traumatic stress management, Couples overcoming PTSD everyday (COPE), OSI Canada family program	Stress management education or screening only; waitlist; group with no intervention; none	Some administrations of the diverse programs often synonymously referred to as CISD may be beneficial, but the evidence remains insufficient. While there was a diverse group of programs developing peer support, there is very preliminary evidence supporting peer support as associated with at least short-term favorable results.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Bahji (2022)	To conduct a systematic review and meta-analysis of the effectiveness and acceptability of psychotherapies for PTSIs among PSPs.	Meta-analysis	8	Narrative exposure therapy (1), cognitive behavioral therapy (2), eclectic psychotherapy (2), eye-movement desensitization and reprocessing, supportive counseling (2), and group critical incident stress debriefing (1).	Waitlist; psychoeducation only; none	The results supported the effectiveness of narrative exposure therapy, cognitive behavioral therapy, eclectic psychotherapy, eye movement desensitization and reprocessing, and trauma processing therapy for PSPs experiencing PTSD, depression, or anxiety symptoms (total SMD = -1.20 [-.75, -0.65]).
Bahji (2020)	To assess the effectiveness and safety of MDMA-assisted psychotherapy for reducing symptoms of PTSD.	Meta-analysis	5	MDMA-assisted psychotherapy	The use of different pharmacotherapies, placebo or no pharmacotherapy (supportive care).	MDMA-assisted psychotherapy achieved greater clinical response (72% v. 19% in control group) and greater reduction in PTSD symptoms (SMD = 1.24 [0.61, 1.86]). The review demonstrates with moderate quality evidence that MDMA-assisted psychotherapy has the potential to be an effective, durable, and generally safe intervention for patients with chronic, treatment-refractory PTSD.
Baker (2018)	To assess the efficacy of creative art therapies including music therapy, art therapy, dance/movement	Systematic review	7	Music therapy, art therapy, drama therapy	Waitlist; no treatment; drawing neutral object (vs. mandala drawing)	There was either a low or very low quality of evidence supporting the use of the creative arts therapies in the treatment of PTSD

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
	therapy, and drama therapy, in the treatment of PTSD.					
Balkin (2021)	Estimate the degree of effectiveness associated with EMDR as a treatment for symptoms associated with regulatory over-arousal such as those represented by anxiety-based disorders.	Meta-analysis	32 effect sizes in 22 articles	EMDR	Alternative viable treatments (the specifics of which were not described)	On average, EMDR appears to be beneficial for reducing PTSD symptoms (M ES = -.83); however, the precision of this estimate ranged substantially suggesting that the true effect ranged from large to small, and some analyses favored alternative therapy by as much as g=.66. EMDR findings may not be replicable.
Barrera (2013)	To conduct a systematic review of the empirical support for Group-based CBT(GCBT) in the treatment of PTSD and to compare GCBT protocols that encourage the disclosure of trauma details via in-session exposure to GCBT protocols that do not include in-session exposure.	Meta-analysis	12	group cognitive behavioral therapy (GCBT)	Waitlist; applied muscle relaxation; acupuncture; none	GCBT is an effective intervention for individuals with PTSD (Mean ES = 1.13), yet may produce less substantial treatment gains than those observed with individual treatment formats.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Belsher (2021)	(a) Synthesize existing literature on the efficacy of repetitive transcranial magnetic stimulation (rTMS) for PTSD and secondary outcomes; (b) Apply recognized standards to evaluate the quality of the evidence; (c) and Investigate whether high frequency (HF) or low frequency (LF) rTMS is more efficacious.	Systematic review	13	rTMS	sham	Pooled results from seven studies that implemented rTMS without a specific treatment augmentation indicated that rTMS for PTSD was associated with improved PTSD and depression outcomes compared to sham (SMD = -1.13). The quality of this evidence, however, was rated as very low due to small samples sizes, treatment heterogeneity, inconsistent results, and an imprecise pooled effect that included wide 95% confidence intervals.
Billings (2023)	Systematically review the evidence for all types of brief post incident psychosocial interventions offered within one month of a traumatic incident in the workplace, and to compare the content, effectiveness and acceptability of these interventions.	Systematic review	80 empirical research studies in the final review. 11 guidelines included in this review.	Rest information transition services (RITS), CISD, Defusing, Individual Crisis intervention, Psychological first aid, Debriefing, Screening during employment, Peer support, Demobilisation, CISM, Traumatic incident management programme, Demobilisation, 1-to-1 support and follow ups, Referral when needed, TF-CBT, TRiM, EMDR (beyond 4 weeks), Critical Incident First Aid (CIFA) which is Psychological First Aid (PFA) that has been adapted	Few studies included control groups. 6 out of 80 studies had control group.	Most research focused on CISD, CISM or generic Debriefing interventions. A small body of literature focused on TRiM, PFA, EMDR and CBT based interventions. Overall, the quality of most evidence was weak, with notable limitations in the research conducted to date making it very difficult to ascertain whether these interventions are any more effective than natural recovery after trauma which might be expected over time.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Bisson (2013)	To assess the effects of psychological therapies for the treatment of adults with chronic PTSD.	Meta-analysis	70	TFCBT, EMDR, non-TF CBT, other psychotherapy	Waitlist, TAU, symptom monitoring, repeated assessment, or minimal attention control group; alternative psychological treatment	Individual TFCBT and EMDR were more effective than waitlist/usual care. No differences between TFCBT, EMDR, and stress management at post-treatment, but TFCBT, EMDR, and non-TF CBT were more effective than other therapies. There was greater dropout in the active treatment groups. Evidence was assessed as very low quality, with small samples underpowered to detect an effect.
Black (2019)	To examine evidence for all types of medicinal cannabinoids and all study designs (controlled and observational) to determine: 1. The impact of medicinal cannabinoids on: a. Primary outcomes including remission from and symptoms of depression, anxiety, PTSD, and psychosis; and symptoms of attention-deficit hyperactivity disorder (ADHD) and	Meta-analysis	83 (12 for PTSD, including 1 RCT)	Medicinal cannabinoids	Any comparator (i.e., placebo, waitlist controls, and other interventions).	One small RCT demonstrated that cannabinoids were associated with improved global functioning and nightmare frequency, but no effect on sleep quality. There were two open-label and two prospective cohort studies where PTSD was the primary outcome; three studies involved cannabis and one, THC extract. Three studies found reductions in PTSD symptoms and one found that PTSD symptoms worsened with cannabis use in people with PTSD and comorbid mental health disorder.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
	Tic/Tourette syndrome; either as the primary disorder or secondary to other disorders; b. Secondary outcomes including global functioning, quality of life, patient or caregiver impression of change; and 2. The safety of medicinal cannabinoids for mental health, including all-cause, serious and treatment-related adverse events and study withdrawals.					
Bonfils (2022)	To synthesize existing work on functional outcomes of psychotherapy to conduct a meta-analytic investigation examining whether people with PTSD experience significant improvements in functioning and quality of life following a course of psychotherapy	Meta-analysis	55 studies (with 56 independent samples)	Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), other cognitive or cognitive-behavioral therapies (including trauma-focused CBT and mindfulness-oriented interventions), Narrative Enhancement Therapy (NET), Eye Movement Desensitization and Reprocessing (EMDR), Present-Centered Therapy (PCT), and skills or coping-oriented therapies (skills/coping).	Waitlist, treatment as usual, active psychotherapy conditions	Psychotherapy delivered to people with PTSD is effective for improving functional or QoL outcomes to a moderate degree

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
				Modifications of target therapies (e.g., PE plus virtual reality)		
Borgogna (2024)	Evaluate preliminary evidence for ketamine's incremental benefit above-and-beyond control interventions in PTSD treatment.	Meta-analysis	6	Ketamine 0.5mg/kg	Saline	Small effect for ketamine over control conditions at reducing PTSD symptoms
Brooks (2021)	Determine how the potential presence of suicidality among study participants impacts the observed treatment effects	Meta-analysis	48	Interventions included cognitive therapy (CT), PE, narrative exposure therapy (NET), Eye Movement Desensitization and Reprocessing (EMDR), CBT, and Brief Eclectic Therapy (BEP).	The comparison conditions consisted of waitlist control (WL), usual care, treatment as usual (TAU), or no intervention.	Effects observed in clinical trials are not significantly impacted by suicidal ideation-related exclusion criteria.
Carl (2019)	Re-examine the efficacy of virtual reality exposure therapy (VRET) for anxiety.	Meta-analysis	30 (5 PTSD)	VRET	Waitlist control (WL), usual care, treatment as usual (TAU)	VRET is an effective and equal medium for exposure therapy. The pooled effect size for 5 studies comparing VRET to psychological placebo or waitlist conditions for PTSD yielded a medium effect size for VRET.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Carpenter (2018)	To update the analysis by Hofmann and Smits (2008) with data from randomized placebo-controlled trials of CBT for anxiety related disorders published since 2008.	Meta-analysis	41 (14 PTSD)	CBT	placebo psychotherapy intervention	CBT is associated with significantly greater benefit for anxiety-related disorders than placebo conditions (including PTSD), and that the superior effects of CBT extend beyond symptoms of the disorder being treated. Effect sizes smaller for group v. individual therapy. Greater dropout rates among CBT patients in PTSD studies.
Casement (2012)	Evaluate the efficacy of imagery rehearsal as a treatment for nightmares, general sleep disturbance, and symptoms of post-traumatic stress	Meta-analysis	13	imagery rehearsal therapy	Only one study included an active control condition	Imagery rehearsal improves sleep, nightmare frequency, and reduces PTSD symptoms to a large extent across a diverse range of samples and treatment protocols
Davis (2021)	Systematically review and summarize the state of the field on a heterogenous and inclusive range of physical interventions for trauma and stressor-related disorders delivered across populations of trauma exposed adults	Systematic review	44	Physical interventions: practices that galvanize the body into action. Action was understood to include large muscle group engagement such as in aerobic, resistance, or stretching activities. Additionally, physical interventions were understood to include a significant learning component leading to the	Waitlist, TAU, meditation, assessment, no control group (pre- post- design)	Preliminary data suggest that physical interventions may be beneficial for reducing post-traumatic stress symptoms; however, the methodological quality of most studies was weak to moderate, with only 5 RCTs and one study that met all 5 criteria needed for rigorous designs.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
				development of new action repertoires.		
Dinnen (2015)	To systematically review reports of psychological treatment for trauma-related symptoms and PTSD in later life.	Systematic review	20	Psychotherapy, which included a variety of interventions including EMDR, PE, CBT, imaginal exposure, life review, brief eclectic psychotherapy, supportive group therapy	Waitlist, TAU, no comparison (case studies and pre- post- designs)	There is a lack of well-designed studies examining efficacy of PTSD treatments in older adults. Select evidence-based interventions validated in younger and middle-aged populations appear acceptable and efficacious with older adults.
Etherton (2022)	To conduct a meta-analysis examining behavioral activation (BA) for PTSD.	Meta-analysis	8	behavioral activation	Three studies incorporated a waitlist control group (all of which involved random assignment); one compared to CPT (active treatment) and one compared to iEX (internet based exposure). 5 studies were uncontrolled.	Analyses indicated large treatment effect sizes for within-group analysis and between group comparison to waitlist control. BA was not as effective as CPT and not significantly different from iEX.
Gallegos (2017)	To evaluate the effect size (ES) of yoga and meditation on PTSD outcomes in adult patients.	Meta-analysis	19	mind-body, meditation, tai chi, qi gong, yoga, mindfulness, mindfulness-based stress reduction, mindfulness-based cognitive therapy, mantram	Wait ist, TAU, PE, PTSD education group, present centered therapy	Complementary mind and body health approaches for the treatment of PTSD were associated with small to moderate effect sizes

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
George (2016)	To assess whether prazosin reduces nightmares, sleep disturbances, and illness severity in adults with PTSD.	Meta-analysis	6	prazosin	Placebo	Prazosin produced greater improvement than placebo in all three primary outcome measures: nightmare frequency and intensity, sleep quality, and illness severity
Goldberg (2020)	To quantify the efficacy and acceptability of MBIs for military veterans.	Meta-analysis	16	Mindful-based interventions	CBT, waitlist, TAU, psychoeducation, support group	At post-treatment, promising effects of MBIs were seen relative to non-specific controls (waitlist, attentional placebo) on measures of psychological symptoms and on quality of life / functioning. At follow-up, however, sustained effects were only seen on psychological symptoms with a small effect size.
Goldstein (2019)	To conduct a systematic review and meta-analysis to assess the impact of existing psychological treatments on PTSD and pain-related symptoms.	Meta-analysis	18	Psychological intervention: 11 single modality (exposure-based therapy, CBT & Trauma-focused CBT, mindfulness meditation, mindfulness-based relaxation training, biofeedback, adaptive information processing); 7 multimodal therapies	Waitlist, weekend workshop	Psychological interventions demonstrated small to moderate effects on PTSD symptom severity but did not consistently reduce pain intensity or interference. Psychological only interventions produced larger effects on PTSD symptoms and pain interference than multimodal interventions.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Grant (2018)	To estimate effects of acupuncture on PTSD symptoms, depressive symptoms, anxiety symptoms, and sleep quality for adults with PTSD.	Systematic review	7	Acupuncture	TAU, waitlist, sham acupuncture, medication, CBT, paroxetine	Identified large effect in favor of acupuncture versus any comparator and post-intervention and medium effects at longer follow-up. Warrant caution regarding claims that acupuncture is an evidence-based treatment, as authors stated they have limited confidence in the estimates given they came from small trials that involved significant attrition and unclear ITT procedures.
Haugen (2012)	To evaluate treatment outcome studies for PTSD in first responders.	Systematic review	17	Various psychotherapy and pharmacological treatments, including problem-solving therapy, psychodynamic therapy, in vivo and imaginal exposure, EMDR, prolonged exposure, CBT, medication, behavioral activation	Waitlist, TAU	There is limited and research examining treatments for PTSD among first responders. Only two RCTs were identified and none examined medication treatments. CBT treatments have the largest evidence base but also incur high dropout rates, which limit their effectiveness.
Hilton (2017)	To synthesize evidence from randomized controlled trials of meditation interventions to provide estimates of their efficacy and safety in treating adults diagnosed with	Meta-analysis	10	Meditation, including MBSR, yoga, mantram repetition	TAU, Waitlist, psycho-education	Meditation reduced PTSD symptoms significantly compared to controls, but the quality of the evidence is low.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
	post-traumatic stress disorder (PTSD).					
Hoskins (2015)	To determine the efficacy of all types of pharmacotherapy, as monotherapy, in reducing symptoms of PTSD.	Meta-analysis	51	Pharmacotherapy: SSRIs (sertraline, fluoxetine, paroxetine, citalopram, escitalopram, fluvoxamine); tricyclic antidepressants; MAOIs; antidepressants; other agents	Placebo-controlled	Some drugs have a small positive impact on PTSD symptoms and are acceptable. Fluoxetine, paroxetine and venlafaxine may be considered as potential treatments for the disorder. For most drugs there is inadequate evidence regarding efficacy for PTSD, pointing to the need for more research in this area.
Huang (2020)	To evaluate efficacy, acceptability, and safety of pharmacological treatments while considering patients' clinical characteristics	Meta-analysis	78 RCTs from 66 studies	Pharmaceutical management for adults with PTSD	placebo	All active drugs improved PTSD symptoms, including atypical antipsychotics, SNRIs, SSRIs, and TeCAs. These drugs had better effects than placebo: quetiapine, risperidone, fluoxetine, hydroxyzine, mirtazepine, olanzapine, paroxetine, sertraline, and venlafaxine. The APA and NICE guideline indicate that fluoxetine, paroxetine, sertraline, and venlafaxine should be recommended for PTSD drug therapy;

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
						results of this review support those guidelines.
Karatzias (2019)	To synthesize the evidence on interventions that addressed at least partially the symptoms of complex PTSD, including those of disturbances in self-organization (DSO).	Meta-analysis	51	CBT, Exposure-only, EMDR, other interventions (interpersonal psychotherapy, mindfulness, trauma management training, dialogical exposure therapy, dialectical behavior therapy, CBT plus emotion regulation training and stabilization therapy)	TAU, waitlist	CBT, exposure alone, and EMDR perform relatively equally for symptoms of PTSD and the DSO symptoms of negative self-concept and disturbances in relationships. Quality was moderate for CBT and low to moderate for exposure alone and EMDR.
Kitchiner (2012)	To examine the efficacy of psychosocial therapies for common mental health disorders among military veterans.	Meta-analysis	29	A psychosocial intervention was defined as: any specific non-pharmaceutical intervention aimed at reducing a range of symptoms, offered by one or more health professional or lay person, with contact between therapist and participant on at least one occasion. PTSD treatments included mantra intervention, prolonged exposure, trauma management therapy, anger therapy, imagery rehearsal therapy, group self-management, group telepsychiatry, coping skills group, mindfulness, trauma focused group therapy, relaxation	TAU, Waitlist, active comparators	Evidence that several different trauma-focused psychosocial interventions delivered on a one-to-one or group basis with the therapist within the same room reduced PTSD symptoms. Studies had mixed quality, with low quality in over half of the interventions.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Kline (2018)	To characterize the long-term outcomes of psychotherapies for PTSD and identify predictors of long-term treatment response	Meta-analysis	32	exposure, CT, CBT-M, CPT, EMDR	treatment as usual, waitlist control, different interventions, non-directive control conditions such as supportive counseling or relaxation.	The current study adds to the strong imperative to use these treatments for PTSD, as these interventions clearly demonstrate enduring effects and maintenance of gains following termination.
Kline (2021)	To examine whether baseline depressive symptoms impact PTSD symptom reduction and treatment dropout	Meta-analysis	44	cognitive behavioral therapy-mixed (CBT-M), for interventions using one or a combination of components of CBT, such as cognitive restructuring and in vivo exposure exercises; cognitive processing therapy (CPT); cognitive therapy (CT); eye movement desensitization and reprocessing (EMDR); and exposure, including prolonged exposure, virtual reality, or other interventions primarily emphasizing exposure to the trauma memory	waitlist control (WLC) or non-directive, non-trauma focused conditions (NDC) intended to serve as an inactive therapy control, such as those with elements of relaxation, psychoeducation, present centered therapy, or non-directive supportive counseling	Our results suggest a connection between these two commonly comorbid features, such that greater pretreatment depression burden scores–when measured continuously (e.g., BDI)–were associated with attenuated pre-post PTSD symptom change
Kung (2012)	To evaluate and update the evidence for the use of prazosin in the treatment of nightmares, regardless of PTSD diagnosis.	Systematic review	21	Prazosin	placebo	This systematic review found a small but positive evidence base to support the efficacy of prazosin therapy for nightmares.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Kysar-Moon (2021)	To examine the effects of trauma-sensitive yoga (TSY) on PTSD and depression in women-only samples that use more rigorous study designs such as RCTs.	Meta-analysis	3	Trauma-Sensitive Yoga	education, assessment, waitlist	The results of this meta-analysis found no discernible effect of TSY on PTSD and depression.
Lee (2016)	To provide rigorous, transparent, and valid comparisons to inform clinical practice and improve existing CPGs	Meta-analysis	55	Aripiprazole (1), brofaromine (2), bupropion (1), TF-CBT (2), citalopram (1), CPT (1), divalproex (2), EMDR (2), fluoxetine (5), guanfacine (2), IPT (1), mirtazapine (1), nefazodone (1), olanzapine (3), paroxetine (7), PE with cognitive restructuring (PE/CR) (2), PE (7), prazosin (3), risperidone (5), sertraline (5), SIT (1), tiagabine (2), topiramate (2), and venlafaxine (2)	active treatment comparator or placebo	By every measure considered, trauma-focused psychotherapies were superior to medications. Large reductions in symptoms persisted long after psychotherapy completion, whereas continued use of medication was necessary for long-term benefits.
McClellan (2022)	To statistically evaluate the effectiveness of services provided by telepsychology for Veterans	Meta-analysis	27	telepsychology	traditional in-person therapy (TAU and Face to Face)	Overall, the results of this meta-analysis suggest that telepsychology is comparable to face to face therapy for Veterans dealing with a variety of psychological conditions. Services delivered by telepsychology had a moderate-to-strong effect of reducing symptoms of

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
						PTSD and depression in veterans.
McGuire (2017)	To examine placebo-controlled RCTs of D-Cycloserine (DCS)-augmented exposure-based treatment for anxiety disorders, OCD, and PTSD to determine its treatment efficacy and identify the RR of experiencing treatment response or diagnostic remission.	Meta-analysis	20	d-cycloserine (DCS) augmented exposure treatment	placebo	Findings suggest minimal benefit of DCS relative to placebo augmentation across all three outcomes, with the most robust effect observed among anxiety disorders during acute treatment (g=0.33). Given the contained nature of anxiety triggers predominantly studied in DCS trials (e.g., SAD, specific phobias), this may be more easily achieved for anxiety disorders relative to conditions that have more expansive triggers like OCD and PTSD. As OCD and PTSD often have greater psychiatric comorbidities, it may be that specific co-occurring conditions impede extinction learning targeted in treatment.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
McLean (2022)	To examine the efficacy of exposure therapy among Veterans and active duty military personnel across various control conditions and tested potential treatment-related, demographic, and clinical moderators.	Systematic Review and Meta-Analysis	19	exposure therapy	TAU, waitlist, Non-trauma-focused, CPT	There were medium to large effects favoring exposure over waitlist and treatment as usual and no effect relative to other trauma-focused treatment (i.e., CPT).
Melton (2020)	To identify candidate psychological and non-pharmacological treatments for future research. How effective are interventions that treat mental health problems associated with a history of complex traumatic events?	Systematic Review and Meta-Analysis	104 (qualitative) 79 (meta-analysis) 39 (PTSD trials)	Psychological interventions versus control or active control; pharmacological interventions versus placebo	placebo	Evidence-based psychological interventions are effective and acceptable for reducing post-traumatic stress disorder symptoms and depression and anxiety in people with complex trauma. These interventions were less effective in Veterans and had less of an impact on symptoms associated with complex post-traumatic stress disorder. Trauma-focused CBT and other trauma-focused interventions, including EMDR, delivered as single-component or multicomponent approaches are superior to control for PTSD symptoms and associated mental comorbidities.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Metcalf (2016)	To assess the current evidence investigating the effectiveness of 15 emerging (new or novel) interventions for the treatment of adults with PTSD	Systematic review	19	The interventions selected were acceptance and commitment therapy, acupuncture, art therapy, canine therapy, emotional freedom technique (EFT), equine therapy, mantra-based meditation (MBM), mindfulness-based stress reduction, music therapy, outdoor therapy, rewind therapy/technique, thought field therapy, traumatic incident reduction, visual kinesthetic dissociation, and yoga.	TAU, waitlist	Acupuncture was superior to a control condition and comparable to cognitive-behavioral therapy. EFT was shown to improve PTSD symptoms comparably to EMDR condition. MBM combined with TAU was shown to improve PTSD symptoms significantly more than TAU alone. Yoga was shown to improve PTSD symptoms significantly more than control conditions. Each of these four interventions only had a single RCT that qualified as low risk of bias; none of the studies had large sample sizes or significant follow-up periods. The majority of emerging interventions investigated in this review had insufficient levels of evidence supporting their efficacy.
Niles (2018)	Assess effectiveness of complementary and integrative (CI) treatments for PTSD, focused on four specific mind-body therapies utilized in clinical settings: mindfulness,	Systematic review	20	Complementary and integrative (CI) interventions: mindfulness, relaxation, yoga and tai chi	Waitlist, TAU (EMDR, CBT, PE), biofeedback, women's health education	The evidence provided by the mindfulness, yoga, and relaxation studies reviewed here offers support for mind-body treatments for PTSD.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
	relaxation, yoga and tai chi.					
O'Toole (2016)	Examine the efficacy of hypnotherapeutic techniques as treatment for symptoms of PTSD	Meta-analysis	6	hypnotherapy	zolpidem, TAU, waitlist, no treatment	Forms of hypnotherapy were effective treatment for traumatic stress, with large effect sizes in the samples included. In addition, the specific PTSD symptoms of intrusion and avoidance were both found to decrease significantly in response to hypnotherapy.
Pae (2008)	To meta-analyze the effectiveness and tolerability of atypical antipsychotics to address the current evidence of their role in the treatment of PTSD as a monotherapy or add-on therapy	Meta-analysis	7	risperidone and olanzapine as an add-on therapy or monotherapy	placebos	Found supporting evidence for efficacy of atypical antipsychotics on global PTSD symptoms and individual PTSD symptom clusters, in particular intrusion based on the findings of mean change from baseline to the end of study in CAPS total scores and CAPS cluster subscores, when comparing drug with placebo treatment.
Powers (2010)	To estimate the overall efficacy of prolonged exposure (PE) for PTSD relative to adequate controls	Meta-analysis	13	PE if they included multiple sessions of imaginal and in vivo exposure and were based on the manualized treatment	active treatment, psychological placebo, wait-list supportive counseling (SC), relaxation (R), Present Centered Therapy (PCT), Time Limited Psychodynamic Therapy (TLDP), and treatment as	PE performed significantly better than control conditions on measures of PTSD both at post-treatment (g=1.08) as well as at follow-up (g=0.68). Similarly, PE treatment was associated with significantly better outcomes on

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
					usual (TAU).	secondary outcome measures, both at post-treatment (g=0.77) and at follow-up (g=0.41). There was no significant difference between PE and other active treatments (CPT, EMDR, CT, and SIT).
Reist (2021)	To examine the pooled effect of prazosin vs placebo on sleep disturbances and overall PTSD symptoms in patients with PTSD	Systematic Review and Meta-Analysis	6	prazosin	placebo	Patients receiving prazosin have significant improvements in overall PTSD scores, nightmares, and sleep quality as compared to placebo, even after inclusion of the large, randomized control trial by Raskind et al, which failed to show benefit of prazosin for any outcome.
Ronconi (2015)	To inform clinicians about effective treatment options for depressive symptoms associated with PTSD	Meta-analysis	93	PTSD treatments: cognitive processing therapy, EMDR, fluoxetine, narrative exposure therapy, paroxetine, PE, risperidone, sertraline, simulator exposure, venlafaxine	a) active control (for psychotherapy studies) or placebo (for drug studies), b) nonspecific comparison treatment such as treatment as usual, or c) wait-list control.	The efficacy of PTSD treatments for co-occurring depressive symptoms was similar between treatments.
Scott (2022)	To compare real-time telehealth (video, phone) with face-to-face delivery to individuals with PTSD	Systematic Review and Meta-Analysis	13 (qualitative) 10 (meta-analysis)	telehealth primary care services (Ex: CBT, PE, etc.)	in person care	There were no differences between telehealth and face to face for PTSD severity up to 6 months post-treatment.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Sebastian (2017)	To assess the efficacy of emotional freedom technique (EFT) in treating PTSD by conducting a meta-analysis of existing RCTs.	Systematic Review and Meta-Analysis	7	EFT	TAU (EMDR, CBT), waitlist	The analysis of the seven studies that met the inclusion criteria showed that EFT is a safe and efficacious treatment within 10 or fewer sessions and with a variety of populations, yielding both large effect sizes and lasting benefits.
Seda (2015)	To compare the short-term efficacy of prazosin vs. imagery rehearsal therapy (IRT) on nightmares, sleep quality, and post-traumatic stress symptoms (PTSS).	Meta-analysis	15	prazosin, IRT, or a cognitive-behavioral treatment with a component of IRT	waitlist, placebo, usual care	IRT and prazosin had similar effects for nightmare frequency, sleep quality, and post-traumatic stress disorder symptoms; however, adding cognitive-behavior therapy for insomnia to IRT enhanced its effects for improving sleep quality as well as post-traumatic stress disorder symptoms.
Sherman (2023)	To examine the effect of seeking safety (SS) intervention on comorbid PTSD and SUD across RCTs.	Meta-analysis	7	Seeking Safety (SS)	TAU, Relapse Prevention Training, community care, Women's Health Education	SS is an effective intervention for the comorbid treatment PTSD and SUD across various settings and among diverse populations. Importantly, the long-term effects of abbreviated versions of SS are comparable to those of the full version of SS.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Simpson (2021)	To examine the efficacy and acceptability of the two central treatment types– trauma-focused and non-trauma-focused – compared with all comparators and with cognitive-behavioral manualized SUD treatments immediately post-treatment and at longest follow-up	Meta-analysis	28	trauma-focused treatments (Substance Use Disorders Using Prolonged Exposure, COPE, CPT, PE) and non-trauma-focused treatments (Integrated Cognitive Behavioral Treatment [ICBT])	Primarily compared trauma focused and non-trauma focused therapies, but also included controls of manualized SUD treatment, SUD, TAU, and no/minimal treatment	All within-group models showed significant effects, mostly in the moderate to large range, for both PTSD and SUD outcomes at follow-up. Trauma-focused, non-trauma-focused, manualized SUD treatments, and SUD TAU are all associated with significant improvements on both PTSD and SUD outcomes. Between-group differences were less consistent and much less robust. Trauma-focused treatments showed slight indications of advantage relative to all comparators regarding PTSD outcomes although manualized SUD treatments also showed slight indications of advantage relative to trauma-focused and non-trauma-focused treatments regarding SUD outcomes.
Sloan (2013)	To conduct a meta-analysis of the efficacy of group treatments for adult survivors of trauma with PTSD symptoms.	Meta-analysis	16	Group treatment (mixed): CBT, CBT/DBT/narrative, exposure-based, spiritually-integrated, anger management, EMDR	waitlist, mixed other active treatment	The findings of this meta-analysis indicate that group treatment for PTSD is better than no treatment. However, when compared with a comparison condition intended to control for nonspecific therapy effects (e.g.,

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
						supportive counseling), group treatment results in comparable benefits.
Stapleton (2023)	To examine emotional freedom technique (EFT) as a treatment for PTSD.	Systematic Review and Meta-Analysis	6	EFT	TAU, waitlist, or an evidence based alternative psychotherapy (NET, EMDR, CBT)	The current updated review demonstrates that Clinical EFT produces greater reduction in PTSD symptoms than wait-list or "treatment-as-usual" control groups, symptom reductions similar to other evidence-based therapies, and large treatment effects.
Sun (2021)	To evaluate the effect of psychological interventions on healthcare providers (HCP) with PTSD due to their necessary exposure in the COVID-19 pandemic	Meta-analysis	6 (qualitative synthesis) 2 (quantitative, meta-analysis)	1) CBT-L/CBT-B vs. WL 2) fish oil capsules vs. psychoeducation 3) mindfulness-based stretching and deep breathing; no comparison 4) multiple (education, exposure therapy, MBSR, exercise, counseling sessions) vs. exercises (without detail) 5) expressive writing: intervention group about trauma at work/personal vs. control group about activities outside of work 6) mobile-based: intervention app vs. control app (protocol-only)	waitlist, psychoeducation, exercises, same intervention with more restrictions	Generally, data on many outcomes were limited and sometimes unavailable. The most effective and feasible treatment option for HCP with PTSD is still pending.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Swerdlow (2023)	To estimate the within-group treatment effect for participants assigned to trauma-focused psychotherapies (TFP)	Systematic Review and Meta-Analysis	21	trauma-focused psychotherapy (EMDR, TF-CBT-L, TF-CBT-B, CPT, DET, CT, TF-CBT, PE, PE+CR, CPT, M-CPT, CBCT, PE-I, SAT, TFGT, CBGT, PCGT, EMDR, CPT + PE)	waitlist, TAU, nontrauma-focused psychotherapy (SMDT, STAIR+PE, PFE)	Overall, we observed a medium effect of TFP on interpersonal functioning that was significantly and substantively larger than that associated with allocation to a control condition.
Turgoose (2019)	To complete a systematic review of interventions for partners of military personnel with PTSD, and to outline the content and range of services, commenting on their outcomes based on the evidence available.	Systematic review	25	Group-based intervention (REACH, SAH, psychodynamic group therapy intervention, FAS); residential retreats (psychoeducation, individual or couples' counselling of varying formats including CBT; general well-being activities as a complement to the groups and therapy, such as yoga and meditation; couples therapy (SAT, conjoint mindfulness-based CBT); internet-based interventions (psychoeducational components); family-based interventions (FOCUS, BSI-18, FAD)	MIXED: some with control groups, some without; some pre-post comparisons	The evidence overall suggests that these interventions are useful in improving the well-being of partners and are well-received.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Varker (2020)	To systematically review how PTSD treatment response and nonresponse have been operationalized, and to propose definitions for these constructs to increase the consistency with which they are applied in research and clinical practice.	Systematic review	192 (143 in qualitative synthesis)	Guideline-recommended interventions, including **first-line psychological interventions:** cognitive behavior therapy (CBT), cognitive processing therapy (CPT), cognitive therapy (CT), prolonged exposure (PE), eye movement desensitization and reprocessing (EMDR), brief eclectic psychotherapy (BEP), narrative exposure therapy (NET), and written narrative exposure therapy and **first-line pharmacological interventions:** sertraline, paroxetine, fluoxetine, and venlafaxine	MIXED: waitlist, TAU, psychoeducation, 12 step, alcohol support, other psychotherapy	More than a quarter of trials failed to operationalize treatment response or nonresponse. Trials that did not operationalize treatment response typically used statistical tests to show between group differences, and concluded that there was significant benefit, decreases in PTSD symptoms, or differences in rates of a PTSD diagnosis.
Varma (2018)	To determine the efficacy of topiramate, as adjuvant or monotherapy, on the reduction of PTSD symptoms when compared with placebo among adults with PTSD	Systematic Review and Meta-Analysis	5	Topiramate	placebo or other pharmacotherapy (not topiramate)	The efficacy of topiramate in PTSD is not definitively supported by the existing data, although hyperarousal symptoms were decreased among those who took topiramate.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Watts (2013)	To inform clinicians about effective treatment options and thus lead to more informed decisions about treatment.	Meta-analysis	112	psychotherapy, somatic treatments, medication	Waitlist, drug placebo, or psychotherapy control	There are a large number of effective treatments for PTSD. Those with the largest amount of evidence include various types of CBT, eye movement desensitization and reprocessing, antidepressants (specially venlafaxine and SSRIs), risperidone, and topiramate. In addition, several treatments that have been evaluated in only 1 or 2 studies were effective: psychodynamic therapy, hypnotherapy, skill-based CBT, desensitization, gingko, and acupuncture. The effect size for group therapy failed to reach a conventional level of statistical significance, but the effectiveness of group therapy differed by approach. There was a moderate-sized and statistically small, nonsignificant effect for cognitive-behavioral group therapy.
Yunitri (2023)	To explore and determine the comparative effectiveness of nine	Meta-analysis	98	1) CPT, (2) CT, (3) EMDR, (4) NET, (5) PE, (6) CBT, (7) PCT, (8) BEP, (9) PDT	waitlist/no treatment; TAU	CPT, EMDR, CT, NET, PE, CBT, and PCT showed as the most effective therapies on improving PTSD symptoms

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
	psychotherapies in treating adults diagnosed with PTSD at immediate post-treatment, short-and-long-term follow-up measurements.					with large to moderate effect at post-treatment measurement. All specific psychological treatments tended to decrease the number of people who meet PTSD diagnosis post-treatment.
Zhang (2020)	To evaluate the effects of prazosin on nightmares, sleep quality, and overall PTSD symptoms, and assessed its acceptability and frequency of adverse events in adult patients with PTSD.	Systematic Review and Meta-Analysis	8	prazosin	placebo	This meta-analysis showed that prazosin was significantly associated with an improvement of nightmare symptoms, but not with overall PTSD symptoms or sleep quality in PTSD patients.
Zhang (2022)	To compare the efficacy and acceptability of all psychotherapeutic and pharmacological interventions for trauma-related nightmares (TRN) in adults	Systematic Review and Network Meta-Analysis	29	Six pharmacotherapies (hydroxyzine, nabilone, risperidone, doxiazosin, praoxetine, and prazosin), seven psychotherapies (CPT, IRT, IRT+PE, spaced PE+PCT, cognitive behavioral therapy for insomnia (CBT-I), CBT-I+IRT, supportive therapy (ST))	placebo and waitlist	Prazosin and IRT are the two effective interventions for TRN. All other interventions, such as CBT-I, IRT+CBT-I, risperidone, and paroxetine, were not found to be significantly more efficacious compared to control.

First Author (Year)	Study Aim	Design	Number of studies	Intervention description	Control/Comparison Description	Main findings
Zhou (2021)	To conduct a systematic review and meta-analysis to examine the effects of Internet-based Interventions (IBI) on Veterans diagnosed with PTSD who were living in a community or absent from military life.	Systematic Review and Meta-Analysis	6	Internet based intervention	OUC (optimized usual primary care PTSD treatment); in-person care; internet-based supportive counseling (vs. internet-based CBT); AAU (adjustment as usual); self-management thinking forward (vs. peer-supported)	IBI was related to a small decrease in PTSD symptoms (ES = 0.29 (95% CI -0.48 to -0.11, $p < 0.01$).

Appendix G. Screening and Early Detection of PTSD Literature Review

Table G.1 Studies Included in the Screening and Early Detection of PTSD Literature Review

Publication Year 2013	
First Author	Adler, A B.
Study Aim	Describe measurement of PTSD in occupational health context
Design	Review (Chapter)
Inclusion, Exclusion, N	N/A, N/A, N/A
Screening measure	Structured diagnostic interview: Clinician Administered PTSD-scale (CAPS); Structured clinical, interview for DSM-IV (SCID) Self-report: Impact of Event Scale-Revised (IES-R); PTSD Checklist (PCL)
Screening Process	Not discussed
N/Percent Positive	N/A
Main Findings	Describes ways to screen for PTSD symptoms in the occupational health context.
World Trade Center (WTC)	N
Publication Year 2023	
First Author	Andrews, K. L.
Study Aim	Provide estimates of lifetime PPTE exposures among RCMP cadets in training and assess for associations with mental disorders or sociodemographic variables.
Design	Cross-sectional
Inclusion	1) Rocky Mountain Canadian Mountain Police Cadets
Exclusion	None, must have met requirements for RCMP
N	772
Screening measure	Life Events Checklist PCL-5
Screening Process	On-line web-based survey
N/Percent Positive	88% had at least one trauma event exposure; not clear how many screened positive for PTSD
Main Findings	High rates of exposure to traumatic events in cadets. Having exposure was not significantly related to increased odds of screening positive for PTSD (aOR = 1.69, 95% CI = 0.49, 7.26).
WTC	N
Publication Year 2023	
First Author	Baker, L. D.
Study Aim	Evaluate the diagnostic properties of the Primary Care PTSD for DSM-5 (PC-PTSD-5) scale among firefighters, explore the use of an adapted PC-PTSD-5 on a five-point Likert-type scale, and examine sensitivity and specificity of the adapted instrument in this population.

Design	Cross-sectional
Inclusion	Merged 2 samples into a single data set. 1st Sample: Patients (firefighters) referred from first responder agencies for trauma related treatment. 2nd Sample: firefighters participating in a stepped-care, population health monitoring program
Exclusion	N/A
N	92 (1st sample: 36, 2nd sample: 56)
Screening measure	Primary Care PTSD Screen-5 (PC-PTSD-5); PTSD Checklist for DSM-5 (PCL-5)
Screening Process	1st sample completed the PCL-5 and PC-PTSD-5 as part of clinical intake. 2nd sample completed as part of stepped-care, population health monitoring program.
N/Percent Positive	23% of firefighters in the pooled sample screened positive for PTSD on the PCL-5 (using cut-point of 33) and 14% screened positive with the recommended first responder cut-point of 41
Main Findings	Both permutations of the PC-PTSD-5 (0–5 and 0–20) demonstrated excellent operating characteristics (high AUC). An optimal threshold of the PC-PTSD-5 (0-5) was identified as a score of 3.
WTC	N

Publication Year 2023	
First Author	Beattie, E.
Study Aim	Explore how the different PTSD symptom clusters from the eight-factor model are related to one another in a sample of treatment-seeking first responders.
Design	Cross-sectional
Inclusion	Treatment-seeking first responders (firefighters and EMTs); participants who answered all 20 questions on the PCL-5, were 18 or older, and consented; 69% - firefighters, 31% - EMTs
Exclusion	None
N	342
Screening measure	PCL-5
Screening Process	Clinical assessments prior to their first treatment session with a therapist
N/Percent Positive	37% met the total cutoff score of 41 or higher on the PCL-5
Main Findings	Internal re-experiencing was potentially predictive of external re-experiencing, negative affect, dysphoric arousal, and avoidance.
WTC	N

Publication Year 2012	
First Author	Berger, W.
Study Aim	Conduct a meta-analysis of epidemiologic studies on the prevalence of PTSD in rescue workers to calculate the pooled worldwide current prevalence of PTSD in this population as a whole and for each of the different occupational groups that are involved in this kind of work.
Design	Meta-analysis
Inclusion	(1) Provided original data on the prevalence of PTSD in ambulance personnel, canine handlers, firefighters, rescue workers (when the precise occupational group studied was not spelled out by the authors), or police officers. Police officers were included only if they were conducted after a rescue operation resulting from a major disaster.

Exclusion	(1) Articles investigating other less studied occupational groups, namely recovery workers, body handlers and military medical workers; (2) Studies based on combined samples of rescue workers which included at least one of these occupational groups; (3) study using the Impact of Events Scale or the General Health Questionnaire-12
N	20,424 (28 articles)
Screening measure	N/A
Screening Process	Meta-analysis of estimates across studies
N/Percent Positive	10% pooled. Ambulance personnel: 14.6%; Firefighters: 7.3%; Police officers exposed to major disaster: 4.7%; Other rescue teams: 13.5%
Main Findings	The pooled current worldwide prevalence of PTSD in rescue workers in general is 10%. Meta-regression modeling found higher prevalence estimates in studies conducted in Asia and among ambulance personnel.
WTC	N

Publication Year 2019	
First Author	Bing-Canar, H.
Study Aim	Evaluate associations among alcohol use problems, PTSD symptoms, and suicide risk in a sample of trauma-exposed, urban professional firefighters; examine the main and interactive effects of alcohol use problems with PTSD symptom clusters
Design	Cross-sectional
Inclusion	Firefighters in a large urban fire department in the southern U.S., age of 18 years, endorsed exposure to at least one traumatic event on the Life Events Checklist for DSM-5, endorsed ever using alcohol (lifetime) on the Alcohol Use Disorders Identification Test
Exclusion	N/A
N	632
Screening measure	PCL-5; LEC-5
Screening Process	Online survey
N/Percent Positive	9.8% on PCL-5 (cut-point 33)
Main Findings	PTSD symptom severity (OR, 1.37; $p<0.001$) and alcohol use problem (OR, 1.37; $p=0.391$) is significant positive associated with suicide risk.
WTC	N

Publication Year 2018	
First Author	Carleton, R. N.
Study Aim	Provide estimates of several mental disorder symptoms that can provide initial data on normative responding for PSP and facilitate explicit comparisons across diverse Canadian PSP.
Design	Cross-sectional
Inclusion	Currently working public safety personnel, including civilian members working for police and volunteer firefighters
Exclusion	N/A
N	5,813
Screening measure	PCL-5

Screening Process	Web-based self-report survey in English or French
N/Percent Positive	Not reported. Only examines predictors of any positive mental health screening (PTSD, AUD, Depression, Anxiety, social anxiety disorder, panic disorder). 44.5% screened positive for at least 1 mental disorder.
Main Findings	Positive screening for mental health disorder among PSP is much higher than the diagnosis among general population
WTC	N

Publication Year 2015	
First Author	Chung, I.
Study Aim	Evaluate utility of MMPI as related factor with PTSD according to job stress level using medical surveillance information collected from experienced firefighters over a 5-year period
Design	Longitudinal
Inclusion	Firefighters who completed MMPI in 2006 and KOSS-SF and IES-RK in 2011
Exclusion	Did not specifically state exclusion criteria; but study analyzed data from those who answered all questionnaires and provided written consent at two assessments
N	185
Screening measure	Minnesota multiphasic personality inventory (MMPI) Korean occupational Stress Scale-Short Form (KOSS-SF) Impact of Events Scale-Revised-Korean Version (IES-R-K)
Screening Process	Annual health examinations for firefighters in 2006 and 2011
N/Percent Positive	35%
Main Findings	MMPI is related to PTSD according to the level of job stress. The factors that impact job stress are masculinity-femininity and social introversion. Mean age and job duration were found to be higher for those who screened positive for PTSD than those who were with negative with PTSD diagnosis.
WTC	N

Publication Year 2020	
First Author	Di Nota, P. M.
Study Aim	Examine the relationship between suicidal ideation, plans and attempts and positive mental health screens for depression, anxiety, panic disorder, alcohol abuse and PTSD among Canadian sworn and civilian police employees.
Design	Cross-sectional
Inclusion	Currently serving public safety personnel in Canada, including correctional workers and officers, firefighters, paramedics, police officers, and public safety communications officials, including individuals identifying as sworn federal RCMP, sworn members of municipal and provincial police services (i.e. ‘police’) and the civilians who work within the police services (i.e. ‘civilians’).
Exclusion	N/A
N	4,236
Screening measure	PCL-5
Screening Process	English or French using web-based self-report survey

N/Percent Positive	RCMP = 29.2%, other police= 18.0%, civilians=24.6%
Main Findings	Strong association between positive screens for all assessed mental disorders and significantly increased odds of suicidal ideation among sworn officers.
WTC	N

Publication Year 2021	
First Author	Healy, N. A.
Study Aim	Examining associations among PTSD symptom severity, sleep disturbance, and suicide-related outcomes among firefighters
Design	Cross-sectional
Inclusion	Current firefighter at fire department in a large metropolitan area in the southern United States, 18 years or older, provided consent to completion of online questionnaires, endorsed at least one PTSD Criterion A traumatic life event
Exclusion	Inability or unwillingness to complete the online questionnaires
N	802
Screening measure	Life Events Checklist for DSM-5 (LEC-5) PCL-5
Screening Process	Online research survey
N/Percent Positive	N/A
Main Findings	PTSD symptom severity is positively associated with suicide risk and sleep disturbance
WTC	N

Publication Year 2010	
First Author	Inslicht, S. S.
Study Aim	Determine whether family loading for mood or anxiety disorders or alcohol or drug use disorders in first-degree relatives
Design	Longitudinal
Inclusion	Police officers recruited during training from four urban police departments (New York Police Department and 3 departments in the San Francisco Bay Area)
Exclusion	N/A
N	400
Screening measure	Baseline: Structured Clinical Interview for DSM-IV (SCID-IV); Life Stressor Checklist-Revised (LSC-R) 12-month follow-up: Critical incident History Questionnaire (CIHQ); PCL-S; Peritraumatic Distress Inventory (PDI)
Screening Process	Baseline clinical interviews and self-report during initial enrollment, self-report at 1 year follow up
N/Percent Positive	1.1% had histories of PTSD (not current) at baseline from SCID; 67% exposed to a critical incident in the first year of services; 0.4% met criteria for PTSD in the year follow-up (2.5% partial PTSD)
Main Findings	Family loading of mood and anxiety disorders had a significant direct effect on peritraumatic distress and a significant indirect effect on post-traumatic stress symptoms that was fully mediated through peritraumatic distress to the worst critical incident in the first year of service

WTC	N
Publication Year 2017	
First Author	Kerai, S. M.
Study Aim	Assess post-traumatic stress symptoms and their predictors among EMS personnel in Karachi, Pakistan.
Design	Cross-sectional
Inclusion	EMS personnel (doctors, nurses, technicians) and drivers with at least 3 months of work experience on all three shifts (morning, evening, and night), a selected ambulance service run by the AMAN foundation in Karachi
Exclusion	N/A
N	518
Screening measure	Impact of Event Scale-Revised (IES-R)
Screening Process	Self-report, in-person interviews
N/Percent Positive	53.6% reported a work-related traumatic event. IES-R Score was M= 23.9 and SD 12.1.
Main Findings	Young individuals are at higher risk (β = −0.17, 95% CI -0.33–0.023, P = 0.03), as well as people with dysfunctional coping (β = 0.67, 95% CI 0.39–0.95, P < 0.05). EMS personnel who have higher scores for anxiety and depression have higher levels of post-traumatic stress symptoms (β = 0.64, 95% CI 0.52–0.75, P < 0.05).
WTC	N
Publication Year 2011	
First Author	Kimbrel, N. A.
Study Aim	Improve and shorten the Sources of Occupational Stress scale (SOOS) in order to increase its practical utility for clinicians and researchers who work with firefighters
Design	Cross-sectional
Inclusion	Study 1 (not relevant for this analysis). Study 2 - active duty firefighter from a large urban fire department in the northeastern US
Exclusion	N/A
N	Total=408 (study 1=246, Study 2=162)
Screening measure	PCL
Screening Process	Questionnaires administered in small groups with several brief measures of job outcomes
N/Percent Positive	N/A
Main Findings	The correlations between the SOOS, SOOS-14, and PTSD symptoms, r= .52, .53 (p=.01), respectively.
WTC	N
Publication Year 2022	
First Author	Leung, T. Y.
Study Aim	Implement PTSD screening for first responders at a primary care concierge clinic.
Design	Cross-sectional
Inclusion	First responders who visited the clinic during program implementation period (including police officers, firefighters and dispatchers).

Exclusion	N/A
N	34
Screening measure	PCL-5; LEC-5
Screening Process	Concierge clinic staff trained on PCL-5 and administered to patients in rural clinic in KS
N/Percent Positive	23.5%
Main Findings	23.5% (n = 8) of first responders were screened positive. Almost 80% of first responders reported experiencing at least one PTSD symptom (n = 27). Six of the eight screened positive first responders (75%) received a referral.
WTC	N

Publication Year 2017	
First Author	Luftman, K.
Study Aim	Identify a population of providers at risk for PTSD, and to gain some estimate of the incidence in that population.
Design	Cross-sectional
Inclusion	Pre-hospital and in-hospital care providers including paramedics, nurses, trauma surgeons, emergency medicine physicians, and residents were invited to participate in the survey.
Exclusion	N/A
N	546
Screening measure	Primary Care PTSD Screen (PC-PTSD)
Screening Process	Anonymous e-survey or in-person survey
N/Percent Positive	33%
Main Findings	High proportions of healthcare workers at risk for PTSD across all professional groups. Those at the scene (EMT, Paramedic, Firefighter, Flight Nurses) screen positive at nearly twice the rate of those in the Operating Room or ICU.
WTC	N

Publication Year 2007	
First Author	Maia, D. B.
Study Aim	Determine the current prevalence of post-traumatic stress symptoms (PTSS) in Brazilian police officers and to compare groups with and without PTSS in terms of associated morbidity.
Design	Cross-sectional
Inclusion	Elite police officers from a specially trained unit with a paramilitary organizational structure deployed only in critical situations, such as large-scale armed confrontation, prison riots, or criminal situations involving hostages.
Exclusion	N/A
N	157
Screening measure	Brazilian version PTSD Checklist-Civilian Version (PCL-C)
Screening Process	Police officers from an elite unit (n=157) were asked to fill out a socio-demographic questionnaire, the 12-item General Health Questionnaire and the Post-Traumatic Stress Disorder Checklist-Civilian Version. The latter's scores were used to establish the diagnoses of “full PTSD” and of “partial PTSD”.

N/Percent Positive	8.9% (Full PTSD) and 16% (Partial PTSD)
Main Findings	PTSD prevalence was comparable to those reported for North American and Dutch policemen. The presence of “full PTSD” was associated with evidence of considerable morbidity, including poorer health and higher rates of suicidal ideation.
WTC	N

Publication Year 2017	
First Author	Martin, C. E.
Study Aim	ID specific correlates of suicidality (lifetime suicidal ideation and/or attempts) in a firefighter/EMS sample.
Design	Cross-sectional
Inclusion	Employed at the fire department (firefighter/EMS personnel)
Exclusion	None
N	3,036
Screening measure	PTSD Checklist-Civilian Version PCL
Screening Process	Data were collected as part of a department-wide suicide prevention program, where members of the department viewed a PowerPoint presentation concerning suicide prevention. Pts completed a paper/pencil survey immediately after the presentation.
N/Percent Positive	N/A
Main Findings	The current study highlights the importance of targeting depression and PTSD symptom severity in efforts to reduce suicidality in firefighter/EMS personnel.
WTC	N

Publication Year 2021	
First Author	Morrison
Study Aim	Examine internal consistency to explore the reliability of PCL-5 scores, convergent validity using correlations between the PCL-5 and another measure of PTSD, discriminant validity using correlations between the PCL-5 and measures of other constructs (e.g., anxiety, depression symptoms, alcohol abuse), and structural validity of PCL-5 scores in a sample of firefighters/emergency medical technicians (EMT) and police officers.
Design	Cross-sectional
Inclusion	First responders seeking treatment at UCF RESTORES, a clinical research center offering treatment for PTSD
Exclusion	None
N	133
Screening measure	PCL-5; CAPS-5
Screening Process	Individuals seeking treatment completed the battery of measures prior to treatment.
N/Percent Positive	61.0% had PTSD diagnosed
Main Findings	The PCL-5 has good diagnostic accuracy for first responders. Utilizing DSM-5 diagnostic criteria based on the CAPS-5, the PCL-5 has an 84 % diagnostic accuracy and is optimized at the cutoff score of 41 according to QROC analyses. Low specificity rates for the PCL-5 within the cutoff scores of 31 through 33 with PTSD diagnoses using DSM-5 criterion suggest that the PCL-5 may misidentify individuals with sub-threshold PTSD symptoms as having PTSD.

WTC	N
Publication Year 2019	
First Author	Noor, N.
Study Aim	Identify demographic, work-related and mental health characteristics associated with post-traumatic stress disorder (PTSD) symptoms and lifetime suicidal ideation in female v. male colleagues.
Design	Cross-sectional
Inclusion	Firefighters employed in an urban fire department in a major metropolitan city in the Southwest USA
Exclusion	None
N	2,639
Screening measure	PTSD Checklist – Civilian Version; (PCL-C-17)
Screening Process	Participants completed a voluntary paper-and-pencil mental health needs assessment survey
N/Percent Positive	20.0% (Female); 12.0% (Male)
Main Findings	Female firefighters may be at higher risk for post-traumatic stress disorder and suicide ideation than men.
WTC	N

Publication Year 2018	
First Author	Petrie, K.
Study Aim	Determine the prevalence of mental health conditions among ambulance personnel worldwide.
Design	Meta-analysis
Inclusion	(1) Presented original data on at least one of the following mental health outcome(s): PTSD, depression, anxiety, or general psychological distress; (2) Stated how they used the diagnostic tool in a validated manner (appropriate cut-off scores or validated diagnostic algorithm); (3) Examined a representative population of currently employed ambulance personnel and provided a response rate indicating how many of their sample provided data.
Exclusion	Samples selected based on their exposure to a particular type of trauma (i.e. natural disaster, terrorism), their involvement at a particular site or event (i.e. 2005 London bombings) or who were all exposed to the same critical incident were excluded to ensure a representative sample of ambulance personnel engaged in regular everyday duties were examined.
N	32,111 (27 studies)
Screening measure	IES-R: Impact of Events-Revised, PDS: Post-traumatic Stress Diagnostic Scale, PSS: PTSD Symptom Scale, TSQ: Trauma Screening Scale, 6 of IES and 9 of non-IES derivation
Screening Process	Meta-analysis of estimates across studies
N/Percent Positive	11.0% (pooled)
Main Findings	Our findings confirm previous estimates that just over one in ten currently employed ambulance personnel report symptoms consistent with PTSD. Rates of PTSD amongst ambulance personnel may be decreasing over time, with more recent studies tending to find lower prevalence rates.
WTC	N

Publication Year 2024	
First Author	Seidman, A. J.
Study Aim	Identify whether first responders' perceived career calling (i.e., a "summons" to work) served as a protective factor in the relationship between PTSD symptoms associated with the COVID-19 pandemic and perceptions of self-efficacy in the workplace.
Design	Cross-sectional
Inclusion	First responders from local police and fire departments
Exclusion	None
N	138
Screening measure	Impact of Event Scale-Revised (IES-R)
Screening Process	Completed online survey as part of a research study
N/Percent Positive	22%
Main Findings	Perceiving a career calling may help protect first responders during COVID-19 from PTSD.
WTC	N

Publication Year 2021	
First Author	Steel, C.
Study Aim	Examine the prevalence and risk factors for PTSD and C-PTSD in UK police officers.
Design	Cross-sectional
Inclusion	UK police officers
Exclusion	None
N	2,444
Screening measure	International Trauma Questionnaire
Screening Process	Screening by occupational health practitioners regarding psychological distress. Part of the Noreen Tehrani Associates Psychological Screening (NTAPS) programmer has part of the National Police Wellbeing Service.
N/Percent Positive	2.8% PTSD, 2% C-PTSD
Main Findings	3% of police officers from high-risk roles screened positively for PTSD, and 2% for C-PTSD.
WTC	N

Publication Year 2020	
First Author	Tatebe, L. C.
Study Aim	Evaluate the feasibility of an urban trauma center to screen for post-traumatic stress (PTS) among emergency responders and to provide mental health services.
Design	Cross-sectional
Inclusion	Emergency responders, including paramedics, firefighters, law enforcement, and corrections officers
Exclusion	None
N	258
Screening measure	PCL-5

Screening Process	Present at a busy urban Level I trauma unit were approached to participate in the study
N/Percent Positive	20.3%
Main Findings	Trauma centers are an ideal and safe place to both screen for PTS and offer mental health assistance.
WTC	N

Publication Year 2022	
First Author	Testoff, A. C.
Study Aim	Estimate the association of post-traumatic stress disorder (PTSD) and sleep latency among retired firefighters.
Design	Cross-sectional
Inclusion	Retired careers firefighters in Florida
Exclusion	None
N	500
Screening measure	Primary Care Post-Traumatic Stress Disorder (PC-PTSD) Screener
Screening Process	Firefighters and firefighters in the Deferred Retirement Option Plan (DROP) were invited to complete the AERIAL baseline and follow up surveys
N/Percent Positive	8%
Main Findings	Risk for PTSD is associated with prolonged sleep latency among retired firefighters when compared to those without PTSD.
WTC	N

Publication Year 2010	
First Author	Berninger, A.
Study Aim	Track the prevalence of elevated PTSD risk in FDNY firefighters who were present during the first two weeks of the WTC attack in the first four years following the disaster.
Design	Longitudinal
Inclusion	Firefighters and emergency medical services (EMS) personnel who were hired before the close of the WTC site on July 25, 2002
Exclusion	Differences in job duties performed at the site, arrived at the disaster site more than 14 days after the rescue and recovery effort began, female firefighter due to small number.
N	10,074
Screening measure	PTSD Checklist-Civilian Version PCL
Screening Process	Health evaluations every 12-18 months with a physician that included a physical examination and completion of self-administered questionnaires
N/Percent Positive	In the first year after 9/11, 9.8% had elevated PTSD risk, followed by 9.9%, 11.7%, and 10.6% for years 2, 3, and 4, respectively.
Main Findings	Elevated PTSD risk was associated with early arrival time (OR=2.7; 95% CI 2.3, 3.0) and spending 4 months or more working at the WTC sites (OR=2.0; 95% CI 1.8, 2.3). Elevated PTSD risk with disability retirement at any time during the study (O=1.4; 95% CI 1.2, 1.6).
WTC	Y

Publication Year 2010	

First Author	Berninger, A.
Study Aim	Assess the prevalence of probable PTSD in firefighters with 9/11 exposure between 1-6 months and 3-4 years post exposure.
Design	Longitudinal
Inclusion	Firefighters and EMS workers who were hired before the close of the WTC site on July 25, 2002
Exclusion	Differences in job tasks these groups performed at the site, retired firefighters during the study period resulting in high loss to follow-up rates, individuals without a baseline exam within 6 months of 9/11, firefighters who arrived at the disaster site more than 14 days after the rescue/recovery effort, female firefighters due to small number, those without a follow up exam.
N	5,656
Screening measure	FDNY-modified PTSD Checklist (PCL-m)
Screening Process	Health evaluations every 12-18 months with a physician that included a physical examination and completion of self-administered questionnaires
N/Percent Positive	8.6% with probable PTSD at baseline and 11.1% at follow-up. 15.5% ever had probable PTSD during follow-up. 44.5% of all probable PTSD cases were as a result of delayed onset
Main Findings	Rates of probable PTSD increased from baseline to follow-up. Both were associated with substantial functional impairment
WTC	Y

Publication Year 2011	
First Author	Chiu, S.
Study Aim	Reexamined identified risk factors for each disorder (depression and PTSD) from previous study to clarify whether depression and PTSD represent separate constructs or a single reaction to a traumatic event.
Design	Longitudinal
Inclusion	Retirees who completed the expanded screening of WTC Medical Monitoring and Treatment Program (MMTP) and worked at least one shift at any designated WTC work sites between 9/11/2001 and 7/25/2002. Used first 19 months of expanded monitoring (Dec 2005-July 2007).
Exclusion	People who could not be classified in a 9/11 exposure group or first arrived at any of the WTC sites, did not complete all parts of the monitoring visit on the same day, fire marshal due to distinct nature of their work, who retired due to mental health disability, female due to small proportion.
N	1,915
Screening measure	PCL-17 (modified to fit the context of 9/11)
Screening Process	Periodic health evaluations on active FDNY members approximately every 18 months
N/Percent Positive	22% of the sample had elevated PTSD risk. Of all individuals with elevated depression risk (n=434), 71% were also identified with elevated PTSD risk. Conversely, of all individuals with elevated PTSD risk (n=422), 73% were also identified with elevated depression risk.
Main Findings	Firefighters who are exposed to 9/11 have high comorbidity rates, and responses to PTSD and depression are separate with unique risk factors.
WTC	Y

Publication Year 2011

First Author	Chiu, S.
Study Aim	Evaluate the performance characteristics of the PCL screening tool in relation to assessment of full diagnostic criteria using a structured diagnostic interview (the DIS) in a large population of retired firefighters
Design	Cross-sectional
Inclusion	Retired FDNY employee who worked at least one shift at any of the designated WTC work sites between September 11, 2001 and July 25, 2002
Exclusion	People who could not be classified in a 9/11 exposure group or first arrived at any of the WTC sites after September 24, 2001; who did not complete the PCL and the DIS on the same day; fire marshals because of the distinct nature of their work; persons who retired with a mental health disability; and female firefighters who represent a small proportion of the workforce.
N	1,915
Screening measure	PCL-17 (modified to fit the context of 9/11); Diagnostic Interview Schedule (DIS)
Screening Process	Self-administered and interviewer-administered during health screenings
N/Percent Positive	6% with PTSD using DIS to assess full DSM-IV criteria; 16% with elevated PTSD risk at PCL -17 the cutoff score of 44; 22% (n=422) with PTSD risk by lowering the cutoff score 39
Main Findings	39 is the optimal cutoff score of PCL-17 based on Youden index with the sensitivity of 0.85 and specificity of 0.82.
WTC	Y

Publication Year 2009	
First Author	Corrigan, M.
Study Aim	Determine by a computerized self-administered questionnaire, use of the FDNY Counseling Services Unit (CSU), and verified, rather than self-reported, functional impairment as assessed by CSU-assigned mental health-related medical leave; determine whether psychological symptom scores reported within the first 6 months after September 11 were associated with elevated PTSD risk, CSU use, or CSU assigned mental health–related medical leave; determine whether exposure–response gradients were significant for these outcomes.
Design	Longitudinal
Inclusion	FDNY rescue workers
Exclusion	Fire marshals and emergency medical service workers, firefighters who were killed on September 11; firefighters never at the WTC; firefighters who terminated or resigned during the study period (for reasons unrelated to September 11); and female firefighters, because small numbers precluded gender-stratified analysis.
N	8,487
Screening measure	PTSD Checklist -Civilian Version (PCL-C)
Screening Process	A computerized self-administered binary response questionnaire during the medical monitoring program (experiencing symptoms Y/N)
N/Percent Positive	76% had 1 or more psychological symptoms after 9/11; 18% reported functional impairment. 12% met the threshold for elevated PTSD risk. 28% received
Main Findings	Use of the screening tool identified increased risk of PTSD depends on exposure rate and use of CSU, as well as likelihood of taking mental health-related,

WTC	Y
Publication Year 2011	
First Author	Cukor, J.
Study Aim	Examine the longitudinal course of PTSD and related disorders following the terrorist attacks of 9/11 and the ability of known risk factors to predict the course of longitudinal PTSD and other psychopathology
Design	Longitudinal
Inclusion	WTC disaster recovery utility workers with partial or full PTSD based on Clinician Administered PTSD Scale (CAPS)
Exclusion	N/A
N	2,960
Screening measure	CAPS; PCL-C
Screening Process	Standardized clinical interview and self-report the Weill Cornell 9/11 Screening Program 3 times (initial [between July 2022 and April 2004], second [2004/2005] and third [2007/2008] evaluation). In later years, only those high risk for PTSD also did the CAPS.
N/Percent Positive	At first eval, 9.5% with PCL & 14.9% with CAPS; At second eval, 4.8% with PCL & 8.4% with CAPS; At third eval, 2.4% with PCL & 5.8% with CAPS
Main Findings	The general course of symptoms highlighted substantial reductions in PTSD prevalence between T1 and T2, and again between T2 and T3. The strongest predictors of ongoing PTSD 6 years following 9/11 were trauma history (odds ratio (OR) = 2.27, 95% confidence interval (CI) [1.06, 4.85]); the presence of major depressive disorder 1–2 years following the trauma (OR = 2.80, 95% CI [1.17, 6.71]); and extent of occupational exposure (OR = 1.31, 95% CI [1.13, 1.51]).
WTC	Y
Publication Year 2009	
First Author	Evans, S.
Study Aim	Explore the relationship between PTSD and social/occupational functioning and to examine the association of history of trauma and psychiatric disorders and PTSD in a group of DRWs involved in the events of the 9/11 WTC disaster.
Design	Cross-sectional
Inclusion	Utility workers deployed to the WTC in the immediate aftermath of the disaster on 9/11 and who participated in a larger study examining the psychological sequelae of the event
Exclusion	N/A
N	842
Screening measure	CAPS; Structured Clinical Interview for DSM-IV; Trauma History Questionnaire (THQ)
Screening Process	Comprehensive screening program consisting of a medical and psychological evaluation
N/Percent Positive	5.9% (+5.8% with having subsyndromal PTSD)
Main Findings	Workers with PTSD who had a previous trauma and psychiatric illness were at a greater risk for impairment in their social and occupational roles.

WTC	Y
Publication Year 2016	
First Author	Horn, S. R.
Study Aim	Examine how sociodemographic characteristics, WTC-related trauma exposures, and psychosocial characteristics related to PTSD, comorbid depression, alcohol use problems and functional impairment
Design	Cross-sectional
Inclusion	WTC responders who were present for an initial monitoring visit at World Trade Center Health Program
Exclusion	N/A
N	4,352
Screening measure	PCL-S
Screening Process	Regional clinical consortium established by the Centers for Disease Control and Prevention (CDC) in 2002
N/Percent Positive	N/A
Main Findings	The High-Symptom class was more likely than the Threat class to have a positive psychiatric history before 9/11/2001 (OR = 1.7) and reported a greater number of life stressors after 9/11/2001 (OR =1.1).
WTC	Y
Publication Year 2015	
First Author	Maslow, C. B.
Study Aim	The impact of PTSD and its correlates and how could have changed over time
Design	Longitudinal
Inclusion	(1) At least 18 years old; (2) WTC recovery / rescue workers between 9/11 and June 30, 2002; and (3) completed all three surveys
Exclusion	None
N	16,488
Screening measure	PTSD Checklist-Civilian Version PCL
Screening Process	PTSD symptomatology was assessed at each (3) wave by summing responses to the PTSD Checklist-Civilian Version
N/Percent Positive	N/A
Main Findings	Categorized courses of PTSD into five trajectories (low stable, mod-stable, mod-increasing, hi-decreasing, hi-stable), and demonstrated that both time-stable and time-dependent factors are associated with divergent courses of PTSD.
WTC	Y
Publication Year 2021	
First Author	Mueller, A. K.
Study Aim	Compare symptoms in the FDNY WTC-exposed cohort versus a comparison cohort of non-FDNY, non-WTC-exposed firefighters.
Design	Cross-sectional
Inclusion	WTC-exposed male firefighters and non-WTC exposed male firefighters from
Exclusion	FDNY excluded if last routine health monitoring exam was before 3/1/2018; other departments, if exposure to WTC, then excluded

N	8,466 FDNY; 1,195 CFD; 770 PFD; and 650 SFFD
Screening measure	PTSD Checklist - Specific (PCL-S)
Screening Process	Completed a self-administered health questionnaire with mental health screening measures
N/Percent Positive	7.92 (WTC); 5.36% (CFD); 8.83% (PFD); 4.31% (SFFD)
Main Findings	WTC-exposed firefighters had fewer cognitive concerns compared with non-WTC-exposed firefighters. Unable to estimate associations between WTC exposure and PTSD symptoms or depressive symptoms due to variability between non-WTC-exposed cohorts.
WTC	Y

Publication Year 2015	
First Author	Olden, M.
Study Aim	Assess WTC-related PTSD and other psychiatric symptomatology provided a wealth of data demonstrating the short- and long-term mental health consequences of terrorism
Design	Review (Chapter)
Inclusion	Utility workers deployed to the WTC in the immediate aftermath of the disaster on 9/11 (~3800 utility workers)
Exclusion	N/A
N	2,960
Screening measure	PTSD Checklist (PCL) & clinical interviews
Screening Process	In-person clinical interviews with psychologists (45-60 min) and self-report symptom measures.
N/Percent Positive	8%
Main Findings	Our research also showed that a significant subset of individuals (8%) developed full PTSD in the wake of the 9/11 attacks, while 9.3 % developed subthreshold PTSD. Many of these individuals remitted over time.
WTC	Y

Publication Year 2014	
First Author	Pietrzak, R. H.
Study Aim	Evaluate the nature and determinants of predominant trajectories of PTSD symptoms in WTC responders.
Design	Longitudinal
Inclusion	WTC responders
Exclusion	None
N	10,835
Screening measure	PTSD Checklist Specific-Stressor Version (PCL-S)
Screening Process	Responders were recruited through outreach that included union meetings, mailings, media articles and some 50,000 telephone calls in multiple languages.
N/Percent Positive	Police responders: Severe chronic: Visit 1, 86.4%; Visit 2, 88.4%; Visit 3, 93%; Delayed-onset: Visit 1, 2.6%; Visit 2, 33.1%; Visit 3, 53.3%; Recovering: Visit 1, 45.1%; Visit 2, 20.9%; Visit 3, 4.2%; Non-traditional responders: Severe chronic: Visit 1, 96.4%; Visit 2, 93.8%; Visit 3, 100%; Delayed onset: Visit 1, 6.0%; V2, 62.4%; V3 99.7%; Subsyndromal increasing: V1, 3.7%; V2, 25.3%; V3, 25.1%; Moderate chronic: V1, 82.2%; V2, 68.1%; V3 70.9%; Recovering: V1, 74.4%; V2, 41.1%; V3, 0.5%

Main Findings	Police responders: resistant (77.8%), chronic severe (5.3%), recovering (8.4%) and delayed-onset (8.5%) PTSD symptom trajectories. Among non-traditional responders, a six-class solution was determined to be optimal: resistant (58%), recovering (12.3%), server chronic (9.5%), subsyndromal increasing (7.3%), delayed onset (6.7%), and moderate chronic (6.2%).
WTC	Y

Publication Year 2012	
First Author	Pietrzak, R. H.
Study Aim	Examine the prevalence, correlates, and perceived mental healthcare needs associated with subsyndromal PTSD in police involved in the World Trade Center (WTC) rescue and recovery effort
Design	Cross-sectional
Inclusion	Police involved in WTC attack
Exclusion	None
N	8,466
Screening measure	PTSD Checklist-Specific (PCL-S)
Screening Process	Interview/survey completed as part of the Medical Monitoring program. Completed between 0.7 and 7 years after WTC (initial evaluations), M 3.9 years
N/Percent Positive	5.4% full PTSD and 15.4% for subsyndromal PTSD.
Main Findings	While only 5.4% of police met screening criteria for full WTC-related PTSD, more than 15% met screening criteria for subsyndromal WTC-related PTSD, which was associated with significantly elevated rates of comorbid psychiatric disorders, functional impairment, somatic symptoms, and increased perceived needs for mental healthcare services.
WTC	Y

Publication Year 2020	
First Author	Singh, A.
Study Aim	Explore whether World Trade Center (WTC)-exposure intensity and post-traumatic stress disorder (PTSD) are associated with subjective cognitive change in rescue/recovery workers.
Design	Cross-sectional
Inclusion	Firefighters and EMS workers actively employed by FDBY on 9/11 and arrived at WTC between 9/11 and 9/24/2001
Exclusion	None
N	7,875
Screening measure	Modified version of the PTSD Checklist (PCL-m)
Screening Process	Completed medical monitoring questionnaire between 3/1/2018 and 2/28/2019 that included cognitive function index (outcome measure), indicating whether they had experienced cognitive and functional difficulties in the past year.
N/Percent Positive	8.1%
Main Findings	Strong cross-sectional association between PTSD and elevated CFI scores
WTC	Y

Publication Year 2004	
First Author	Smith
Study Aim	Assess the long-term psychological impact of the aftermath of the 9/11 attacks and to determine needs for continued treatment.
Design	Cross-sectional
Inclusion	WTC rescue/recovery workers
Exclusion	None
N	1,138
Screening measure	Post Traumatic Stress Disorder (PTSD) Symptom Checklist (PCL)
Screening Process	Participants were asked to complete standardized, self-administered questionnaires that screened for symptoms of anticipated post disaster mental health conditions.
N/Percent Positive	20% screened positive; 13% met criteria for PTSD
Main Findings	Approximately half of the participants met preestablished screening criteria for mental health problems. Despite substantial resources directed at the mental health effects of 9/11, only 3% of this population reported having accessed mental health treatment.
WTC	Y

Publication Year 2021	
First Author	Stein, C. R.
Study Aim	Understand the relationship between WTC exposures, mental health, physical health and subjective cognitive functioning, we examined the mediating role of health status in the association between WTC exposure and self-reported cognitive concerns in a multi-site, longitudinal investigation of the WTC General Responder Cohort.
Design	Longitudinal
Inclusion	WTC non-FDNY responders who worked or volunteered in rescue, recovery, demolition, debris cleanup or related supportive services
Exclusion	None
N	16,380
Screening measure	PTSD Symptom Checklist–Civilian (PCL)
Screening Process	Self-reported questionnaires completed at annual medical monitoring visits
N/Percent Positive	21%
Main Findings	Higher WTC exposure is associated with greater cognitive concerns and that this association is operating primarily through markers of mental, but not physical, health. In fully adjusted models, the inclusion of depression, anxiety, PTSD and psychotropic medication use attenuates the association between highest intensity WTC exposure and greatest cognitive concerns.
WTC	Y