



Demystifying Musculoskeletal Disorders (MSDs)

Claims Analysis to Emerging Technologies

July 15, 2021

Meet the Panelists



Sonya Luisoni
Senior Risk Control Manager

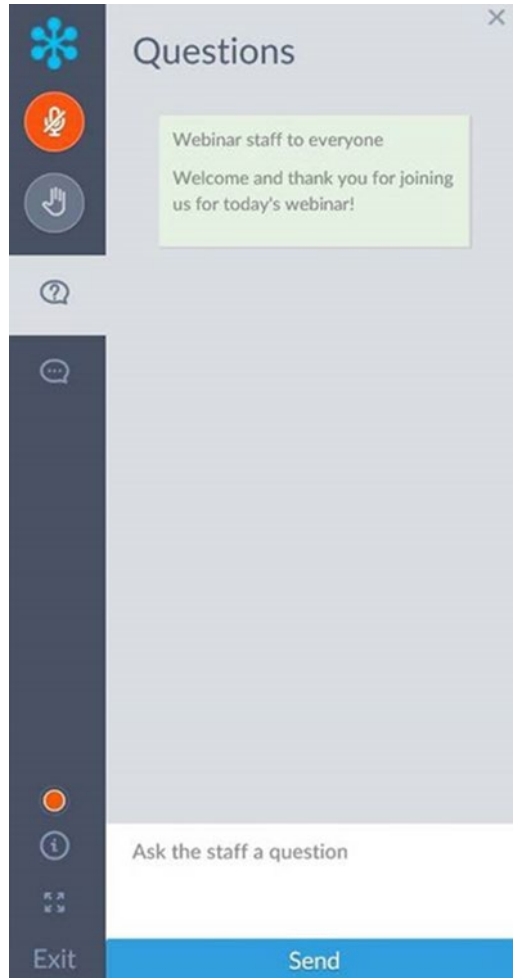


Tanya Parker
Senior Account Manager, Claims



Steve Simon
Senior Risk Control Manager

Webinar Housekeeping

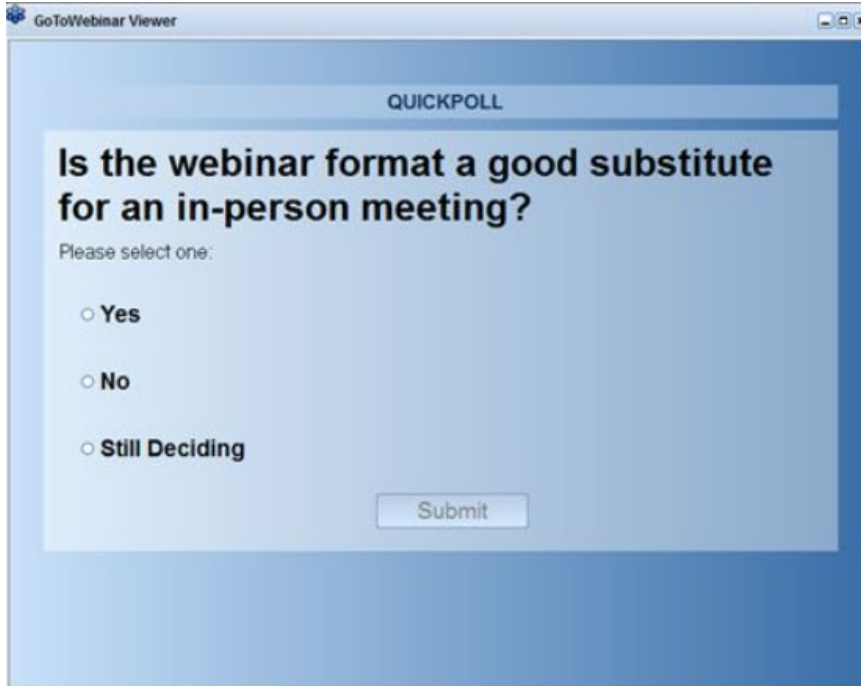


You may submit questions and comments via the Questions panel.

Note: Today's presentation is being recorded and will be provided within 48 hours.



Webinar Housekeeping

A screenshot of a GoToWebinar QuickPoll window. The window has a title bar that says "GoToWebinar Viewer". Inside the window, there is a header "QUICKPOLL". Below the header, the poll question is "Is the webinar format a good substitute for an in-person meeting?". Underneath the question, it says "Please select one:". There are three radio button options: "Yes", "No", and "Still Deciding". At the bottom right of the poll area, there is a "Submit" button.

GoToWebinar Viewer

QUICKPOLL

Is the webinar format a good substitute for an in-person meeting?

Please select one:

- ☐ Yes
- ☐ No
- ☐ Still Deciding

Submit

There will be two poll questions during today's webinar.

When you see the screen prompt please select one of the on-screen multiple choice answers and click submit.



Objectives

- Understanding Musculoskeletal Disorders (MSDs)
- Industry Claims Insights
- Identifying MSDs Within Your Claims Data
- MSD Prevention Strategies
- Leveraging Emerging Technologies
- Questions & Comments



Understanding MSDs

Bureau of Labor Statistics of the Department of Labor
defines MSDs as:

Musculoskeletal system and connective tissue diseases and disorders when the event or exposure *leading to* the case is bodily reaction, overexertion, or repetitive motion.

MSD injuries are not from slips, trips, falls or similar incidents.

What do MSD injuries look like?



- Strains
- Sprains
- Pinched nerves
- Herniated discs
- Meniscus
- Rotator cuff
- Tears
- Ruptures
- Hernias
- Carpal tunnel syndrome
- Raynaud's syndrome
- Sciatica
- Arthritis
- Pain
- Swelling
- Numbness

Implications of MSDs in the Workforce

- High costs to employers
- \$45-54 billion annually
- 70 million doctor office visits annually

MSD injury costs are consistently more severe than the average nonfatal injury or illness.



Implications of MSDs in the Workforce

Bureau of Labor Statistics

- 30% of total days away from work (DAFW)
- 50% of all MSDs = Retail Trade + Manufacturing + Healthcare & Social Assistance
- 52% of all DAFW cases for nursing assistants are MSDs

Median DAFW is higher when compared to other non-fatal injuries within certain industry sectors or injury types.





Identifying MSDs in Claims Data

Poll Question #1

Do you run and analyze your claims data currently?



Safety National Claims Insights

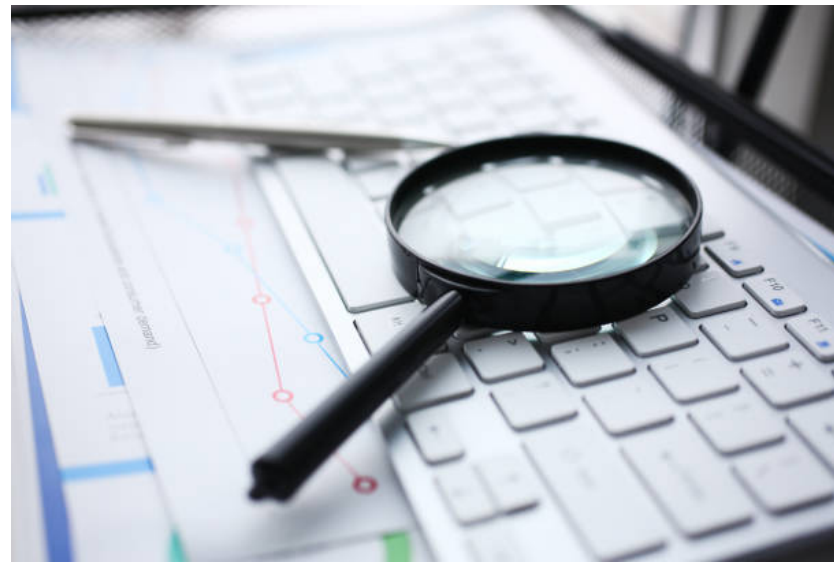
What we are seeing in our Safety National data

- All graphs presented were developed by our Data Analytics Department
- Safety National reported claims related to work-related MSDs
- Data evaluated through 5/17/21
- Analysis covers claims over a 10-year period to include Excess Workers' Compensation (WC), Large Deductible WC and Primary WC
- Nearly 700,000 claims were reviewed
- COVID-19 claims were removed from the data



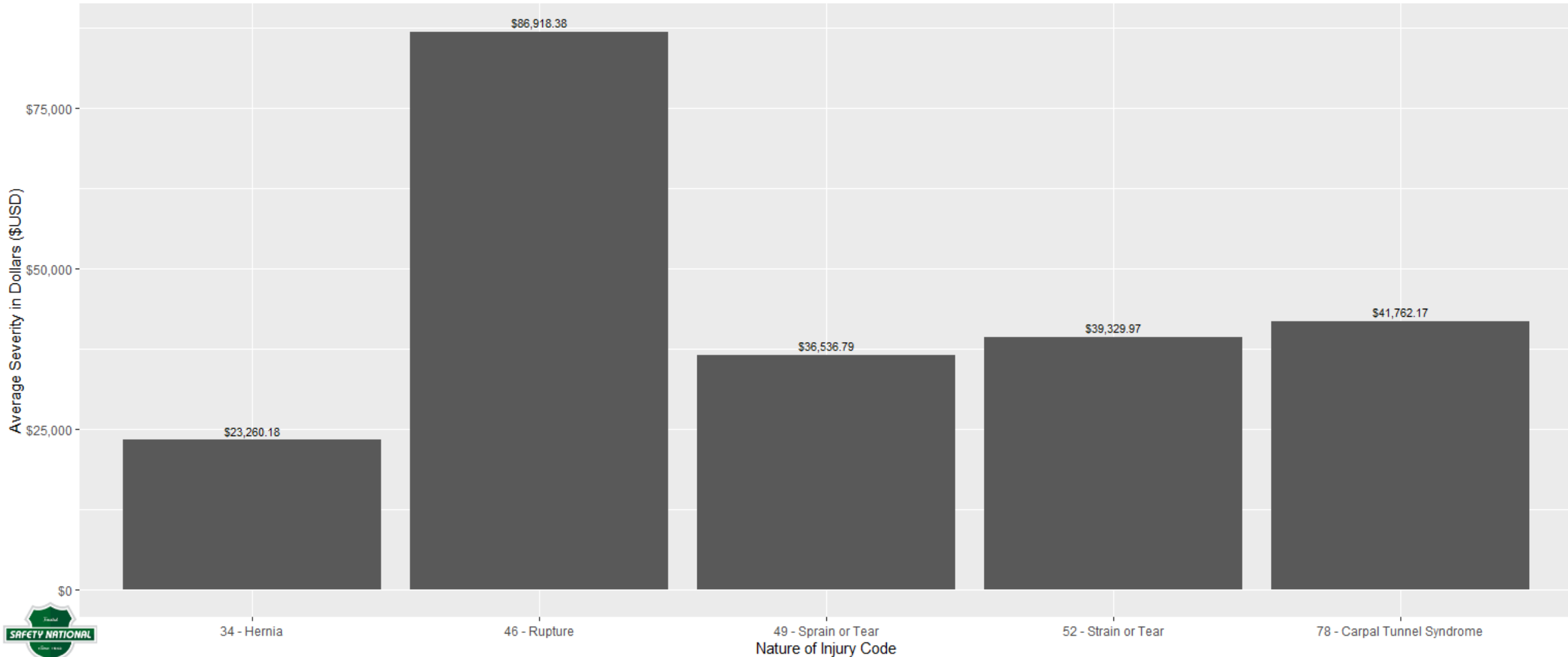
Ways to Interpret/Analyze Your Data

- What types of claims are you having the most?
- What body parts are the claims coming from the most?
- What causes of the claims are the most prevalent?



Severity by Nature of Injury

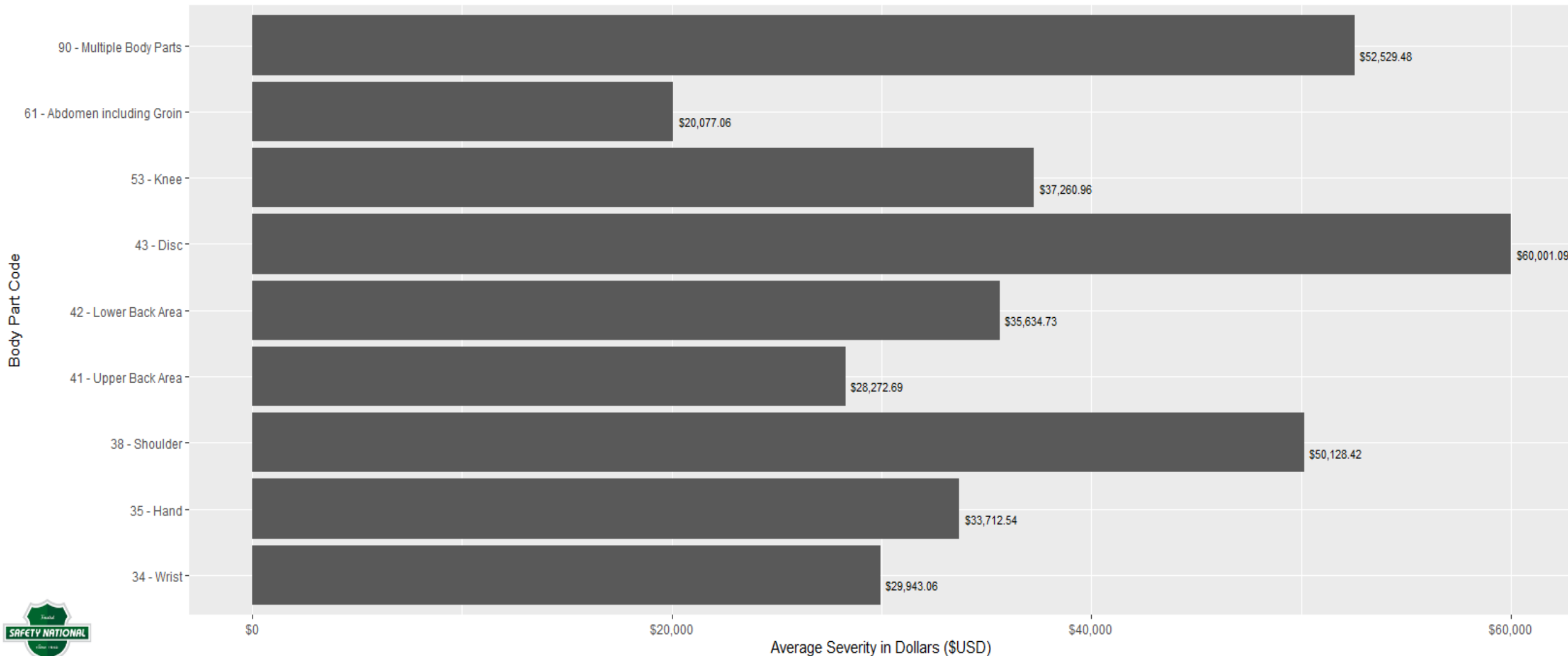
Cost of MSD Claims by Specific Nature of Injury
Indemnity Claims



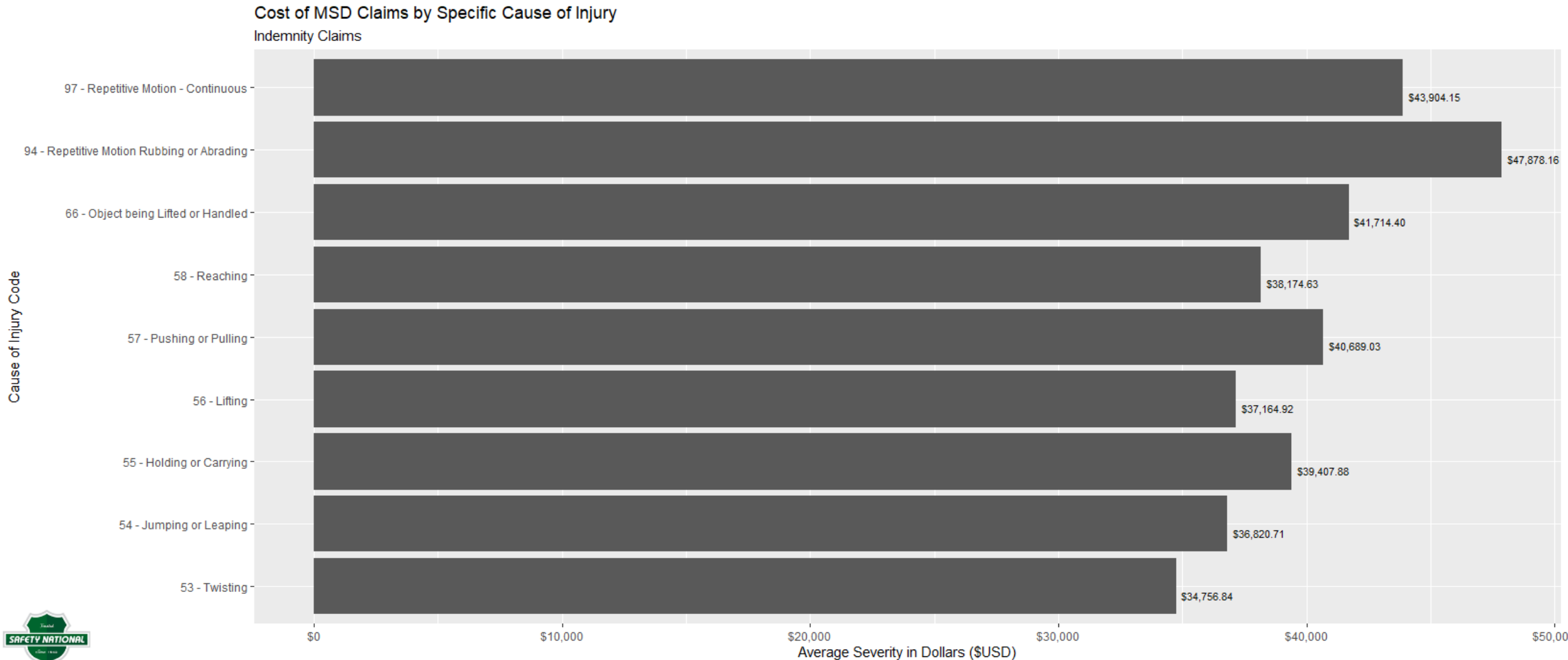
Severity by Body Part

Cost of MSD Claims by Specific Body Part (Top 9)

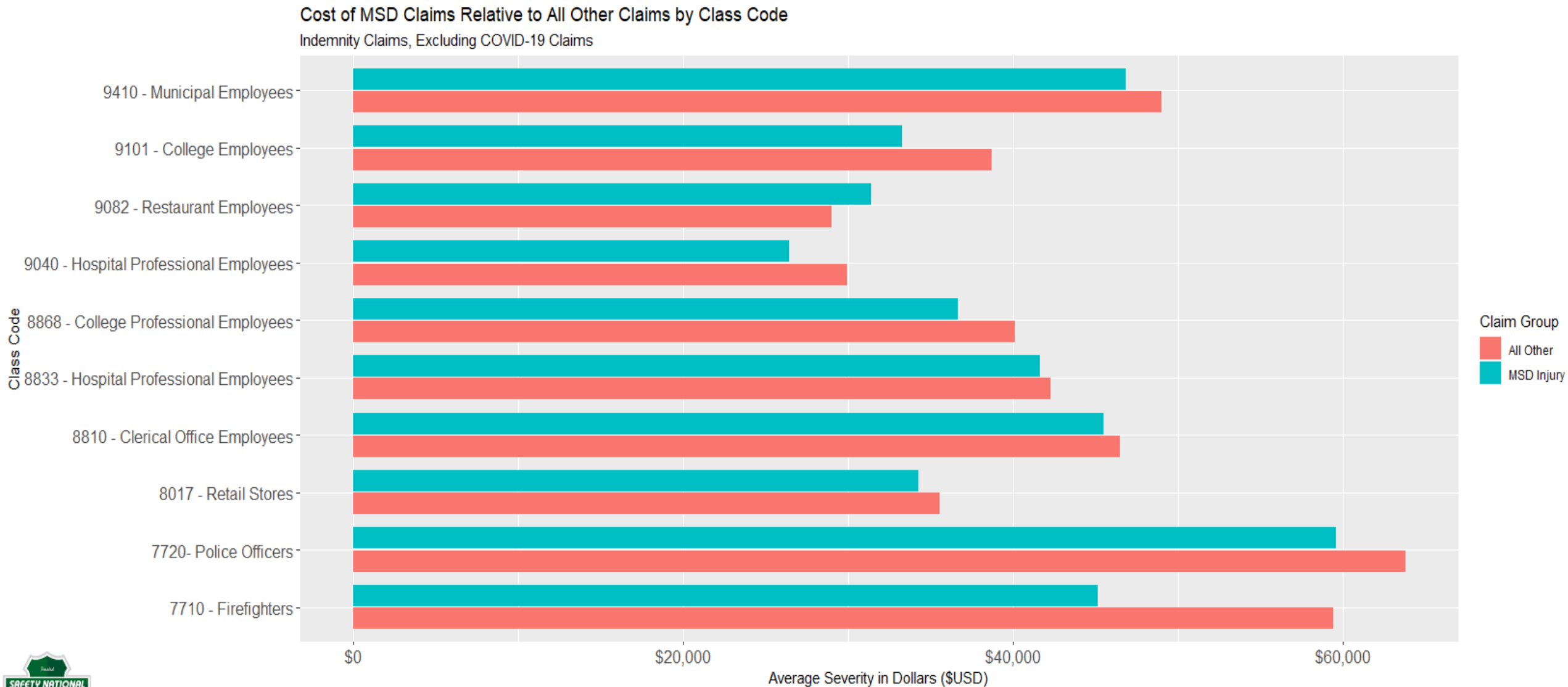
Indemnity Claims



Severity by Cause of Injury



Severity by Class Code



Ways to Interpret/Analyze Your Data

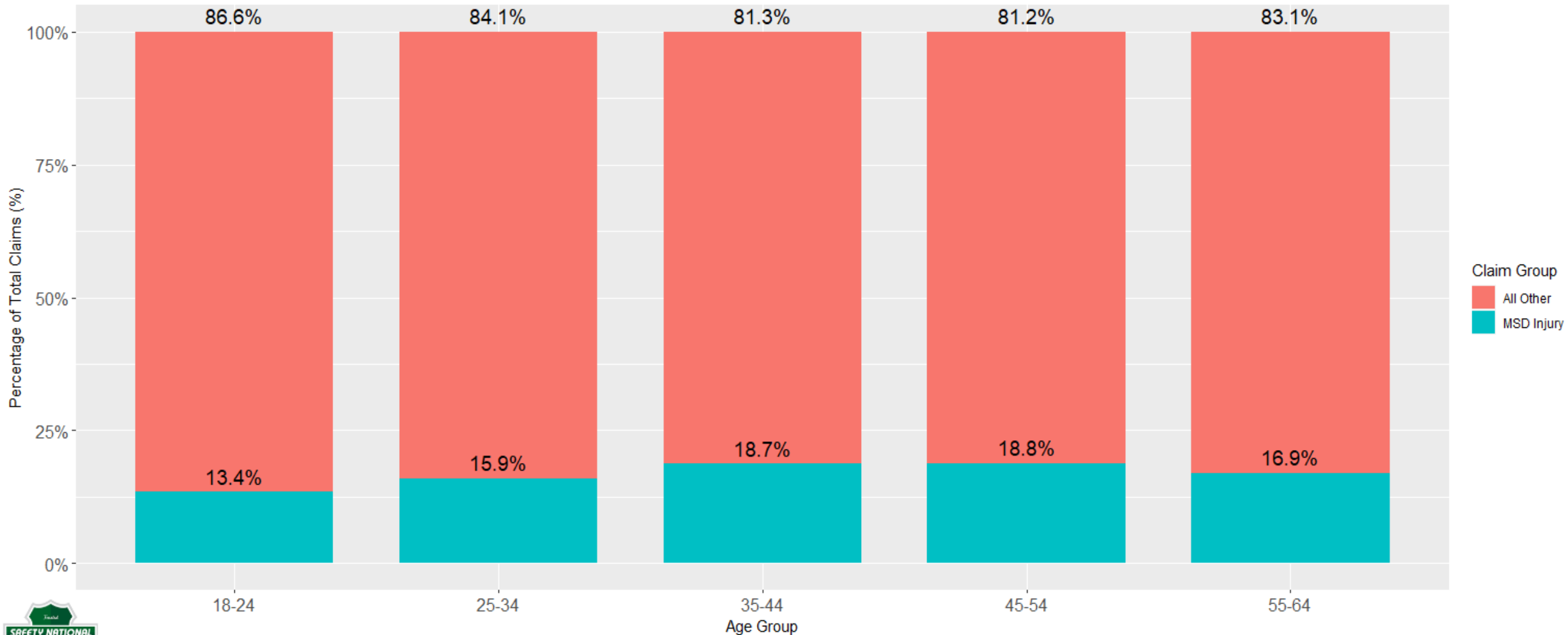
- Is your workforce's age a factor in your MSDs?
- Do your hiring practices or employee training programs need to be revised?



Claimant Age Grouping by Claim Types (All Claims, Excluding COVID-19 Claims)

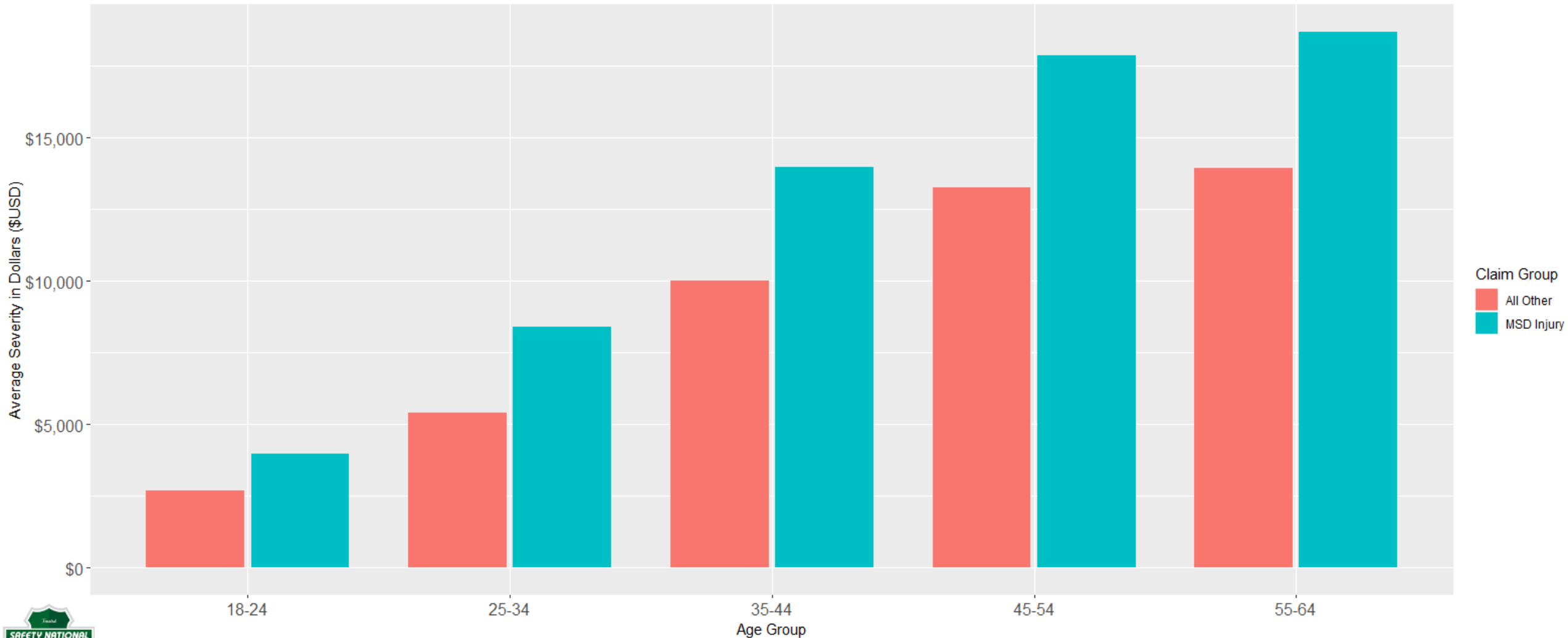
Ratio of MSD Claims Relative to All Other Claims by Claimant Age Grouping

All Claims, Excluding COVID-19 Claims



Severity by Employee Age vs. All Other Claims (All Claims, Excluding COVID-19 Claims)

Cost of MSD Claims Relative to All Other Claims by Age Grouping
All Claims, Excluding COVID-19 Claims



Ways to Interpret/Analyze Your Data

- Where are your claims coming from?
- Data limitations
 - Information gaps
 - Data clean-up





MSD Prevention Strategies

Having the “right” conversations

- Who knows about the largest risk areas?
- Engage employees by soliciting their expertise
- Demonstrate commitment
- Involve Human Resources and Wellness Program



Poll Question #2

Does your organization manage both ergonomic and individual risk factors?



Targeting the “right” risk factors

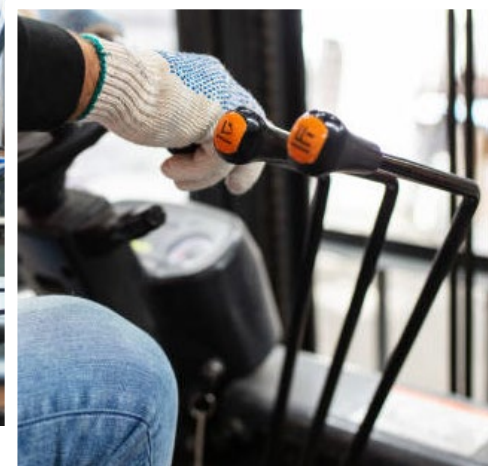
Ergonomic Risk Factors

vs.

Individual Risk Factors



Ergonomic Risk Factors





Ergonomic Risk Factors

Event

- Twisting
- Jumping
- Holding
- Carrying
- Lifting
- Climbing
- Bending
- Pushing
- Pulling
- Crawling
- Reaching
- Overhead work

Exposure

- Awkward postures
- Repetitive Motion
- Duration
- Pace of work
- Force vs. Recovery
- Overexertion
- Vibration
- Temperature
- Monotonous

Ergonomic Risk Strategies

Engineering Controls

- Ergonomic workplace redesign
- Account for capabilities & limitations of workforce
- Accommodate employees with functional limitations

Administrative Controls

- Looking at work practices and management policies
- Adjusting work schedules and workloads
- Temporary measures until engineering controls can be implemented or if not feasible

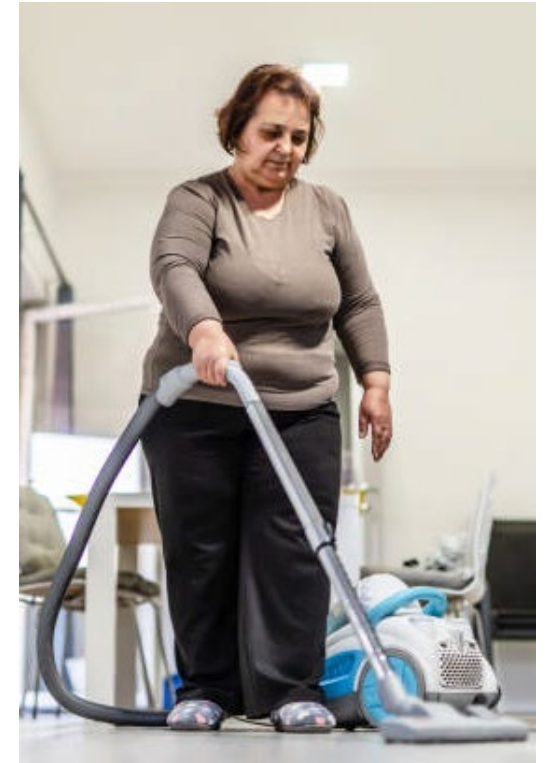
PPE

- Evidence of PPE effectiveness in MSD injury reduction is inconclusive
- May decrease one exposure but increase another



Individual Risk Factors

- Physical fitness
- Weight
- Arthritis
- Perception of workplace
- Poor work practices



Individual Risk Strategies

- Problem-solving with employees
 - Recognize and reduce MSDs risks
 - Understand workplace perceptions
- Healthcare management strategies and policies
- Wellness Programs
 - Exercise
 - Weight management
 - Arthritis
- Disability management
- Return-to-work policies





Emerging Technologies

Identify, Monitor, Quantify & Mitigate



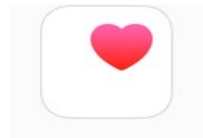
AI Computer Vision Utilizing Videos



fitbit



Samsung Health



iOS-Health

Wearable Sensors



Exo-Suits

Identify, Monitor, Quantify & Mitigate

- IMU (inertial measurement unit) sensors
 - Machine learning algorithms compute walking steps, energy expenditure, sleep patterns, joint movement and falls.
- Physiological sensors/biosensors
 - Optical or PPG (Photoplethysmography) sensors
 - Bioimpedance sensors
 - EEG, EMG
- Artificial intelligence (AI) computer vision
 - Collectively measure various workers in real-world operational environments
 - Motion capture can provide ergonomic reports that detail the underlying risk factors for ergonomic scores (e.g., REBA, NIOSH)



Smartphone companions

**ECG / EKG &
Blood Pressure
Wearable Sensors**



Identify, Monitor, Quantify & Mitigate

- Bioimpedance sensors
 - Electrodermal (EDA)
 - Galvanic skin response (GSR) sensors can help detect for hydration, heat stress, pain, etc.
- Artificial intelligence (AI)
 - Data from Artificial intelligence (AI) using computer vision (apps) can help identify and justify ergonomic improvements
- Exoskeletons
 - Where automation is not feasible
 - Exoskeletons empower workers to perform tasks more efficiently and effortlessly using the specially-engineered power suits



 Kinetica Labs

Lowes and Virginia Tech develop exosuit designed to help retail employees



<http://eksobionics.com/eksoworks/>

Any Comments & Questions?

*Thank
you*