

# Driving Risk: Trends in Motor Vehicle Accidents

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Assistant Actuary  
NCCI



*Name That Tune ...*

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# The Most Dangerous Part of Many Jobs



Collision claim once every **18 years**



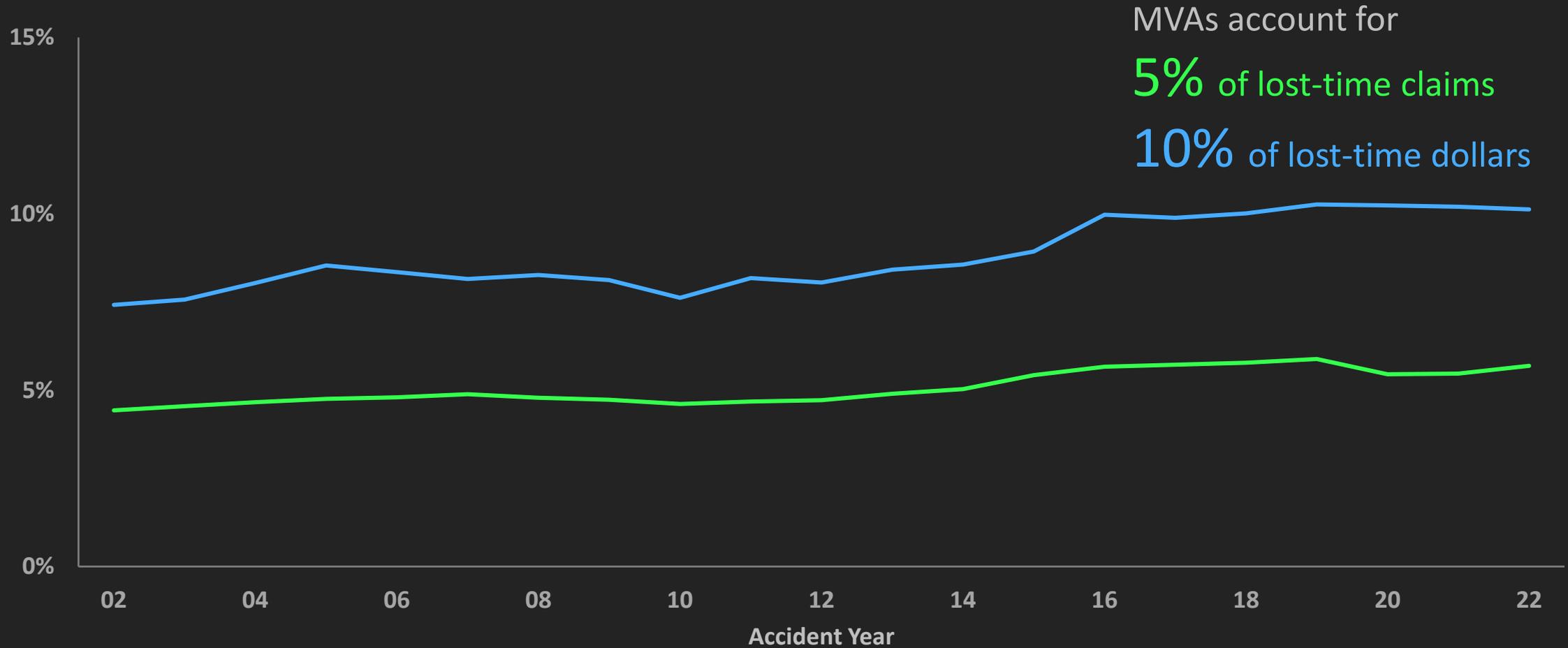
Most drivers get in **3–4 crashes** during a lifetime



**30% of jobs** require some driving

# Motor Vehicle Accident (MVA) Claims Over Time

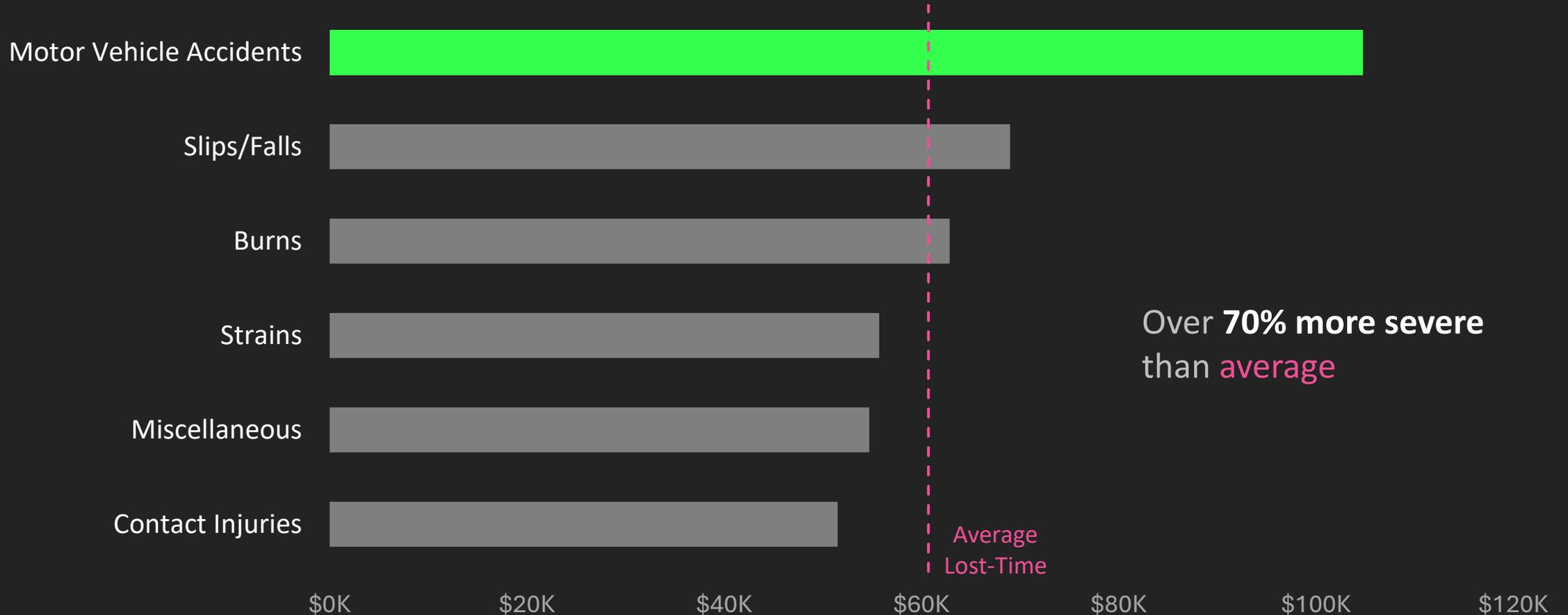
Share of **Claims** vs. **Total Incurred Losses**



Source: Based on NCCI's Statistical Plan data for lost-time claims, developed to ultimate  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# MVAs Are the Most Expensive Type of Claim

Which cause of injury has the highest severity?



Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

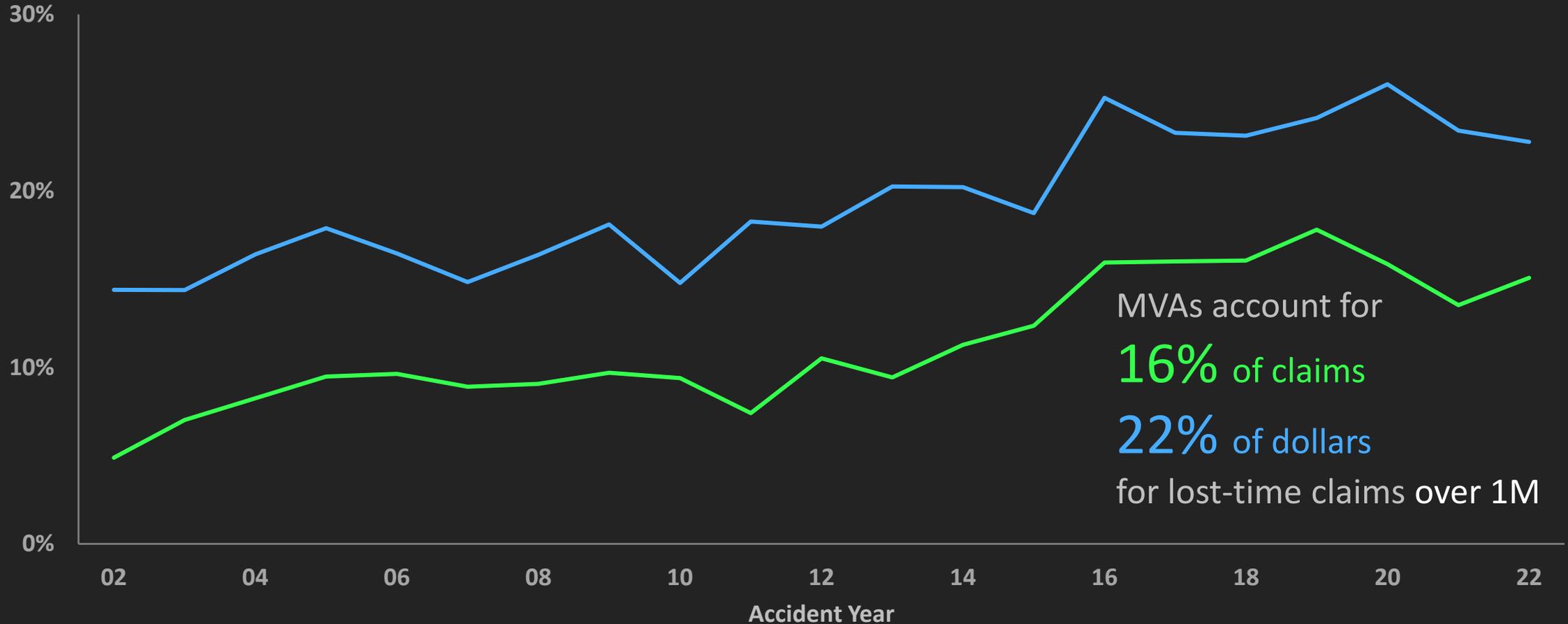
# Motor Vehicle Accidents

1 Cost over **70% more** on average



# MVAs Are a Growing Share of Large Claims

Share of **Claims** vs. **Total Incurred Losses** Over \$1M



Source: Based on NCCI's Statistical Plan data for lost-time claims, developed to ultimate  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Motor Vehicle Accidents

1 Cost over **70% more** on average

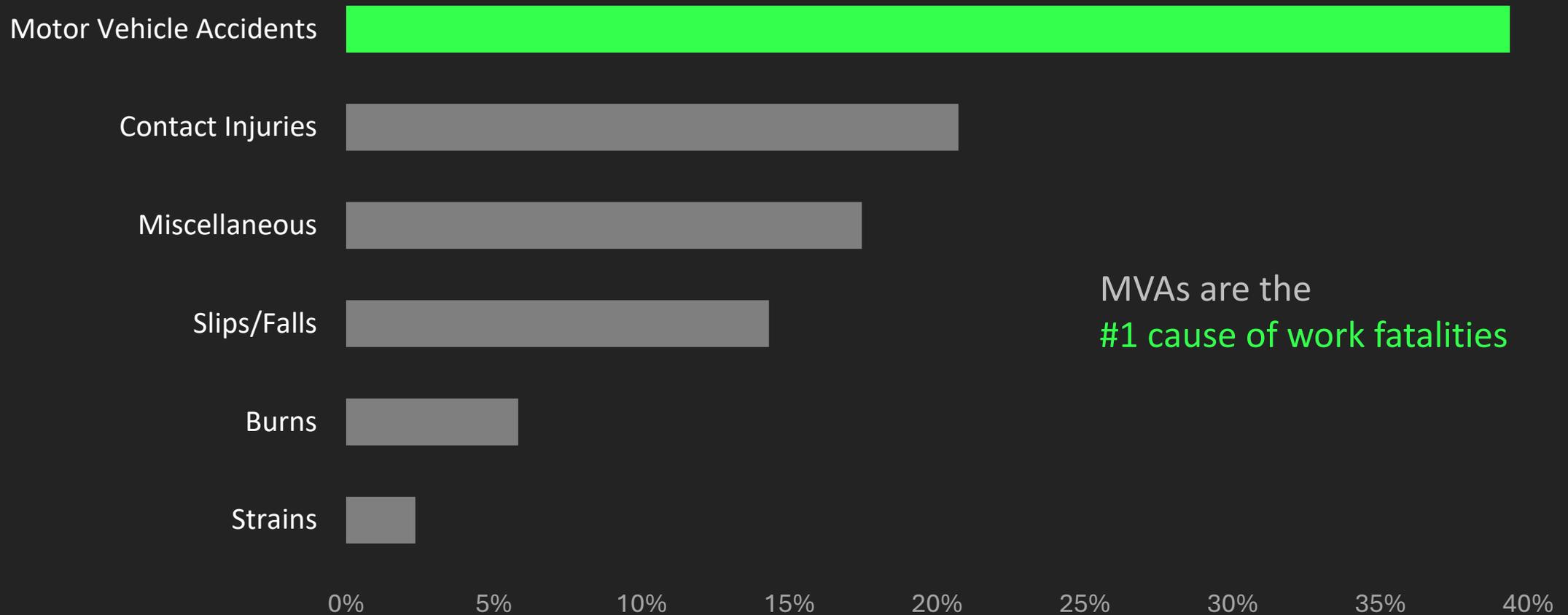
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2 Account for **1 in 5** dollars from claims over \$1M



# Leading Cause of Work Fatalities

Among fatal claims, which causes are most common?



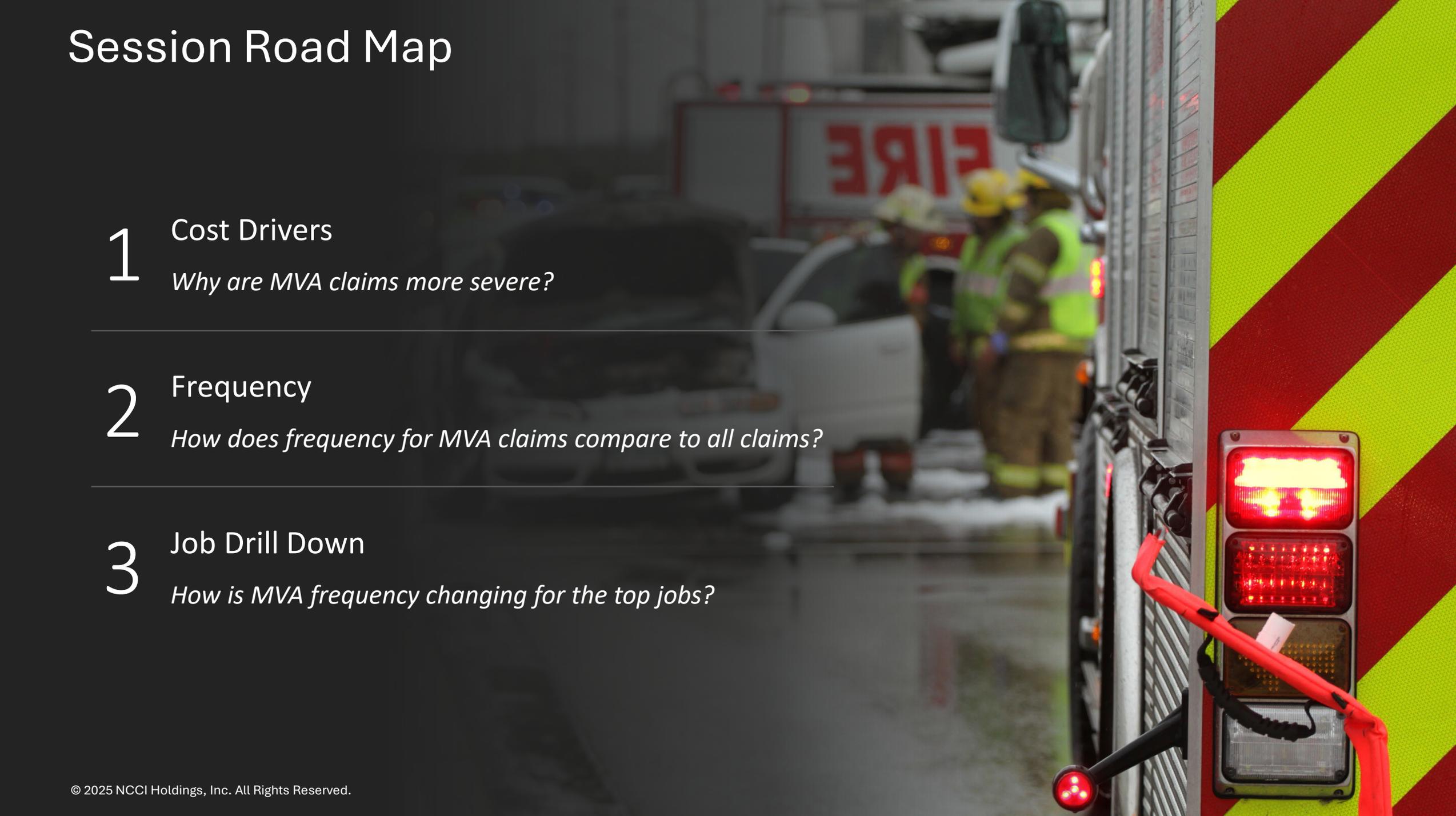
Source: Based on NCCI's Statistical Plan data for Accident Years 2002–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Motor Vehicle Accidents

- 1 Cost over **70% more** on average
- 2 Account for **1 in 5** dollars from claims over \$1M
- 3 Cause **4 out of every 10** work-related fatalities



# Session Road Map



1 Cost Drivers  
*Why are MVA claims more severe?*

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2 Frequency  
*How does frequency for MVA claims compare to all claims?*

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3 Job Drill Down  
*How is MVA frequency changing for the top jobs?*

# Severity Over Time

Total Incurred—MVA vs. All Lost-Time Claims



Source: Based on NCCI's Statistical Plan data for lost-time claims, developed to ultimate and adjusted to average weekly wage and PHC Chain-Weighted Price Index of latest year  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Severity Over Time: Indemnity vs. Medical

Incurred—MVA vs. All Lost-Time Claims

## Indemnity



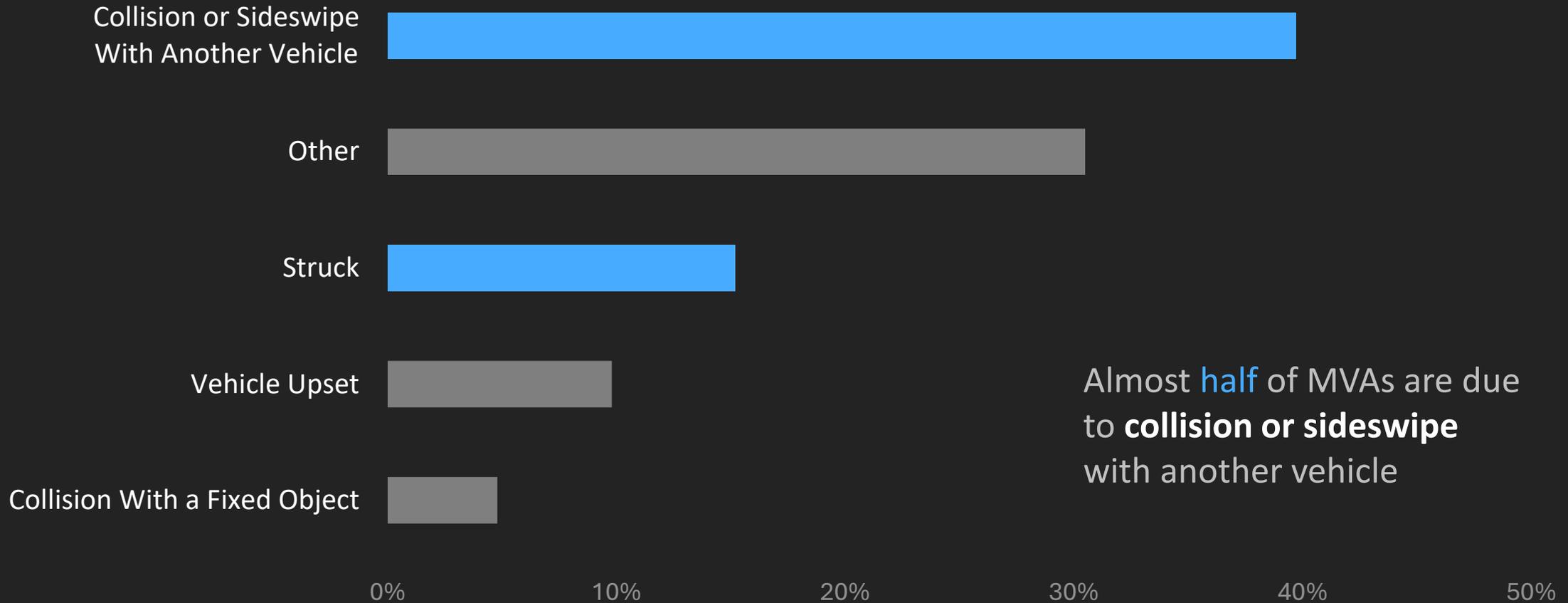
## Medical



Source: Based on NCCI's Statistical Plan data for lost-time claims, developed to ultimate and adjusted to average weekly wage and PHC Chain-Weighted Price Index of latest year. Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims.

# MVA Causes of Injury

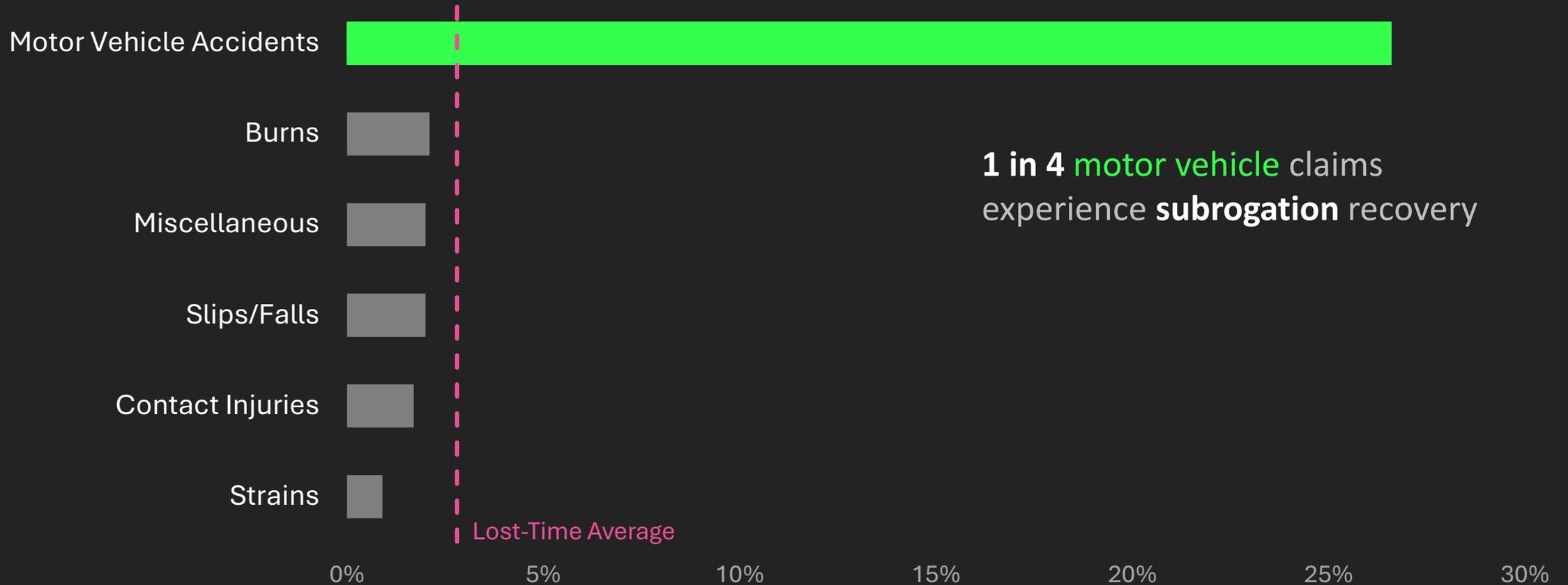
Among MVA claims, which causes are most common?



Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Highest Rate of Subrogation

For each cause of injury, how often are claims subrogated?



Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022  
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# High-Energy Impacts



Unlike other workplace accidents



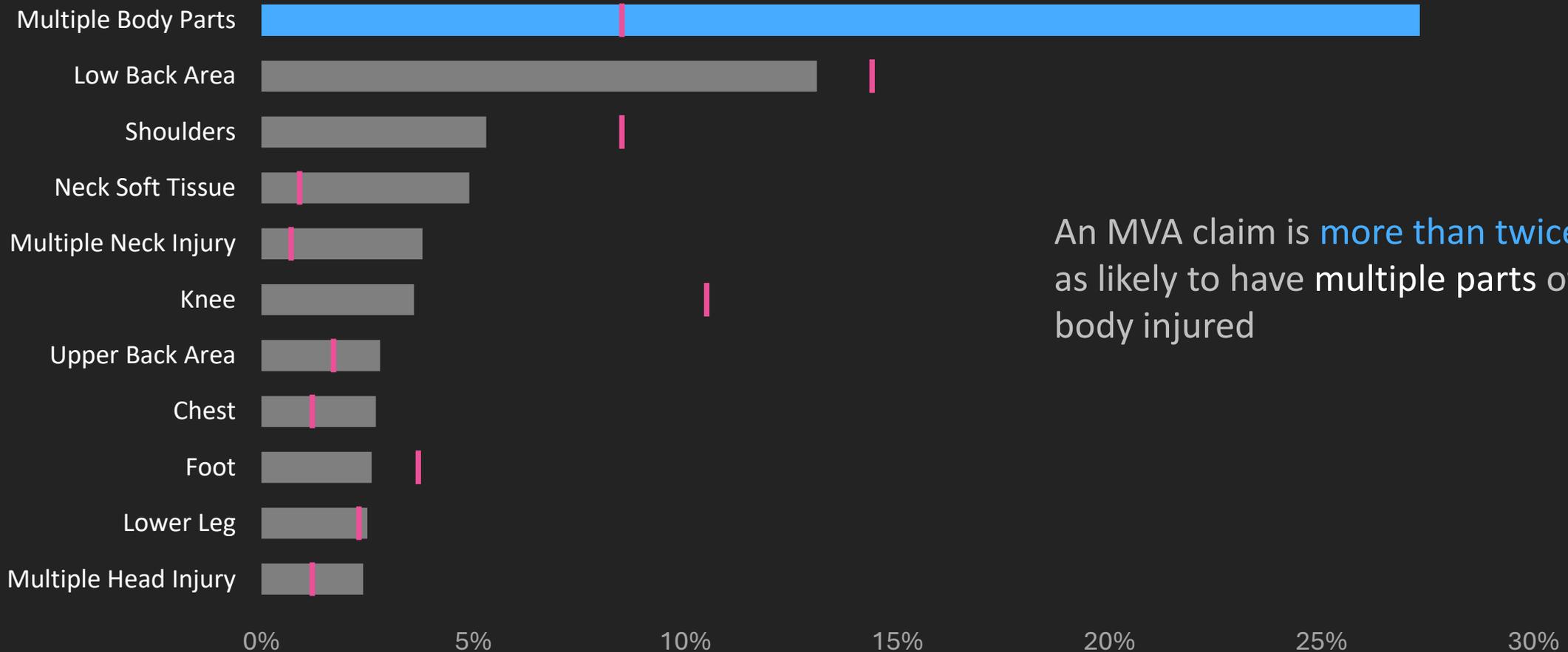
Crash Energy =  $0.5 \times \text{Mass} \times \text{Velocity}^2$



Speed matters most

# Multiple Injuries Are Most Frequent for MVAs

For MVA vs. **All Lost-Time Claims**, which injuries are most common?

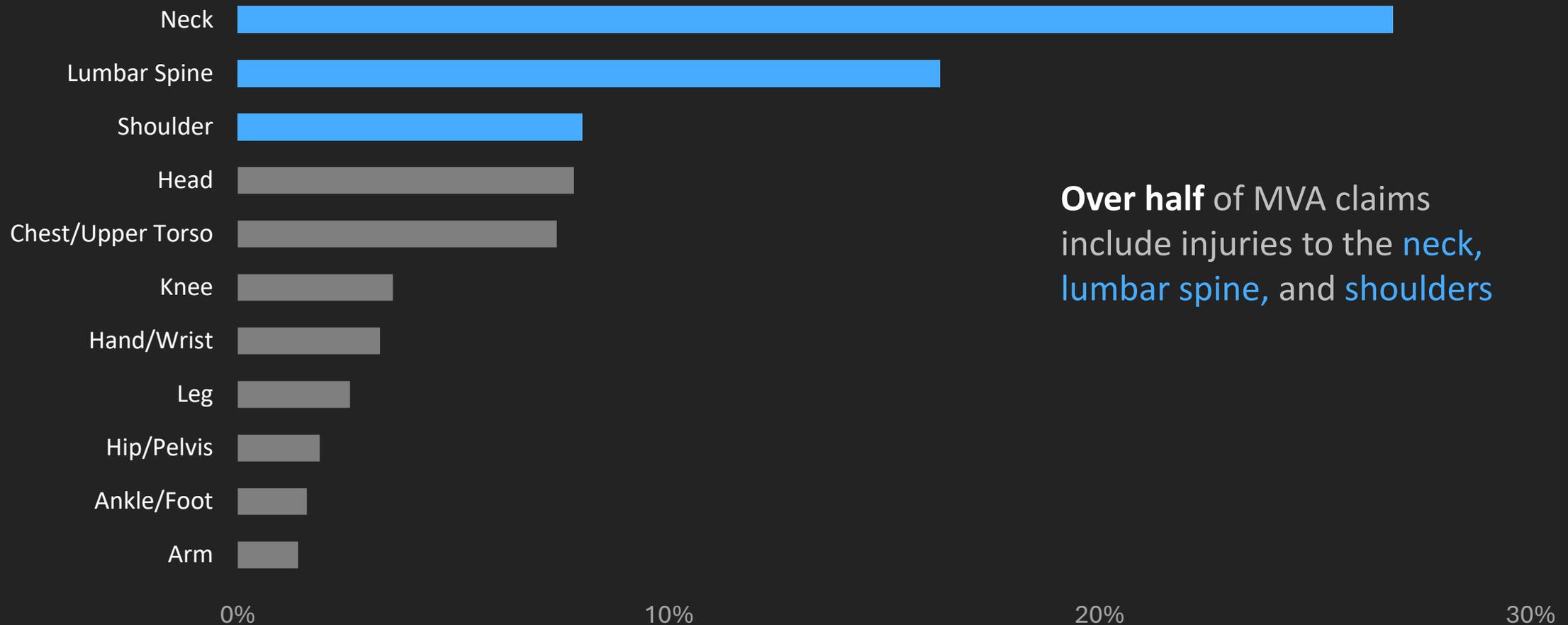


An MVA claim is **more than twice** as likely to have multiple parts of body injured

Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Parts of Body Most Often Injured Together

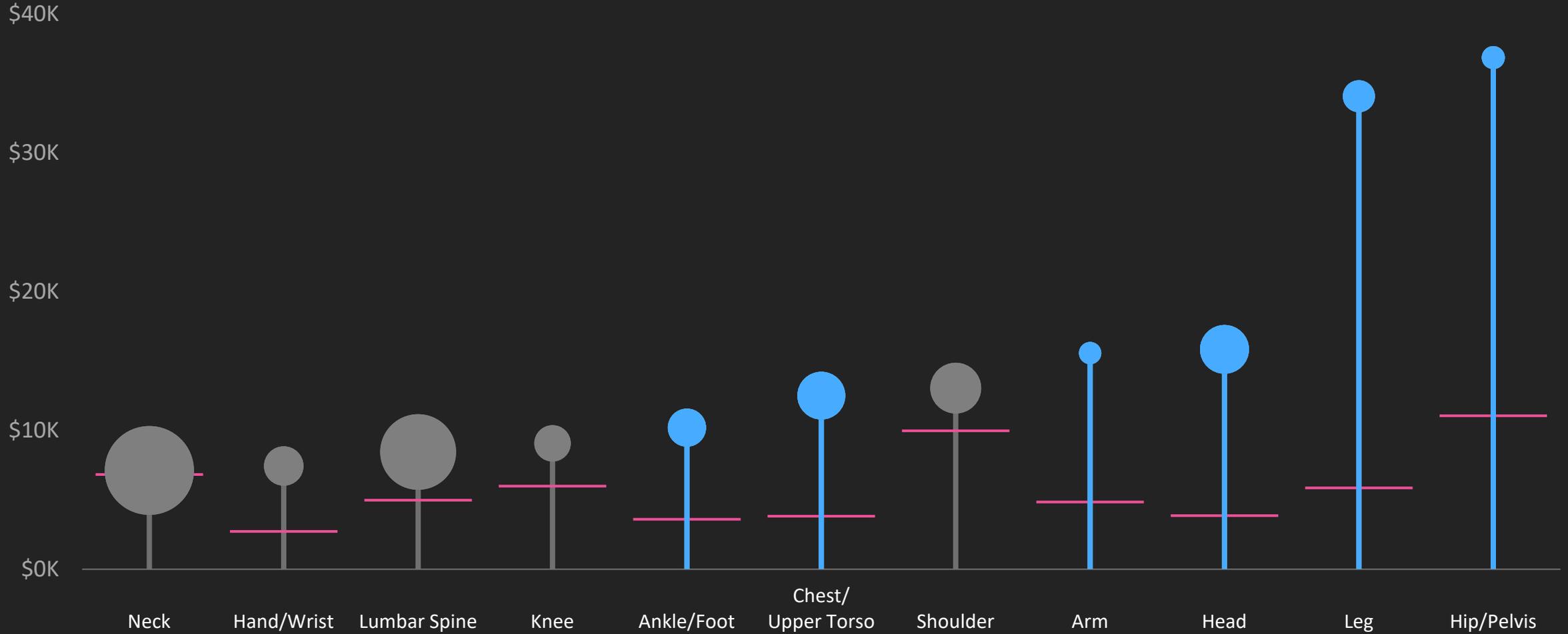
For MVA claims with multiple injuries, which areas are most common?



Source: Based on NCCI's Medical Data Call for lost-time claims in Accident Years 2012–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Medical Severity

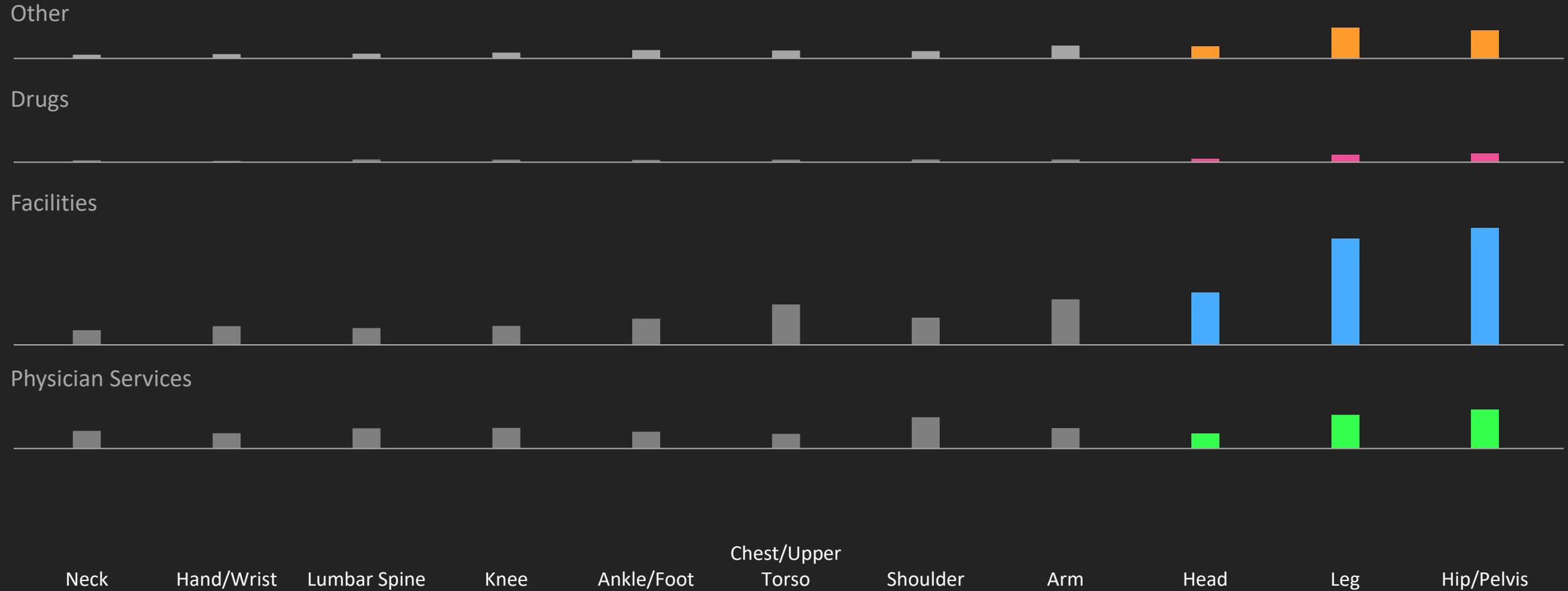
Based on Payments—MVA vs. All Lost-Time Claims



Source: Based on NCCI's Medical Data Call for lost-time claims in Accident Years 2012–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Medical Severity by Medical Cost Category

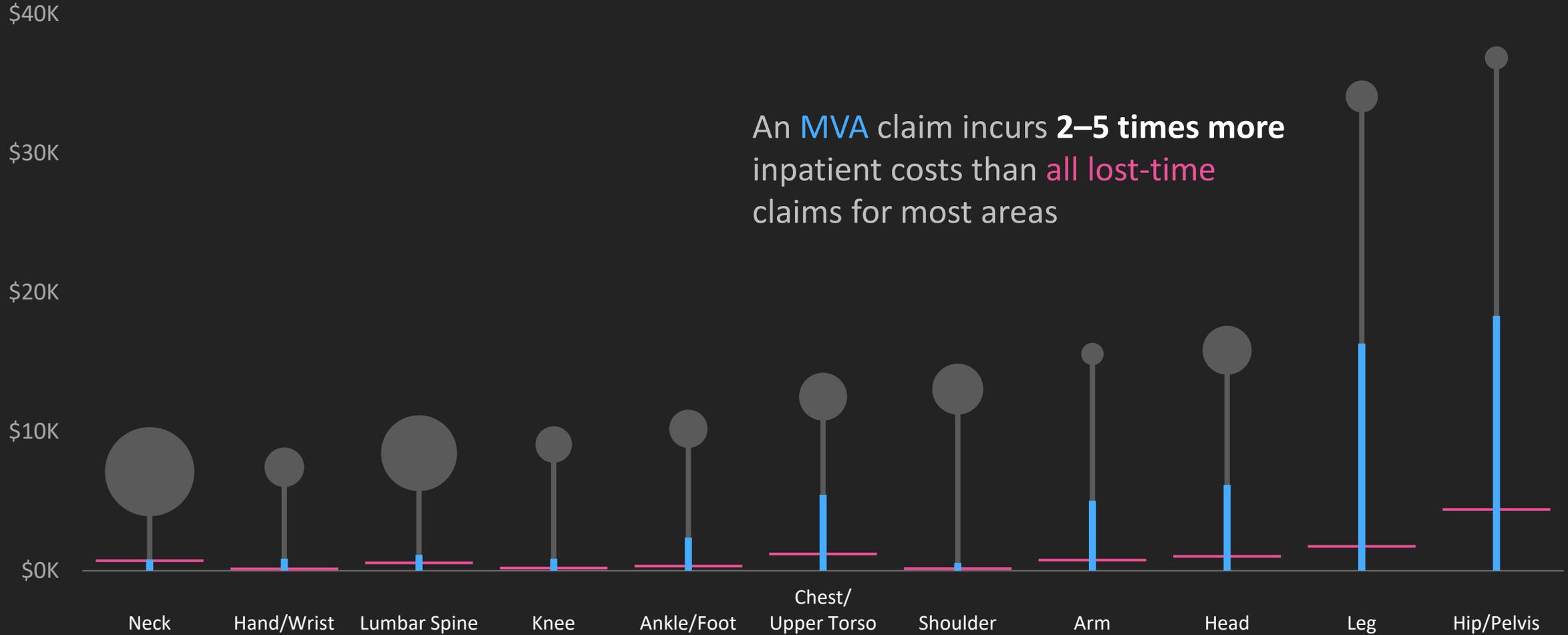
Based on Payments—MVA Claims



Source: Based on NCCI's Medical Data Call for lost-time claims in Accident Years 2012–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Inpatient Paid per Claim

MVA vs. All Lost-Time Claims



Source: Based on NCCI's Medical Data Call for lost-time claims in Accident Years 2012–2022  
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# MVA Claims Cost More



High-energy accidents



Injuries to multiple areas

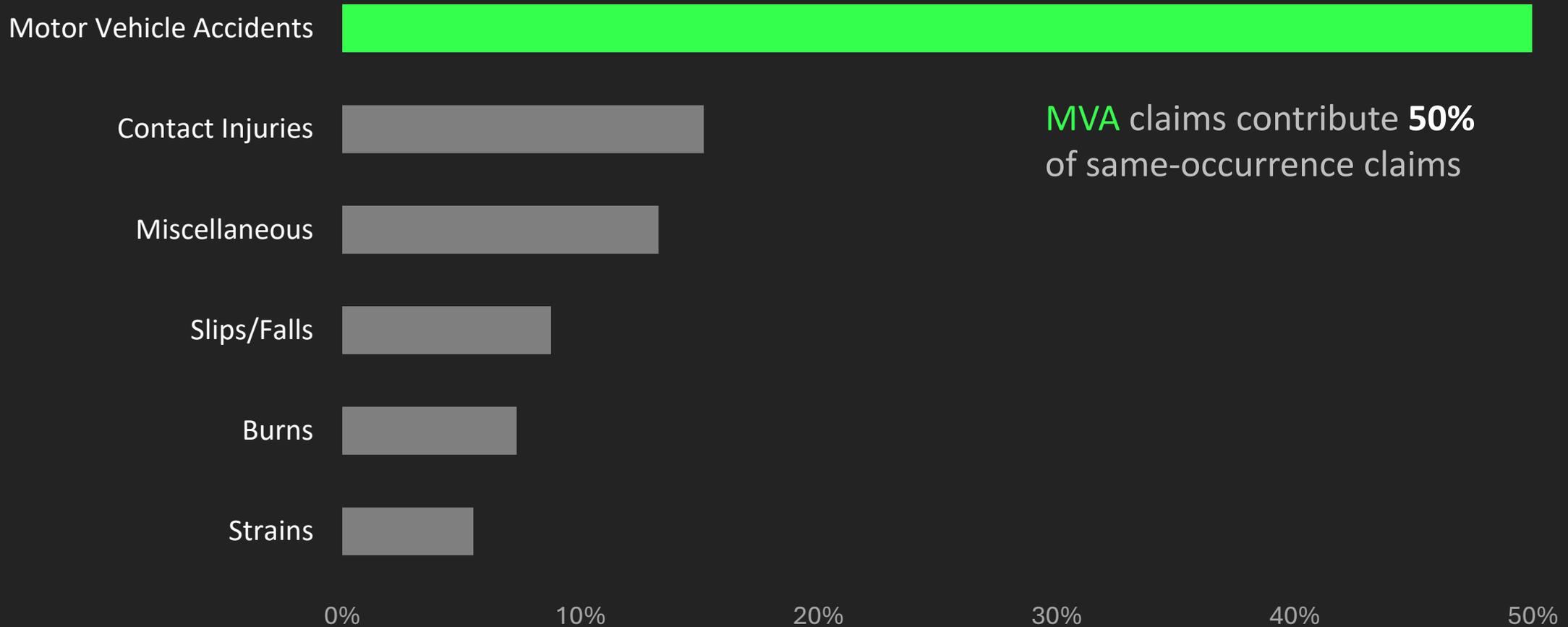


More harmful injuries



# Most Likely to Result in Multiple Claims

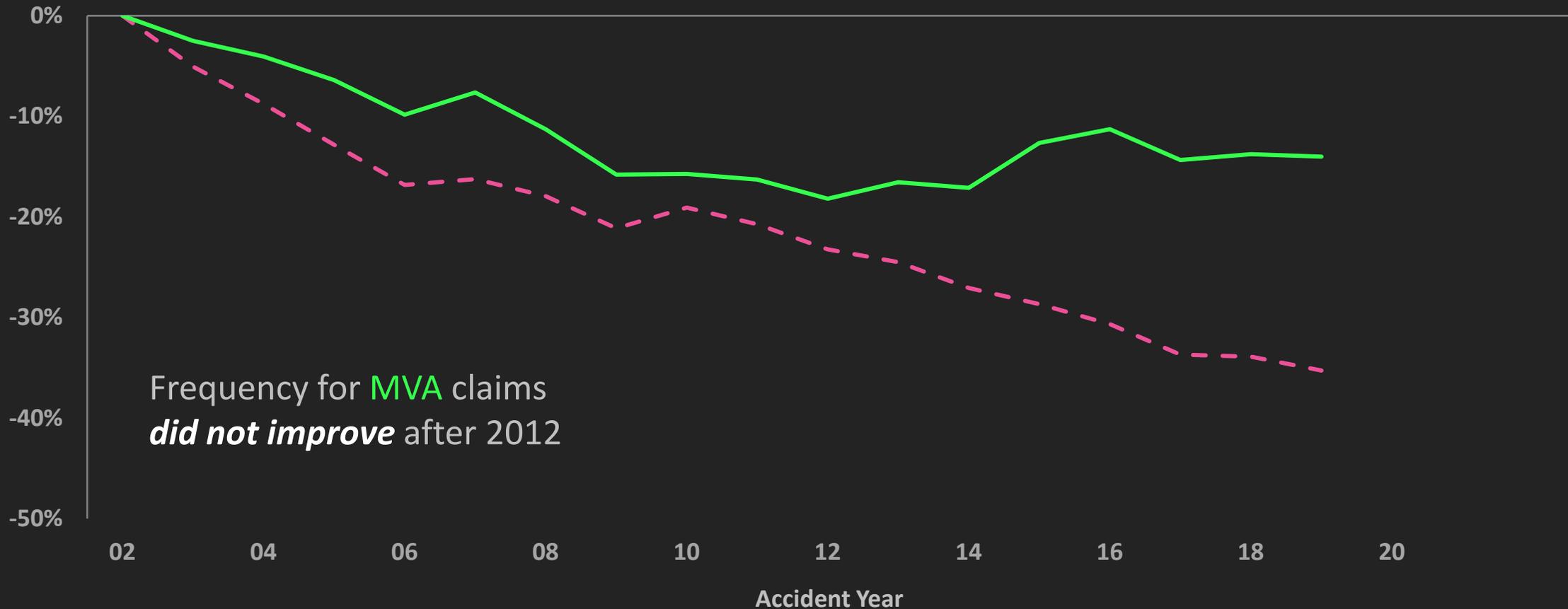
Among multiple claims from a single accident, which causes are most common?



Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022  
Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# MVA Frequency Trend Stopped Improving

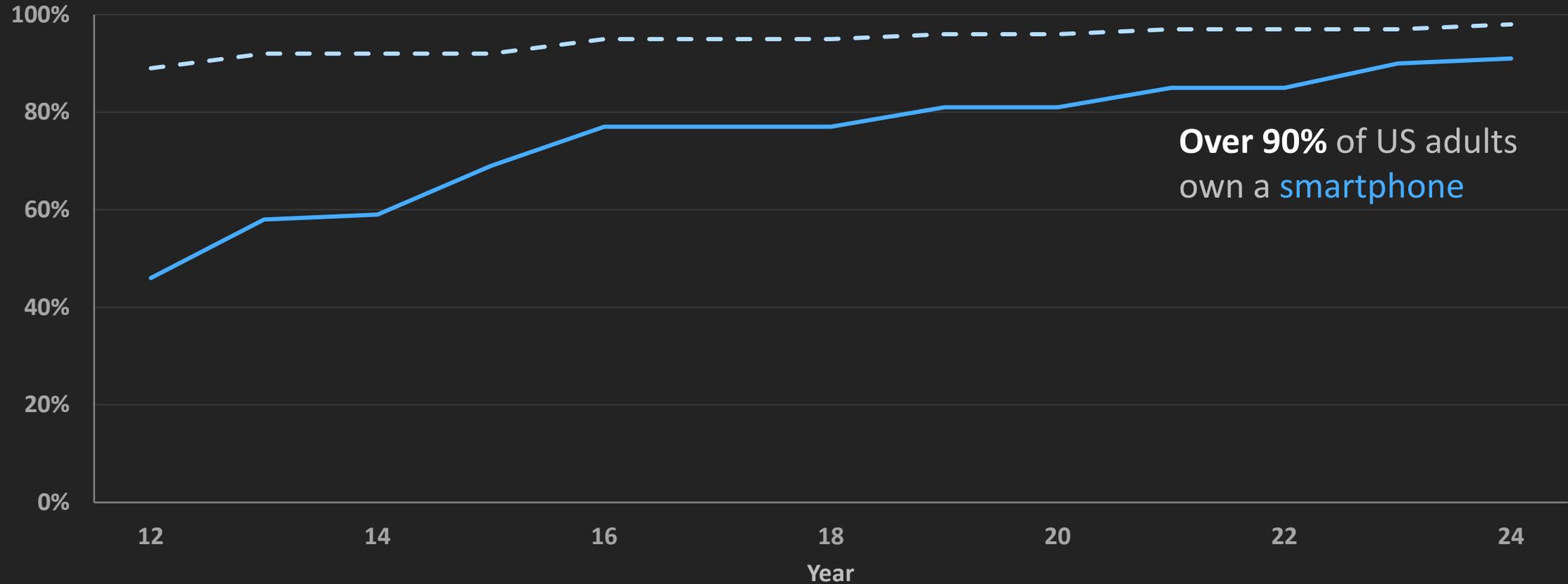
Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All



Source: Based on NCCI's Statistical Plan data, developed to ultimate; measured as lost-time claims per \$1M pure premium adjusted to current wage and voluntary pure premium level. Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims.

# Mobile Phone Ownership

Cellphone vs. Smartphone



Source: Pew Research Center

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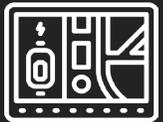
# Distracted Driving



Causes 30% of traffic fatalities

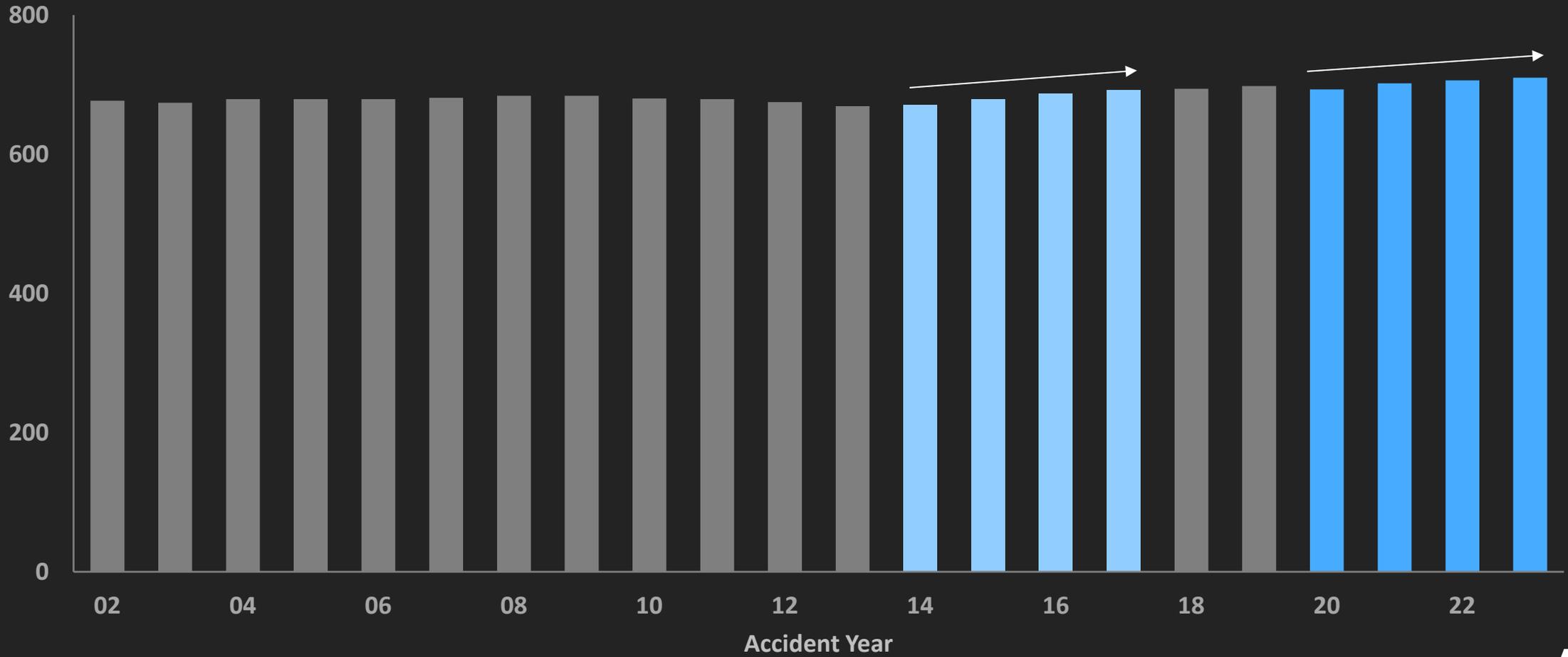


Reduced by bans on handheld use



Increasingly due to infotainment

# Drivers per 1K Total Population Continues to Increase

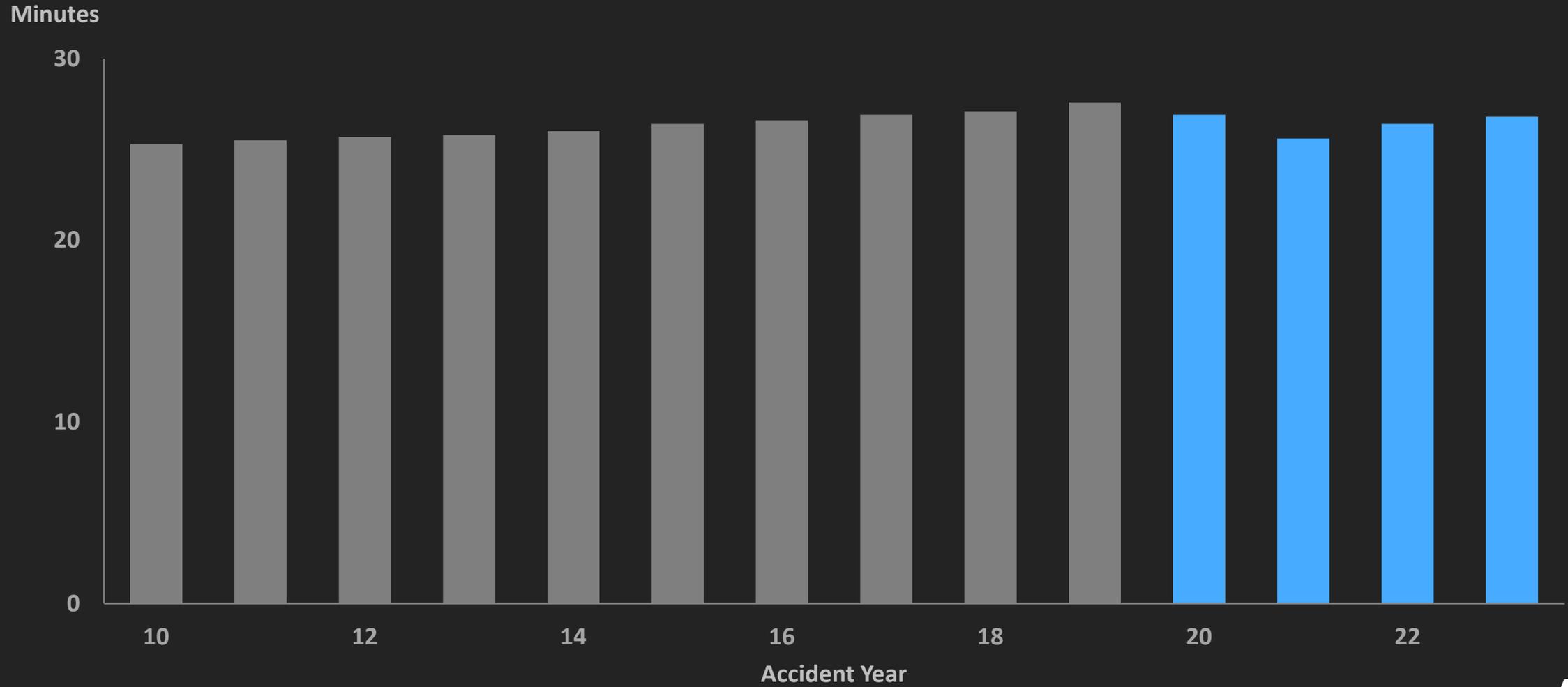


Source: US Department of Transportation–Federal Highway Administration

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# The Average Commute Is Increasing Again

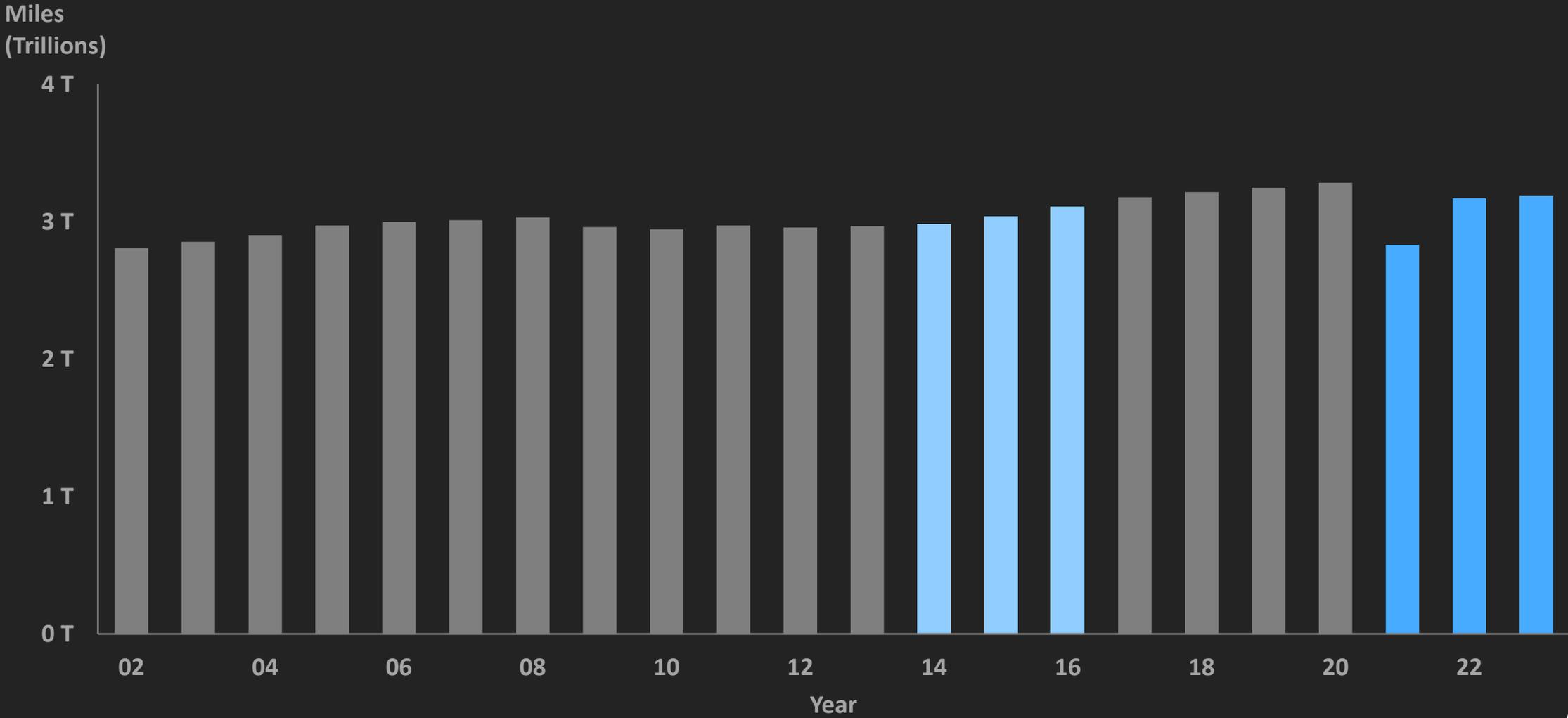


Source: US Census Bureau

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# Annual Vehicle Miles Traveled Have Recovered



Source: National Highway Traffic Safety Administration, 12-month total

# MVA Frequency Trend Stopped Improving

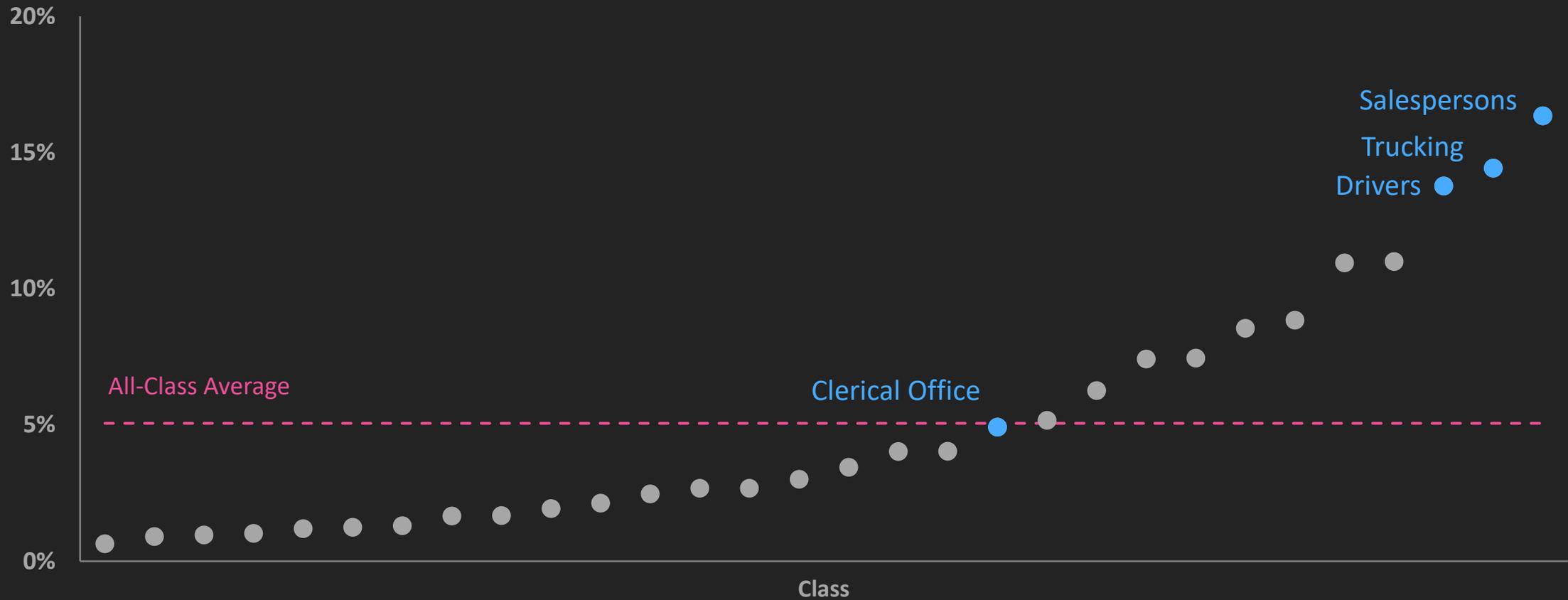
Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All



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# Share of Claims Due to Motor Vehicle Accidents

In the 30 classes with the most lost-time claims overall, how many are due to MVAs?

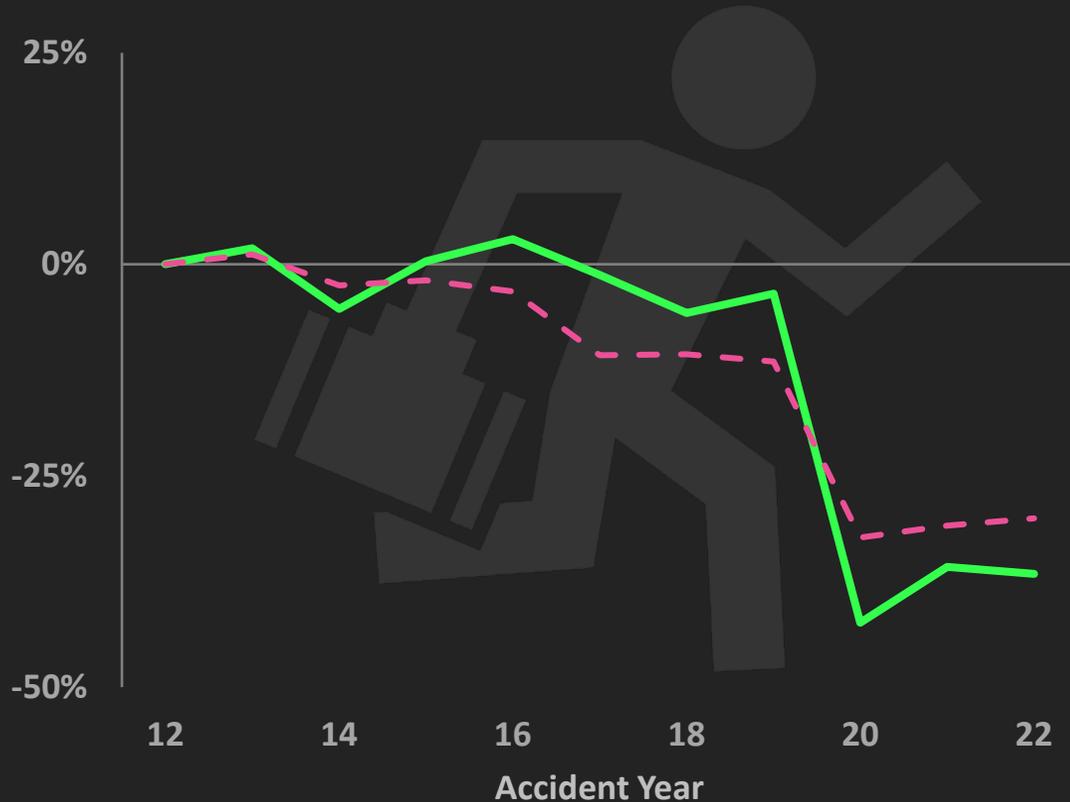


Source: Based on NCCI's Statistical Plan data for lost-time claims in Accident Years 2002–2022, developed to ultimate. Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims.

# Frequency by Job

Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All

## Class 8742: Salespersons



## All Classes

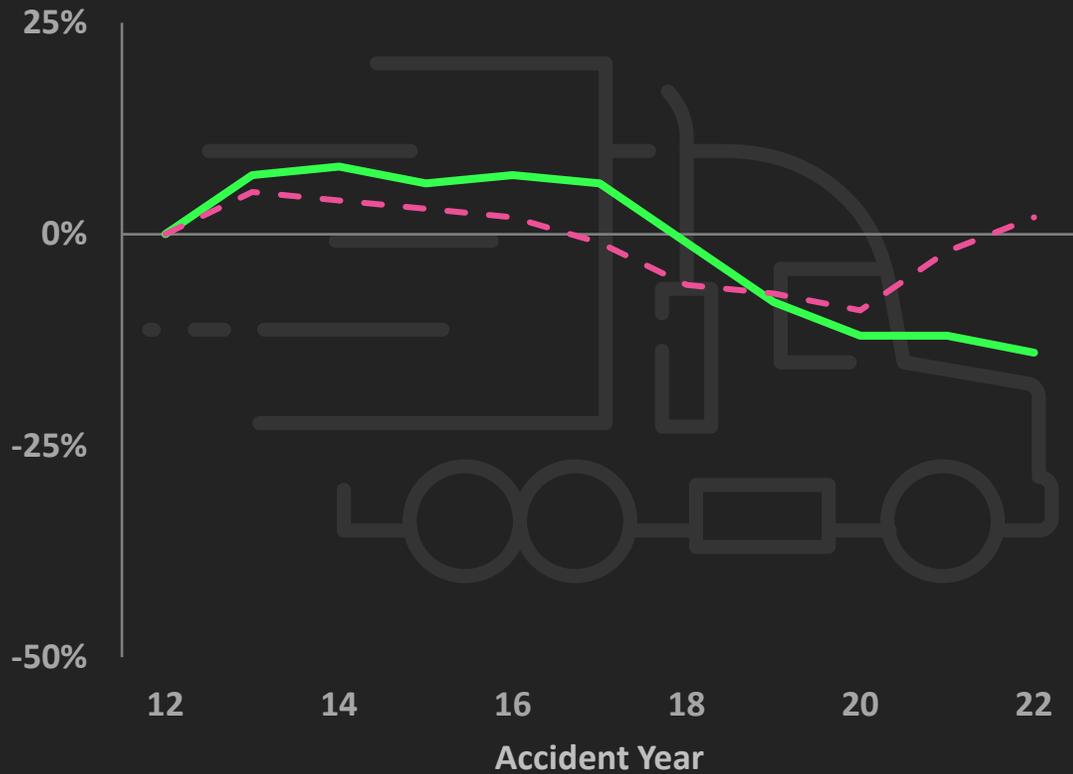


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# Frequency by Job

Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All

## Class 7219: Trucking



## All Classes

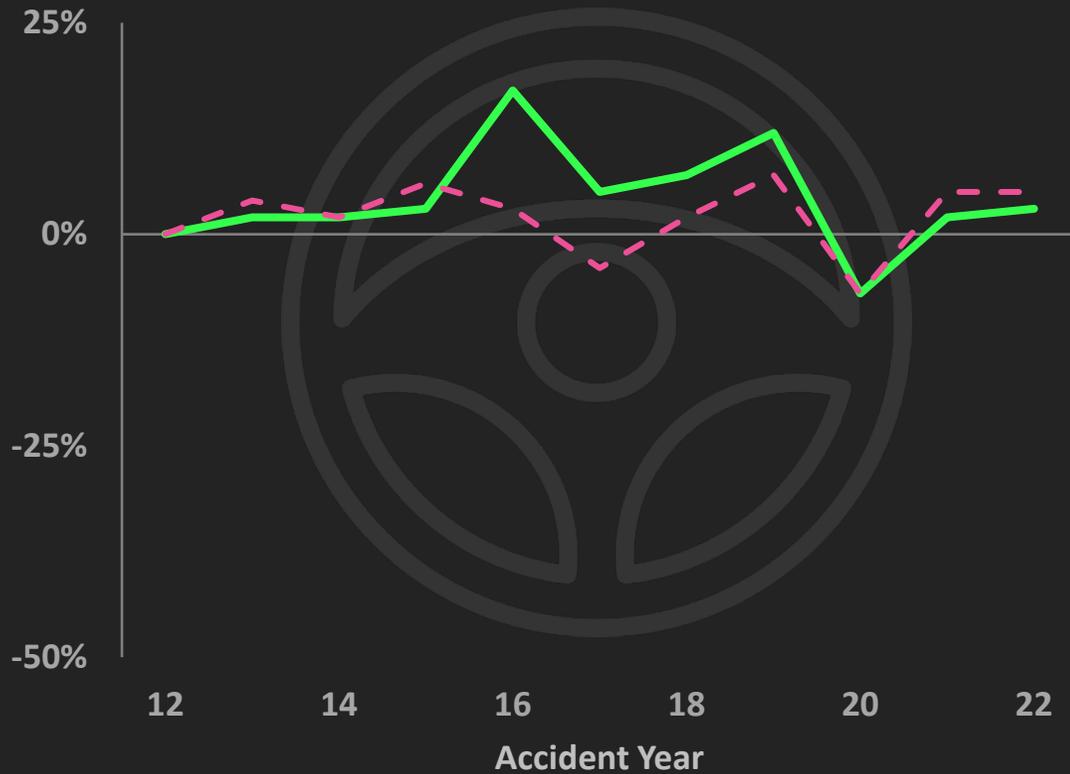


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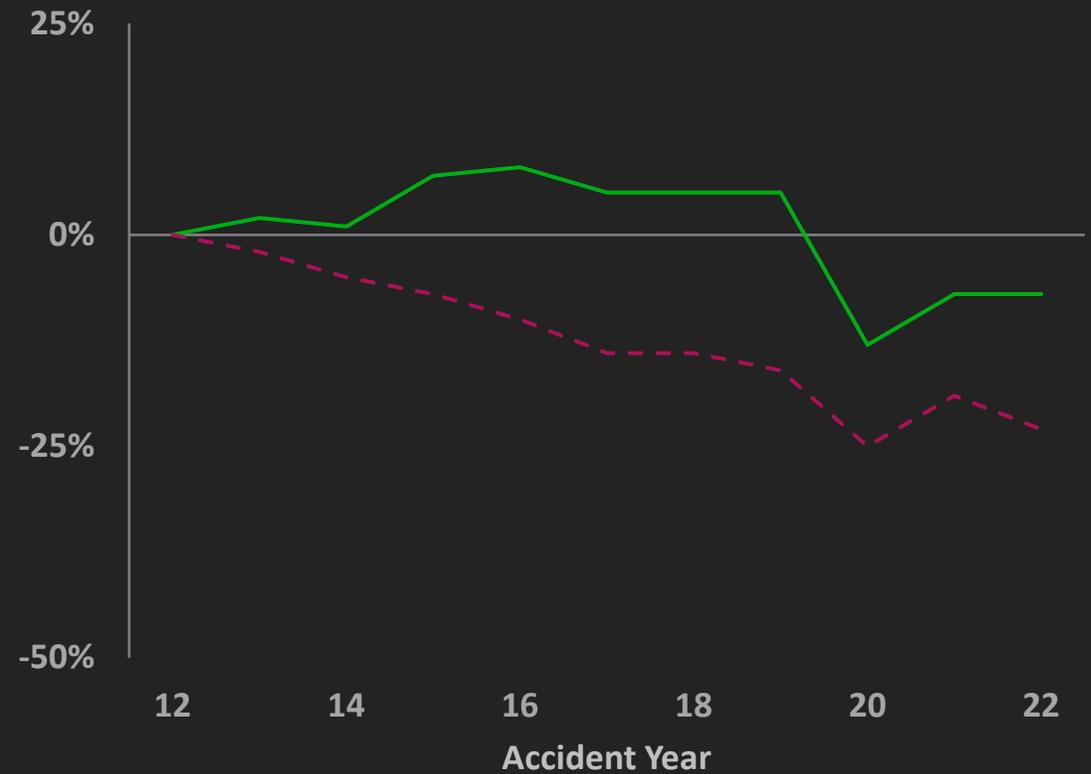
# Frequency by Job

Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All

## Class 7380: Drivers



## All Classes

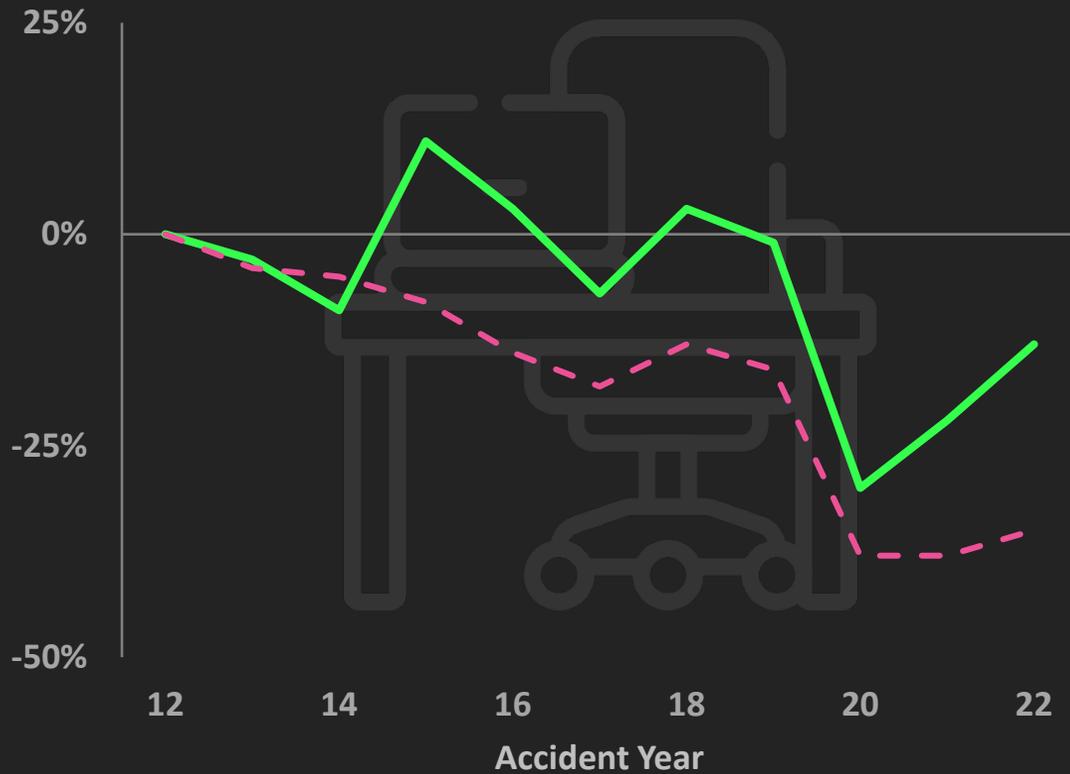


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# Frequency by Job

Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All

## Class 8810: Clerical Office



## All Classes

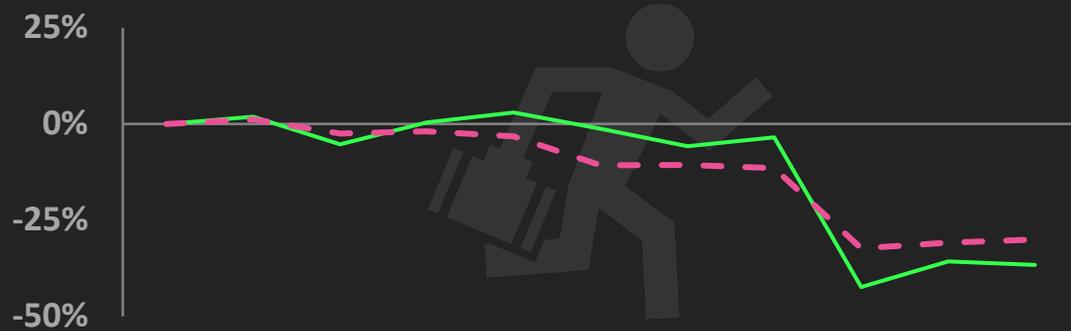


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Cumulative Change in Lost-Time Claims per \$1M Pure Premium—MVA vs. All

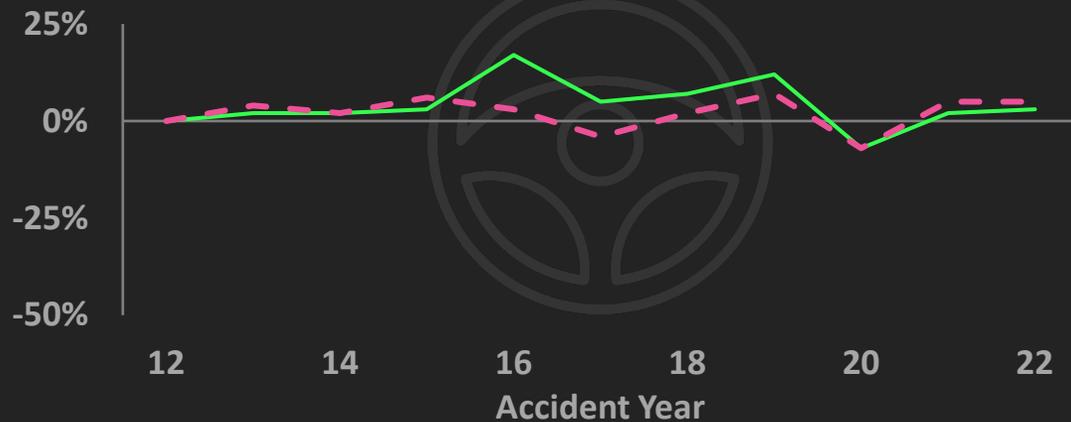
Class 8742: Salespersons



Class 7219: Trucking



Class 7380: Drivers



Class 8810: Clerical Office



Source: Based on NCCI's Statistical Plan data, developed to ultimate; measured as lost-time claims per \$1M pure premium adjusted to current wage and voluntary pure premium level. Includes all states where NCCI provides ratemaking services; includes high-deductible policies; excludes COVID-19 claims

# Regulations Impacting Trucking



Electronic stability control



Electronic logging devices



Drug & Alcohol Clearinghouse



# Telematics in Trucking



Vehicle sensors



GPS tracking



Dash cameras

# Autonomous Trucks



Millions of miles driven on public roads



Recently implemented without occupants in Texas



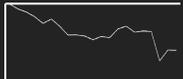
Cold weather remains a challenge



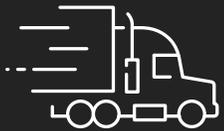
# Key Insights



MVAs cost 70% more on average



MVA frequency is trending flat overall



Trucking has shown improvement

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