

# Injury and Safety: National Survey of Long-Haul Truck Drivers

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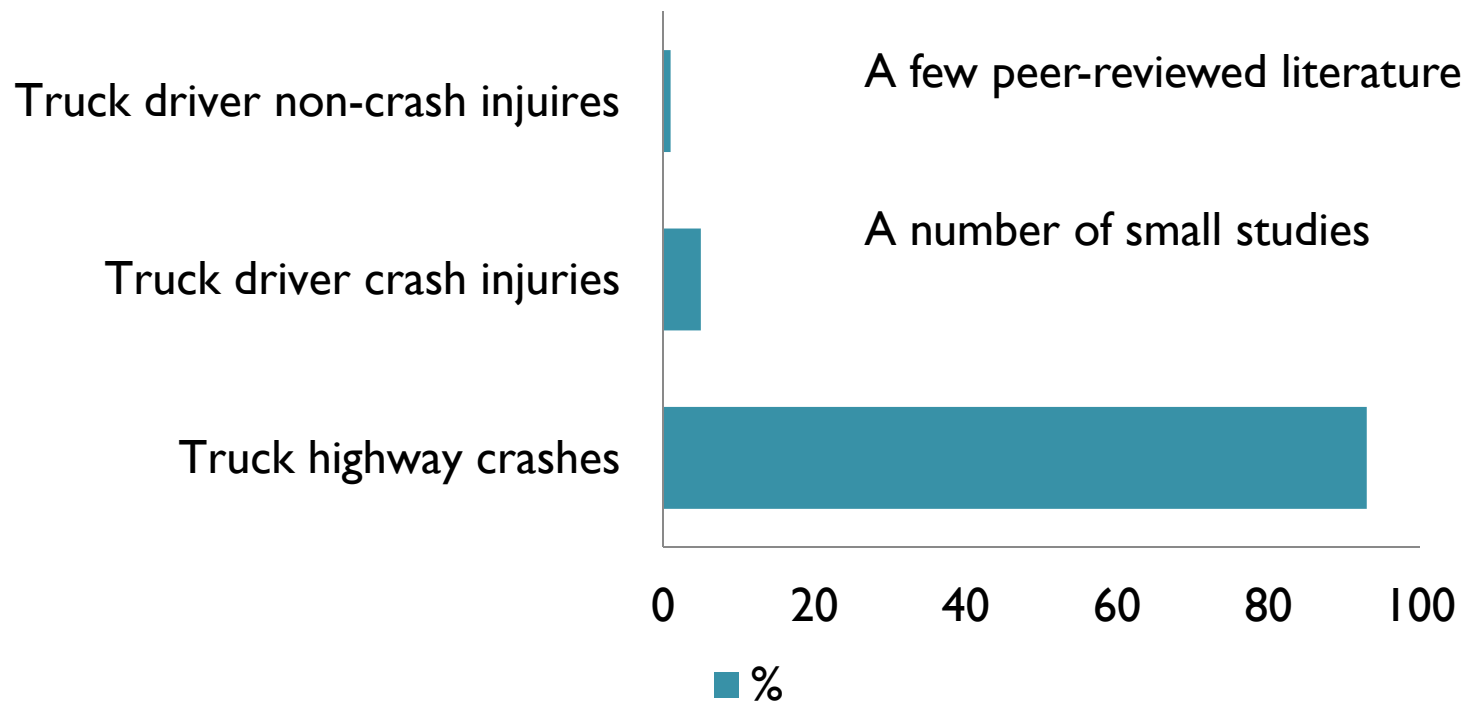
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# Background

## Existing research on truck driver safety



Limitations of exiting research include: small scale, used convenience sample, or administrative data. Results are not generalizable to all truck drivers in the United States.

# Study objective



- Collect data from a national representative sample of long-haul truck drivers (LHTDs):
  - Truck crashes
  - Near misses and moving violations
  - Crash and non-crash injuries
  - Driver training, attitudes, and behaviors
  - Work environment and safety culture

# Survey design

- A population-based and cross-sectional survey at truck stops along highways across the contiguous United States
- LHTDs
  - had driven a heavy truck as their main job for 12 months or more
  - took at least one night mandatory 10-hour rest period away from home during each delivery run.

# Field data collection



- In October-December 2010, survey was conducted at 32 truck stops
- 1,670 drivers were involved in the survey
  - 1,265 completed the full interview
  - 405 completed a short non-respondent interview

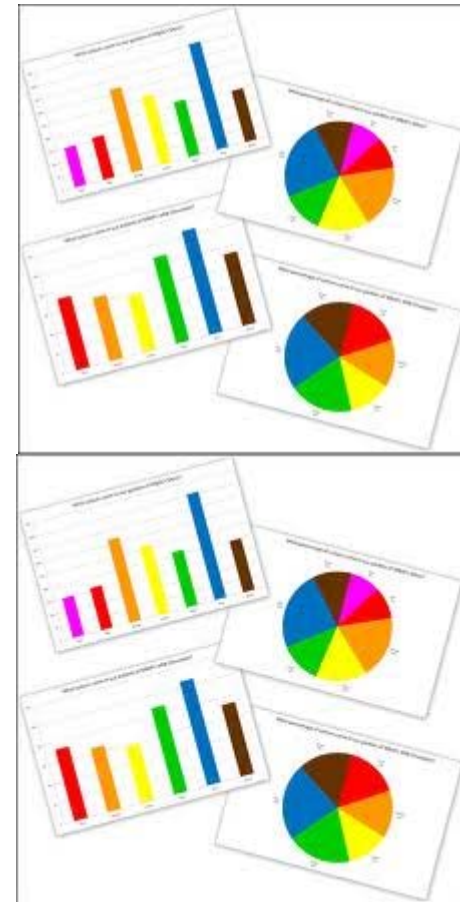


## Statistical analysis


- Each completed interview has a weight, which represents the inverse of the combined probabilities of selection and a non-response adjustment
- National estimates were computed by the sum of the weights for individuals responding to a given survey question
- Descriptive analysis was conducted

# Preliminary results

- Preliminary results from the injury and safety component of the NIOSH truck driver survey



# Crash history




	National estimate (%)
Had a DOT recordable truck crash in 2010	2.6
Ever had a DOT recordable truck crash	
At least one	34.9
2 or more	11.9
Injured in the most recent truck crash	14.7 <sup>1</sup>
Missed work day due to the injury	78.6 <sup>2</sup>

1: The denominator is the number of LHTDs who reported at least one crash

2: The denominator is the number of LHTDs who reported an injury in the most recent crash



# Near misses and moving violations

	National estimate (%)
Near misses in the past 7 days	
At least one	23.8
2 or more	12.1
Moving violations in the past 12 months	
At least one	17.4
2 or more	5.3

# Non-crash injuries

	National estimate (%)
Non-crash injuries in the past 12 months	7.3
Lost workdays due to the injury	63.8 <sup>1</sup>


1: The denominator is the number of LHTDs who reported a non-crash injury

# Non-crash injuries (continued)

Non-crash injury event	National estimate (%)
Contact with object or equipment	NR <sup>1</sup>
Fall to lower level	24.8
Fall to same level	NR
Bodily reaction and exertion	20.6
Others	NR

1: National estimate is not presented if a weighted estimate has a coefficient of variation greater than 0.3.

# Lost work day non-crash injury report

	National estimate (%)
Company drivers	33.4
Owner-operators were leased to a motor carrier	NR <sup>1</sup>
Owner-operator operated under his own authority and getting his own load	NR
Total	44.1


1: National estimate is not presented if a weighted estimate has a coefficient of variation greater than 0.3.

# Work environment

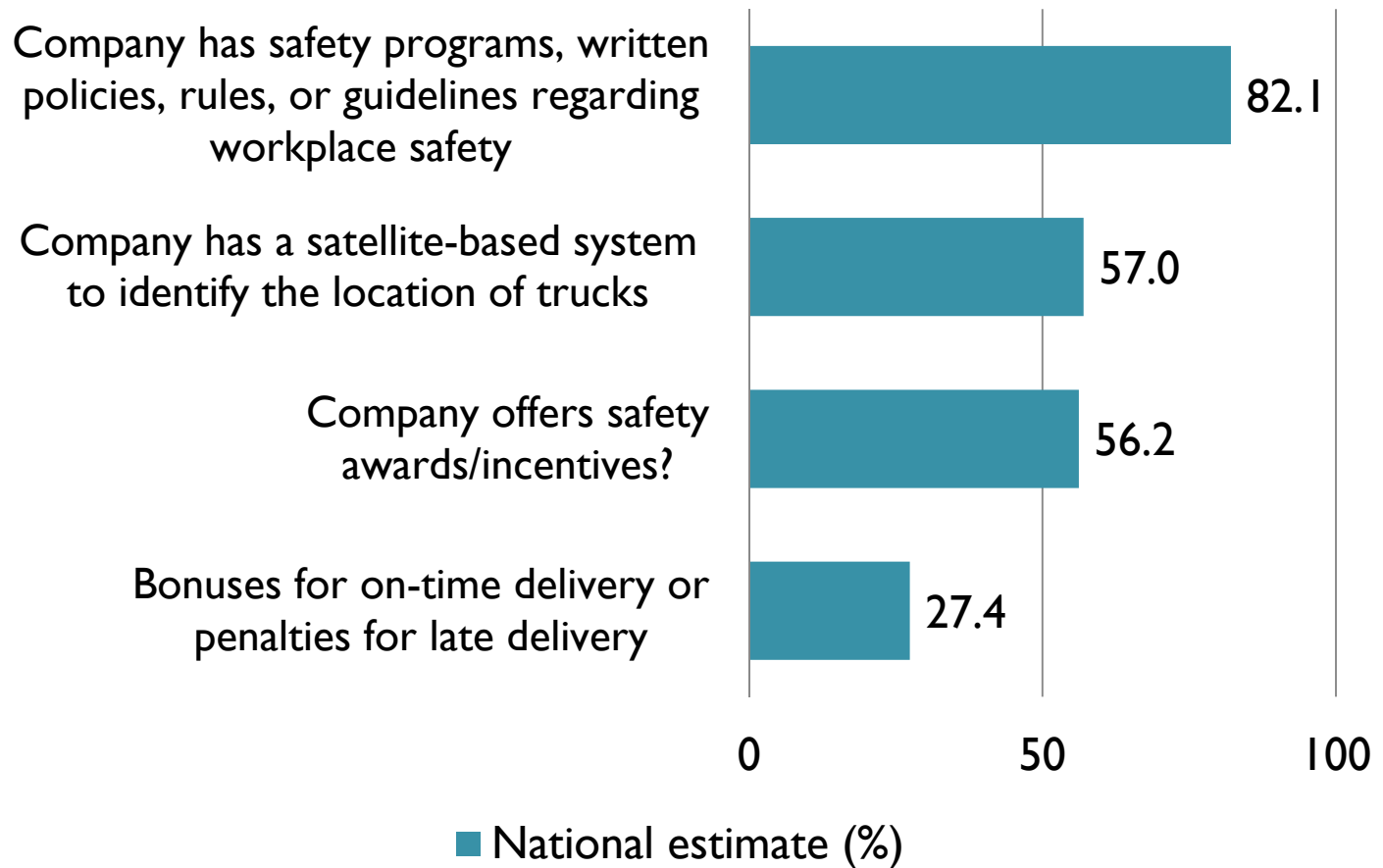
- Worked *60.4* hours a week on average
- Drove *107,700* miles a year
- Paid by-the-mile (65.9% of LHTDs)
- Drove alone at work (78.2% of LHTDs)



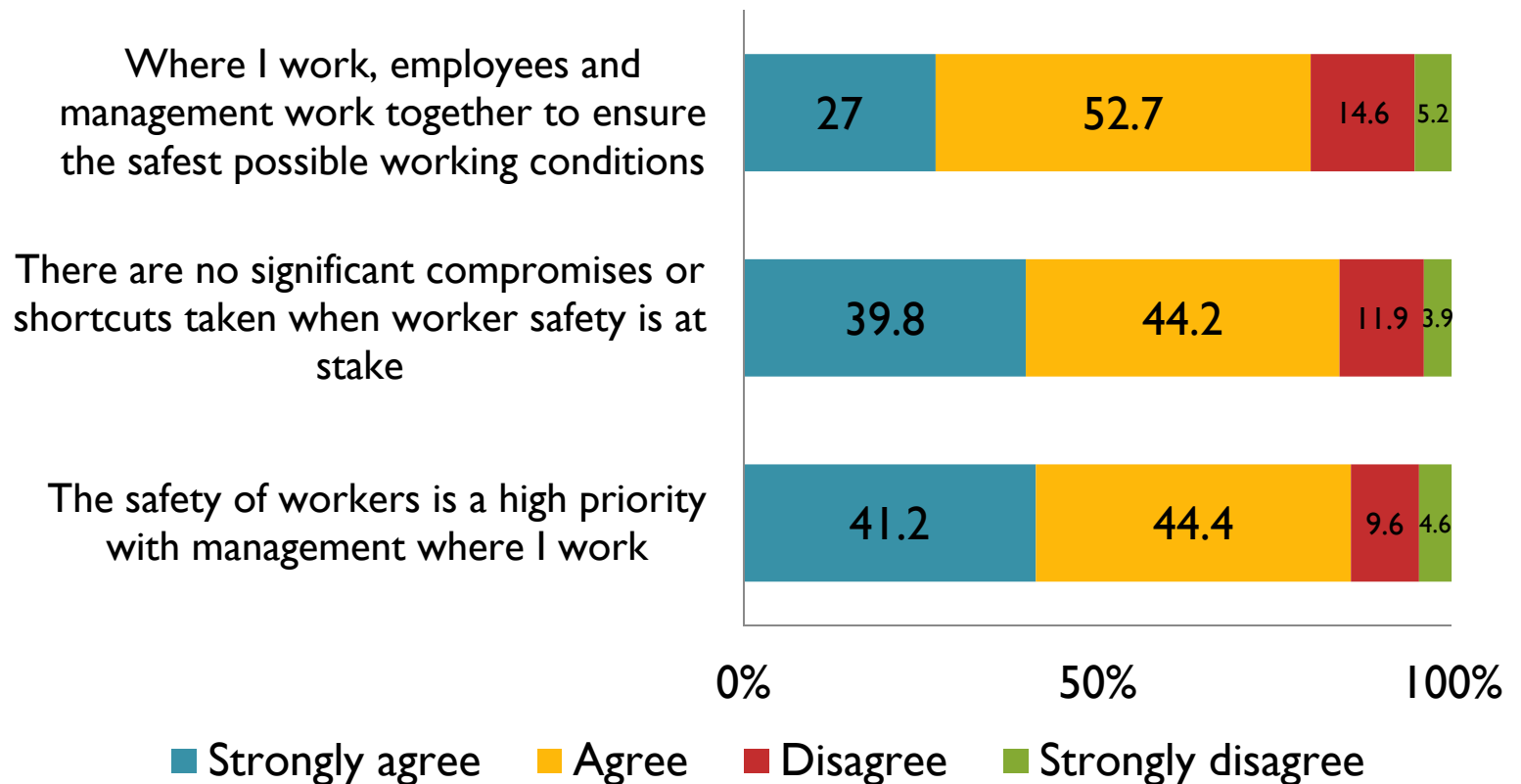
# Work environment (continued)

	Often (%)	Some- times (%)	Never (%)
Must deliver or pick up a load at a given time	72.4	21.3	5.6
Forced to wait for access to a loading dock	34.9	49.8	12.2
Traffic congestion delays your deliveries significantly	17.2	60.7	21.9
Receive an unrealistically tight delivery schedule	15.5	57.9	25.7
The hours-of-service rules are violated	9.7	27.0	63.0

# Safety culture



# Safety culture (continued)

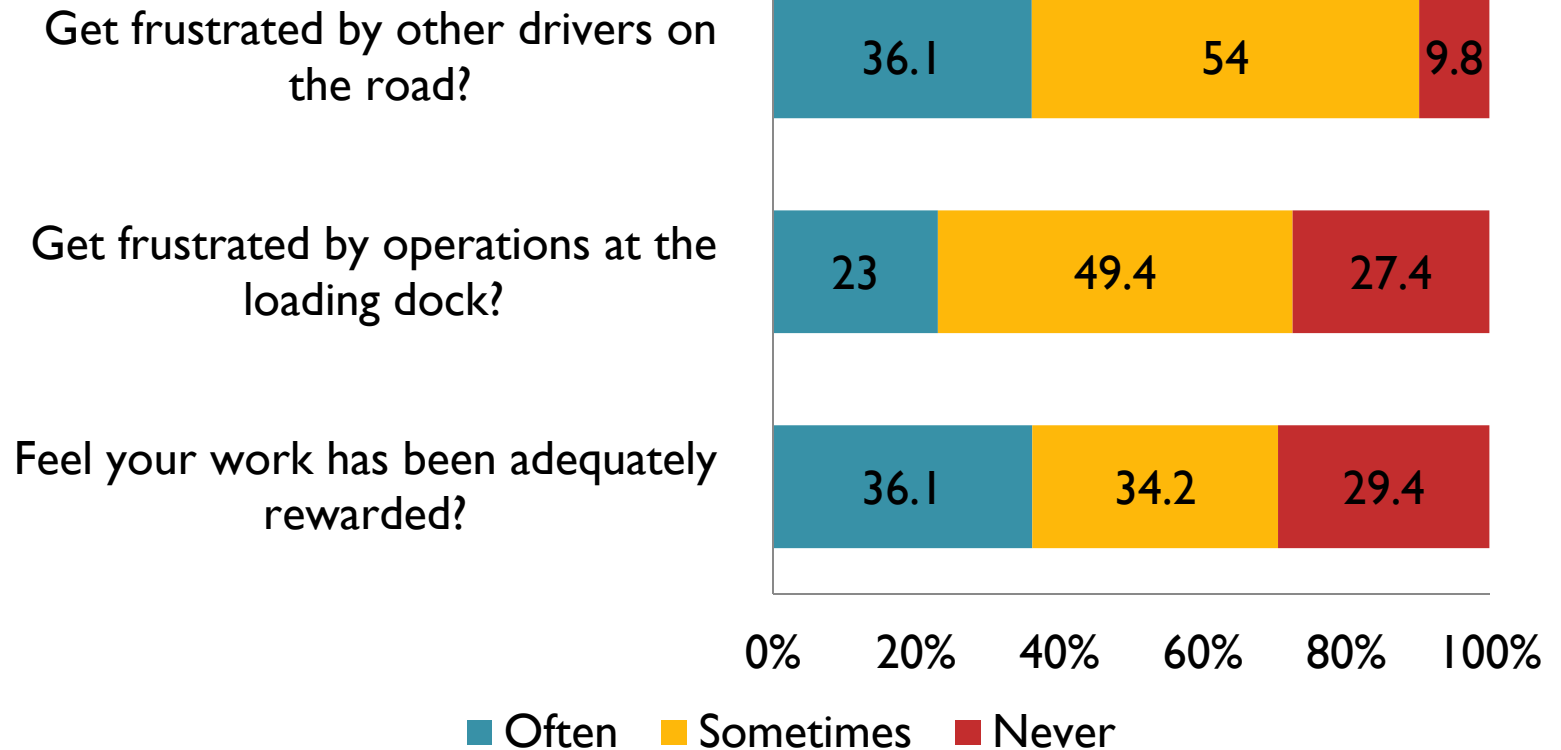




# Driver attitudes



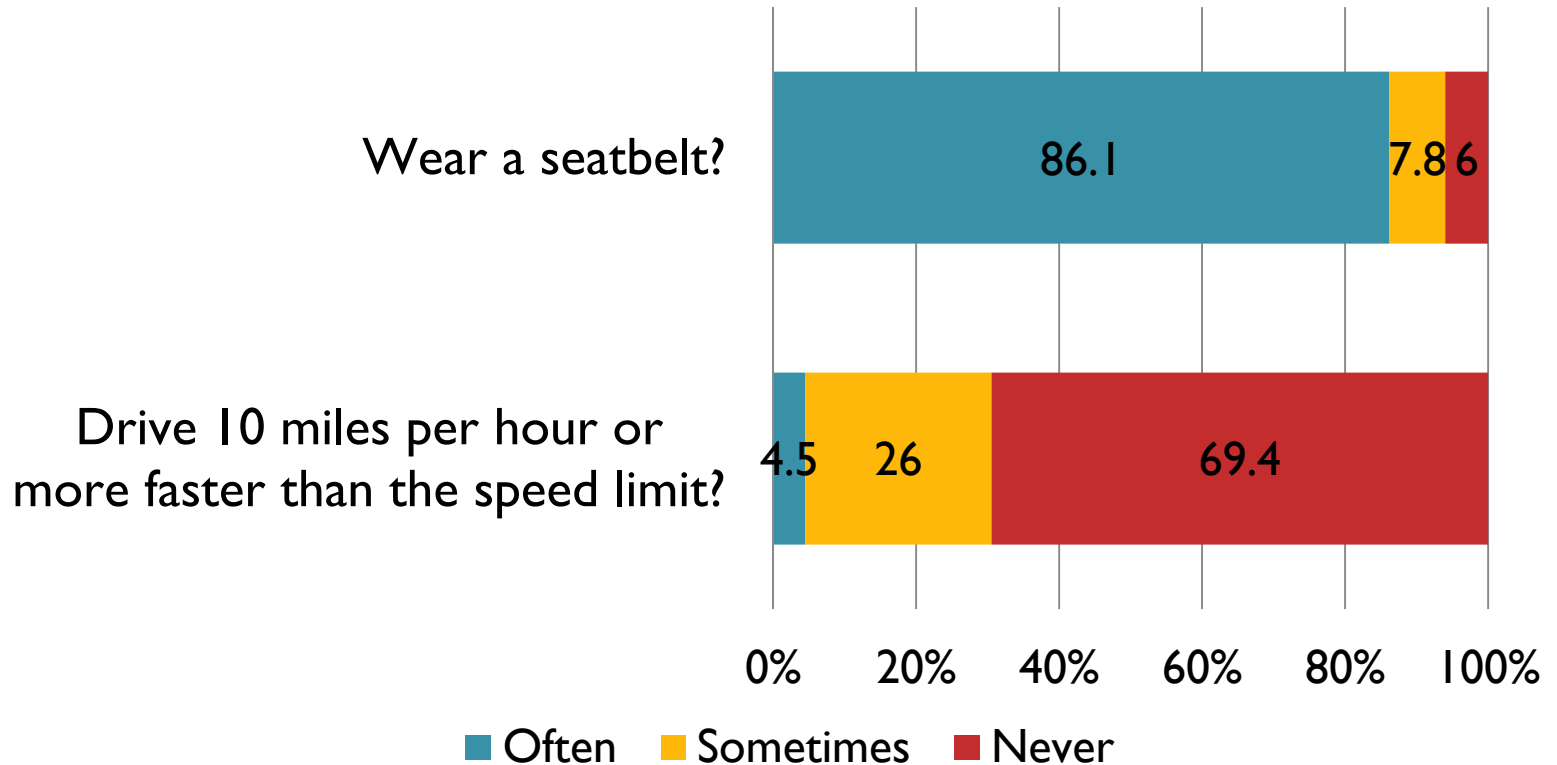
## How often do you:



# Driver behaviors



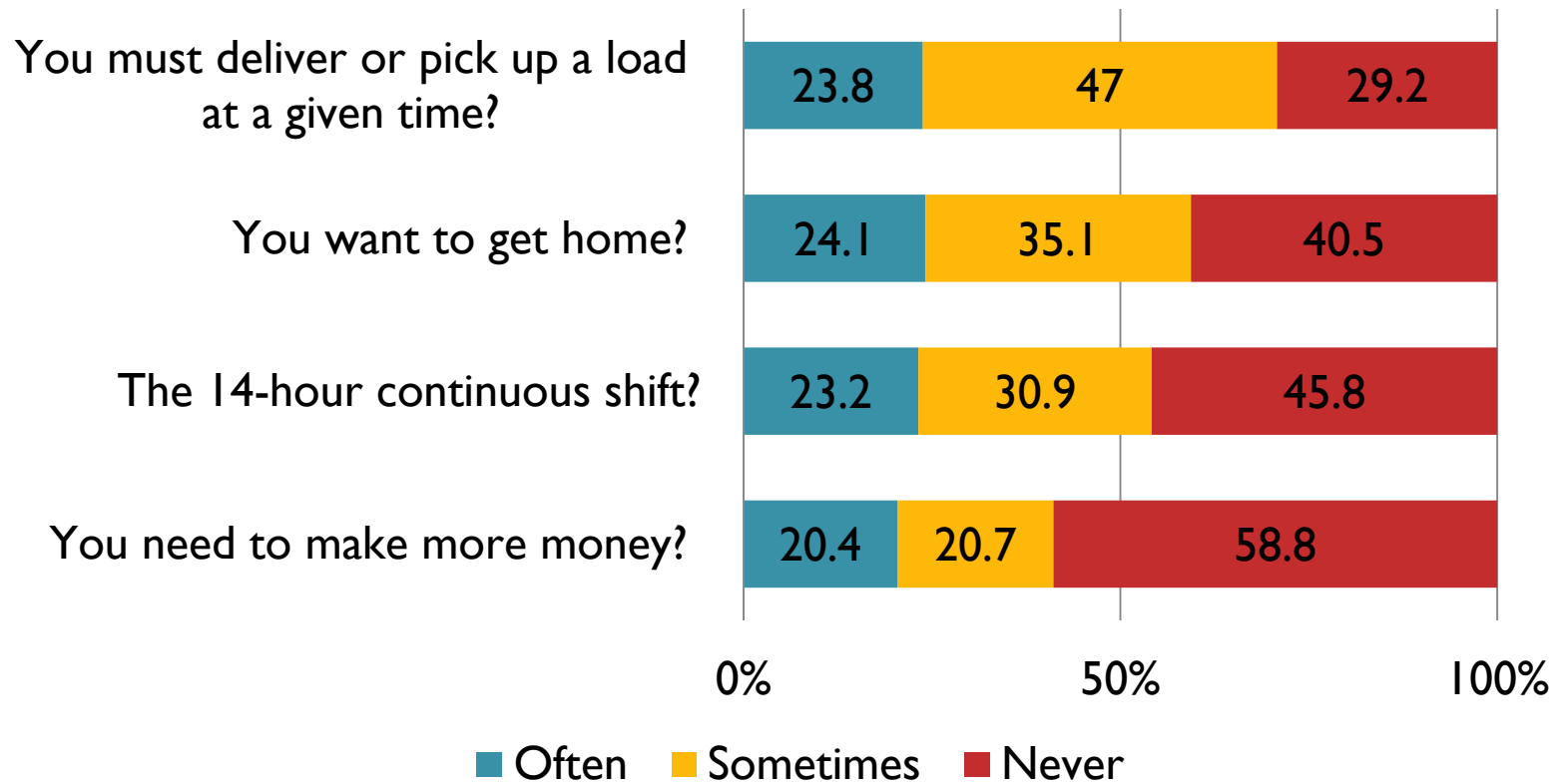
**How often do you:**



# Behaviors (continued)



**How often do you continue to drive despite fatigue, bad weather, or heavy traffic because:**

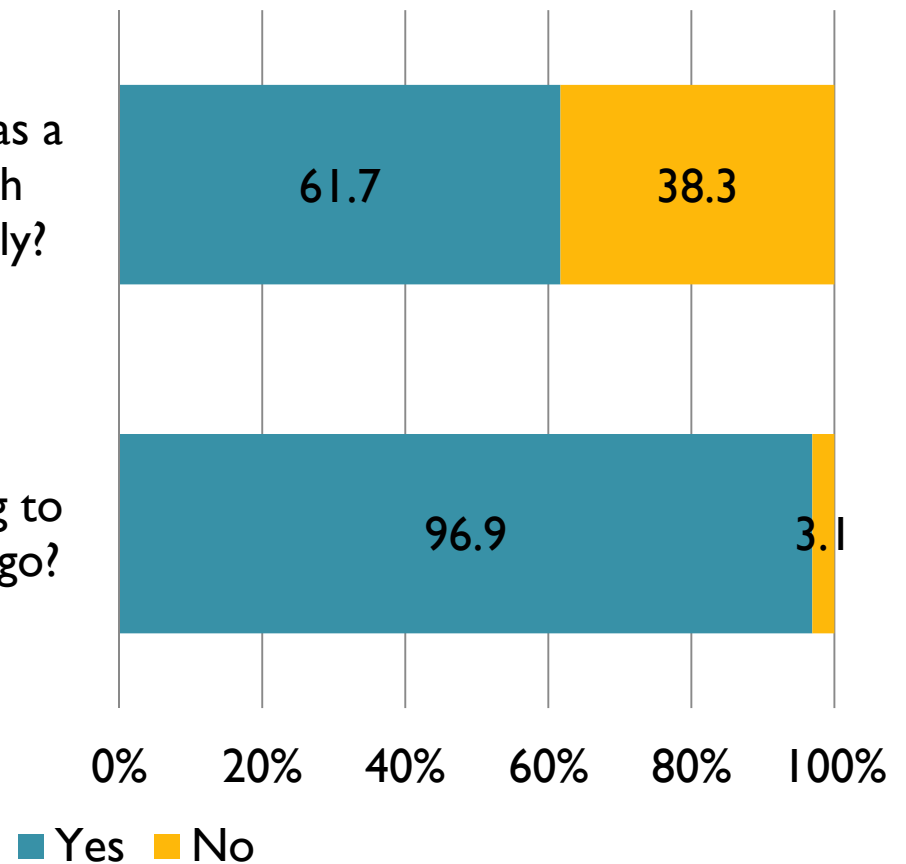


# Driver training

## National estimate

At the beginning of your career as a LHTDs, did you receive enough training to drive your truck safely?

Do you now have enough training to safely handle and secure your cargo?

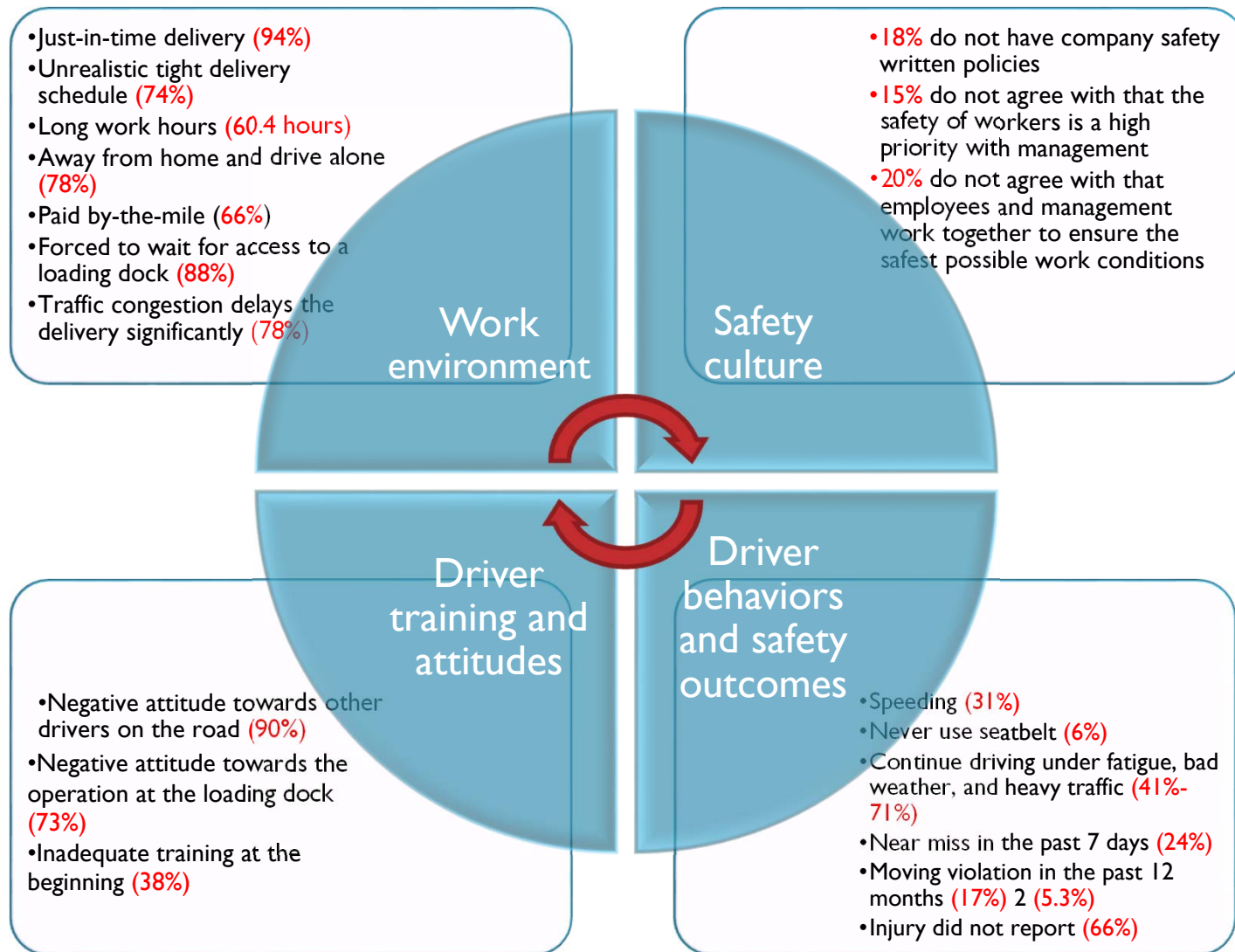




# Strengths

- This survey is the first study to scientifically document and quantify LHTD truck crashes, near misses, moving violations, injuries, work environment, safety culture, driver training, attitudes, and behaviors in one national profile

# Summary of potential risk factors





# Limitations

- Given the limitation of the cross-sectional design and descriptive nature of this study, inferences about causation are merely hypothetical
- Did not include fatal injuries and those nonfatal injuries resulting in the injured driver being unable to continue working as a LHTD

# (1) Non-crash injury underreporting

- 67% of lost workday injuries among company drivers were not reported
- In 2006–2010, the number of injuries decreased by 36% from 66,040 to 42,140 while the median days away from work increased by 36% from 14 days to 19 days among *Heavy and Tractor Trailer Truck Drivers* [BLS, 2012]





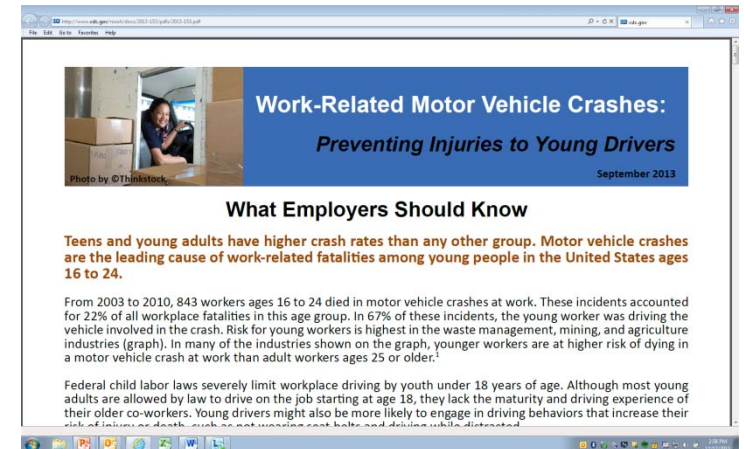
# (1) Improving injury reporting



- Create a supportive climate where injury reporting will occur and be used for improving truck driver safety
  - Management support
  - Confidential and non-punitive
  - Reporting injuries isn't overly time consuming
  - Analysis is reported back to truck drivers so they are confident the information provided is used for the improvement of their safety.

## (2) Unrealistically tight schedule

- Common among U.S. LHTDs
- Learning point for employers: Schedule work so that drivers can safely make time-sensitive deliveries (NIOSH, 2013)





### (3) Entry-level driver training

- 38% of LHTDs reported not receiving adequate training at the beginning of their career as a LHTD
- 20.6% increase in employment of heavy truck drivers in 2010-2020
- FMCSA regulations specify:
  - Entry-level training minimum requirements
  - No carrier allow individual to operate a longer combination vehicle unless he/she meets the training requirements

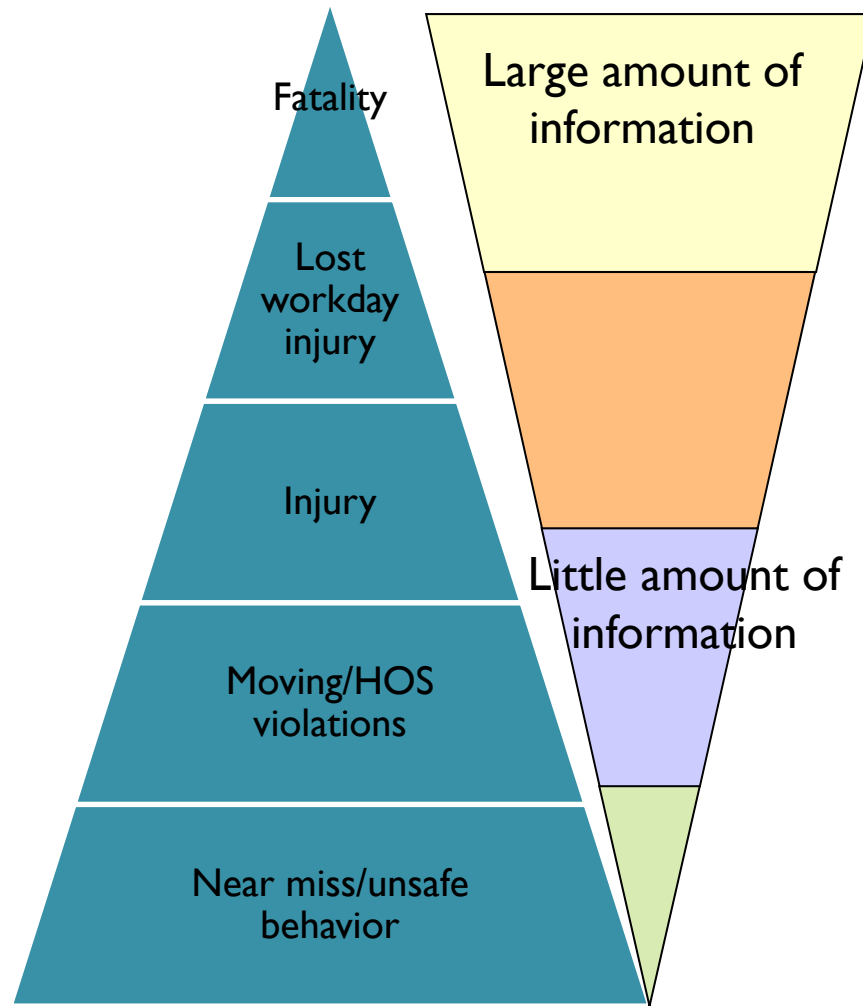
## (4) High risk carriers and drivers

- 15% often receive unrealistically tight schedules (company)
- 10% reported that HOS often being violated (company or driver)
- 5% strongly disagreed that the safety of workers is a high priority with management (company)
- 12% reported 2 or more crashes over the years of working as a LHTD (driver)
- 6% reported never use seatbelt (driver)
- 5% reported often driving at least 10 miles faster than speed limit (driver)
- 5% reported 2 or more moving violations in the past 12 months (driver)

## (4) High risk carriers and drivers (continued)

- FMCSA launched the Operation Quick Strike: an effort to catch non-compliant motor carriers
  - FMCSA shut down five trucking companies in one week, in November 2013
- For high risk drivers: identification, education, and coaching to improve driving performance

## (5) Near misses and moving violations



### Research question

Is it possible to systematically collect near miss and unsafe behavior data in the trucking industry?

The U.S. Aviation Safety Reporting System (ASRS) has been collecting, analyzing, and disseminating confidential, voluntary reports of near misses from pilots, flight attendants, and air traffic controllers since 1976



# Survey reports development

- Sieber WK, Robinson CF, Birdsey J, Chen GX, Hitchcock T, Lincoln JE, Nakata A, Sweeney MH. Obesity and Other Risk Factors: The National Survey of U.S. Long-haul Truck Driver Health and Injury (*American Journal of Industrial Medicine* in press)
- A manuscript based on this presentation is in development and will be submitted to a Journal for publication consideration in 2014



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# Questions and comments?

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- The findings and conclusions in this presentation are those of the authors and do not necessarily represent the views of the National Institute for Occupational Safety and Health