National Survey of Long-Haul Truck Driver Health and Injury

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Outline

I.   **Survey Objectives and Development**

II. **Survey Conduct**

III. **Some Results**

IV. **Future Directions**

NIOSH Transport Strategic Goal #3

Improve health and reduce premature mortality through workplace programs and practices that:

- **Enable workers to engage in healthy behaviors.**

- **Reduce work-related physiological and psychological stressors.**

- **Improve healthcare utilization.**

Survey Objectives

- **<u>Provide baseline data</u>** about long-haul truck drivers' health and safety, including prevalence of selected health conditions and risk factors.

- **<u>Describe prevalence of risk factors</u>** associated with poor health and safety outcomes within the long-haul truck driver population.

- **<u>Provide information</u>** to drivers, the trucking industry, and the transportation research community that will guide health and safety promotion, interventions, and future research needs.
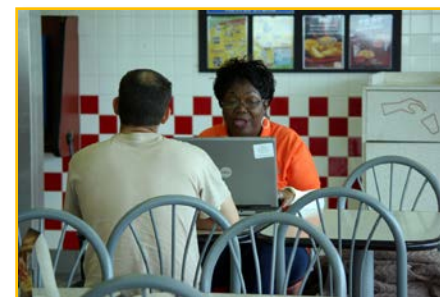
Survey Plan

- **Intercept study of long-haul truck drivers stopping at truck stops.**

- **Nationally representative 3 stage probability sample.**

- **Truck driver eligibility:**

  - **Truck driving is the main occupation.**
  - **Drives a truck with three or more axles (a heavy truck).**
  - **Has driven a heavy truck 12 months or longer.**
  - **Takes at least one mandatory 10-hour rest period away from home during each delivery run.**
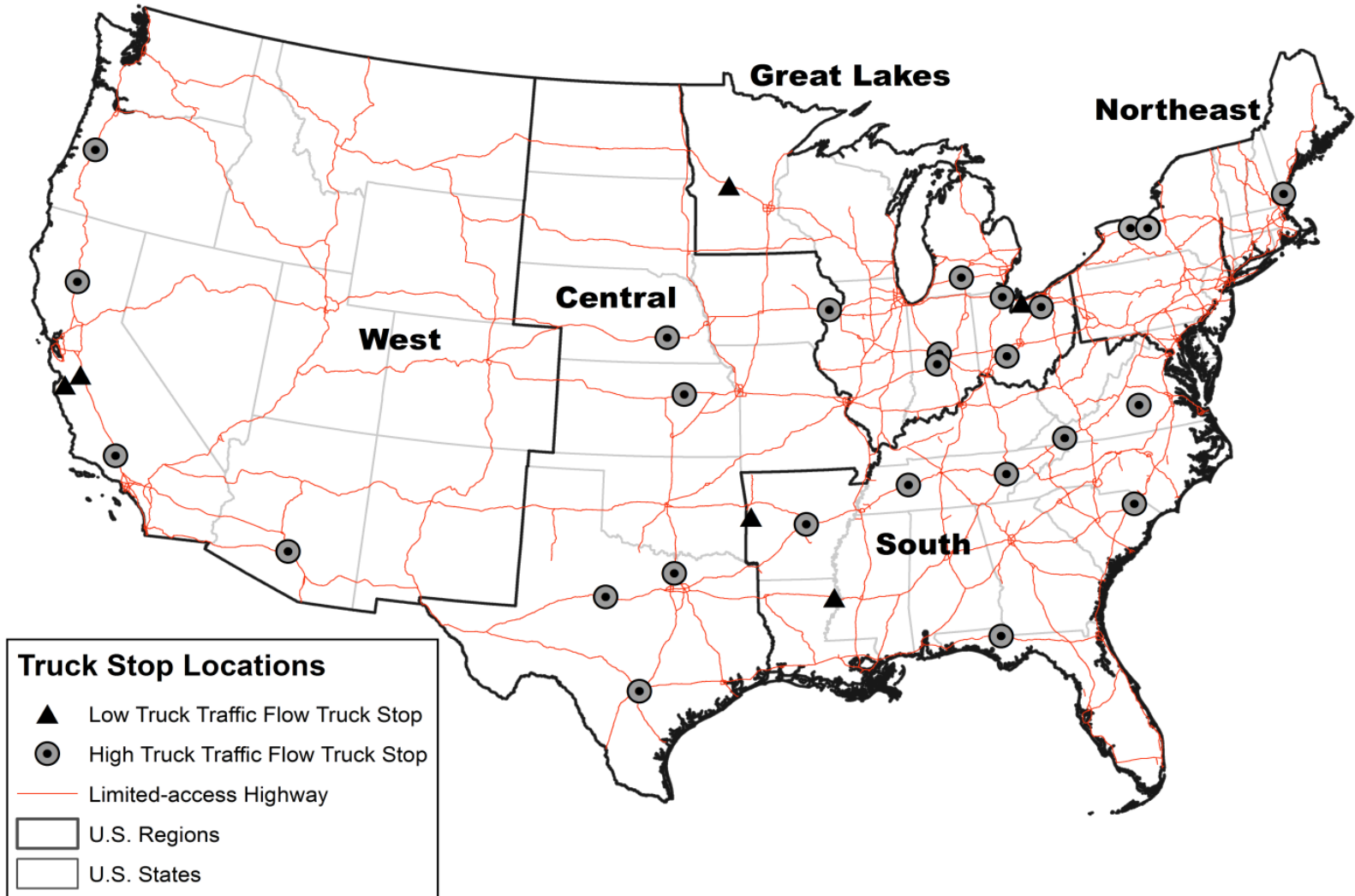
Survey Interview

- **Face-to-face interview by trained interviewers.**

- **Data collection at 32 truck stops in 20 States. Conducted October through December 2010.**

- **1,670 drivers interviewed.**

  - **1,265 completed the full survey and 405 completed only a non-respondent questionnaire**.

Statistical Analysis of Survey Data

- **Descriptive characteristics and prevalence estimates for health conditions and risk factors.**

- **Prevalence was sex- and age-adjusted to the 2010 U.S. employed population. Results were compared to those from working adults included in the 2010 National Health Interview Survey (NHIS).**

- **The NHIS is a national household, multistage probability sample survey conducted annually by the National Center for Health Statistics (NCHS).**

Truck Stop Locations

Truck Stop Locations
- ▲ Low Truck Traffic Flow Truck Stop
- ◉ High Truck Traffic Flow Truck Stop
- — Limited-access Highway
- ☐ U.S. Regions
- ☐ U.S. States

SOME PRELIMINARY RESULTS

Findings of Concern

Compared to the national working population, we found that for long-haul truck drivers:

- **Prevalence of obesity is twice as high (69% vs. 31%).**

- **Prevalence of morbid obesity is twice as high (17% vs. 7%).**

- **Prevalence of current cigarette smoking is more than double (51% vs. 19%).**

- **Prevalence of self-reported diabetes is elevated (14% vs. 7%).**

- **Over twice as many drivers are not covered by health insurance or a health care plan (38% vs. 17%).**

- **A lower percentage of drivers perceived their health status as excellent, very good, or good (84% vs. 94%).**

Self-Reported Risk Factors

Risk Factor Reported	Truck Driver National Prevalence*	2010 NHIS National Prevalence*
Hypertension	26%	24%
High cholesterol	22%	Unavailable
▪ BMI: Normal (20 < = BMI < 25)	8%†	30%
▪ BMI: Overweight (25 < = BMI < 30)	23%†	35%
▪ BMI: Obese (BMI > = 30)	69%†	31%
▪ BMI: Morbid obesity (BMI > =40)	17%†	7%
No physical activity for 30 minutes	27%	Unavailable
Current cigarette smoker	51%†	19%
▪ Average: 6 hours or less sleep in 24 hours	27%	30%
▪ Average: 6–8 hours of sleep in 24 hours	51%†	64%
▪ Average: More than 8 hours of sleep in 24 hours	22%*	5%

* Estimates are weighted and sex- and age-adjusted to 2010 population
† P < 0.01

Hypertension, Smoking, and Obesity

Number of Risk Factors Reported (Hypertension, Smoking, Obesity)	Truck Driver National Prevalence*	2010 NHIS National Prevalence*
1 or more risk factor	88%	54%
All 3 risk factors	9%	2%

* Estimates are weighted and sex- and age-adjusted to 2010 working population

Self-Reported Health Conditions

Self-Reported Health Condition	Truck Driver National Prevalence*	2010 NHIS National Prevalence
Heart Disease	4%†	7%
Diabetes	14%†	7%

* Estimates are weighted and sex- and age-adjusted to 2010 population
† P < 0.01

Self-Reported Health Care Coverage

Self-Report Health Care Coverage	National Prevalence* per Truck Drivers	National Prevalence* per 2010 NHIS
Perceived Health: Excellent, Very Good, or Good	84%[†]	94%
Perceived Health: Fair or Poor	16%[†]	6%
Not Covered by Health Insurance or Health Care Plan	38%[†]	17%
Delayed/did not receive needed health care in 12 months	18%	10%
Did not receive flu shot in 12 months	80%[†]	67%

* Estimates are weighted and sex- and age-adjusted to 2010 population
[†] P < 0.01

Sleepiness Disturbance (Preliminary)

Screening Index	Mean Index Value Indicating Apnea	Drivers Above Mean Value
Epworth Sleepiness Scale*	9	15%
Probability of Respiratory Disturbance[†]	0.47	59%

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[†] Maislin et al. [1995], Pack et al. [2001].

Highway Safety Outcomes

Occurrence	Weighted National Estimate*
Near miss in the past 7 days: At least one near miss	24%
Near miss in the past 7 days: Two or more near misses	12%
Nodding off/falling asleep/drowsiness: Drivers who have nodded off or fallen asleep while driving	34%
Nodding off/falling asleep/drowsiness: Drivers feeling very drowsy almost every day driving	7%

* Weighted national estimates using 1,265 survey responses.

Work and Driving Practices

Description	Weighted National Estimate*
Mean number of hours worked in the last 7 days	61
Driving practice on trip: Driving alone	78%
Driving practice on trip: Driving with others	22%
Driving with second job	2%
Drivers with union membership	3%
0 days slept at home in the last 30 days	18%
1-6 days slept at home in the last 30 days	45%
7 or more days slept at home in the last 30 days	37%

* Weighted national estimates using 1,265 survey responses.

Strengths and Limitations

Strengths:

- Nationally representative population-based sample.
- National prevalence estimates of illness and injury.
- Methodology designed for hard-to-reach, mobile workers.
- Standardized questions used.
- Non-response bias assessed.

Limitations:

- Cross-sectional design.
- Self-reported data is subject to recall and interviewer bias.

Project Products

- Six descriptive articles in process:
  - Survey approach, conduct, and selected findings.
  - Health behaviors.
  - Crashes and injuries, safety, and training.
  - Truck stop amenities and food options.
  - Truck driver working environment/work history.
  - Sleep disorders/fatigue and risk factors.
- Website.
- Dissemination of findings.
- Public use data file.
- Other suggestions?

Continuing Research

Other research suggested by survey results:

- Dissemination of safety and health information to truck drivers and managers.
- Longitudinal studies of truck drivers.
- Workers compensation analyses.
- Owner-operators as a group.
- Sleep apnea, fatigue.
- Age and driving.
- Public health burden.

NIOSH Transportation Web Pages

- NIOSH Science Blog:
  www.cdc.gov/niosh/blog/nsb111907_truck.html

- Transportation, Warehousing, and Utilities Sector Program Page:
  www.cdc.gov/niosh/programs/twu/

- Motor vehicle safety page:
  www.cdc.gov/niosh/topics/motorvehicle/

- Twitter account:
  @NIOSHTransport

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

APPENDIX

Demographics (1)

Description	Weighted National Estimate*
Male	94%
Female	6%
Age Range: 20-29 years	5%
Age Range: 30-39 years	17%
Age Range: 40-49 years	33%
Age Range: 50-59 years	29%
Age Range: 60-69 years	15%
Age Range: 70-80 years	1%

* Weighted national estimates using 1,265 survey responses.

Demographics (2)

Description	Weighted National Estimate*
Hispanic or Latino	9%
White	74%
African American	17%
Other or multiple race	7%
Unknown	3%

* Weighted national estimates using 1,265 survey responses.

Employment (1)

Description	Weighted National Estimate*
Mean number of years as a long-haul truck driver	16.4
Employment: Company Employee	65%
Employment: Owner-operator	35%
Type of company working or contractor for: For-hire	90%
Type of company working or contractor for: Private carriage	8%
Type of company working or contractor for: Both for-hire and private	1%
Type of company working or contractor for: Don't know/refused/missing	0.5%

* Weighted national estimates using 1,265 survey responses.

Employment (2)

Description	Weighted National Estimate*
Type of freight shipment on current trip: Less than truckload freight	16%
Type of freight shipment on current trip: Truckload freight	75%
Type of freight shipment on current trip: Unknown/refused/missing	9%
Methods of work compensation: By-the-mile	66%
Methods of work compensation: Percentage of revenue	20%
Methods of work compensation: By-the-load	10%
Methods of work compensation: By-the-hour	3%
Methods of work compensation: Salaried	1%

* Weighted national estimates using 1,265 survey responses.

Highway Safety Outcomes

Description	Weighted National Estimate*
Ever had DOT-reportable truck crashes: At least one DOT reportable crash	35%
Ever had DOT-reportable truck crashes: Two or more DOT reportable crashes	12%
Truck crash injury: Injured in most recent crash	15%
Moving violations in the past 12 months: At least one moving violation in the last 12 months	17%
Moving violations in the past 12 months: At least two or more moving violations in the last 12 months	5%

* Weighted national estimates using 1,265 survey responses.