

NSTSCE's Ongoing Commercial Driver Health, Wellness and Fatigue Research Programs

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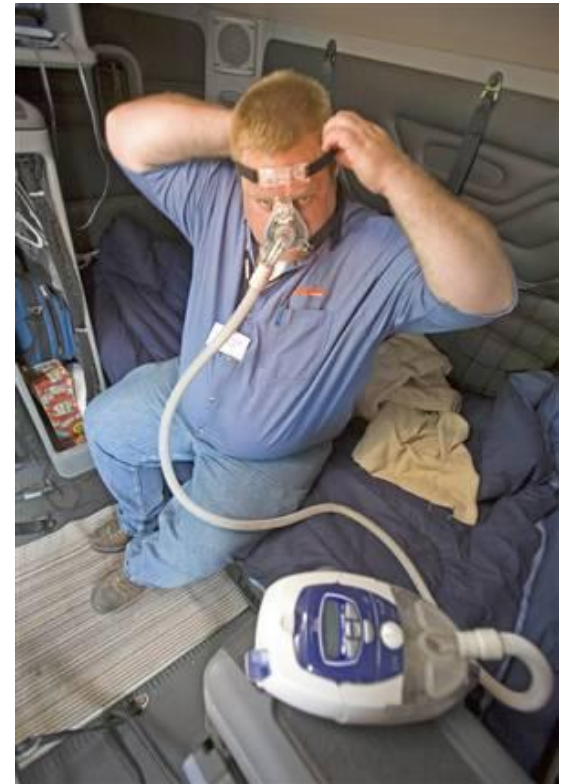
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**National Surface Transportation Safety Center
for Excellence**

Impact of Treating Obstructive Sleep Apnea (OSA) in Commercial Motor Vehicle Drivers: A Case Study



Research Objectives

- Assess the effectiveness of an ongoing OSA pilot program in terms of safety, health, and cost benefits
- Compare/contrast the OSA programs at two leading carriers
- Develop a set of best practices in implementing and maintaining a successful OSA program

Obstructive Sleep Apnea (OSA)

- Disorder characterized by repetitive upper airway collapse and obstruction during sleep
- Causes stressful arousals resulting in fragmented and insufficient restorative sleep
- 93% of women and 82% of men with OSA remain undiagnosed

(Pang *et al.* *Am J Otolaryngol* 2006)



Implications of OSA



- **Health**
 - Increases risk of diabetes, hypertension, and other cardiovascular complications
 - May promote obesity by influencing appetite regulation and energy expenditure

- **Safety**
 - May negatively influence judgment and concentration, thereby impairing driving performance and increasing crash risk



Prevalence and Risk

- 1 in 4 CMV drivers in the U.S. are estimated to have mild or higher levels of OSA (Pack *et al.* 2002)
- Passenger drivers with OSA are 2.0 times more likely to be involved in a crash (Sassani, Findley *et al.* 2004)
- CMV drivers with OSA are likely to be at greater risk for a crash due to their road exposure
 - Risk may be exacerbated in long-haul CMV drivers due to poor sleeping conditions and irregular schedules

OSA Mandates for CMV Drivers

- FMCSA has been urged (FMCSA Medical Review Board, NTSB, etc.) to mandate OSA screening and testing in all CMV drivers
 - Currently reviewing recommendations for OSA screening criteria
- Until mandates are in place, carriers are responsible for initiating OSA programs with drivers
- Two leading U.S. carriers have initiated OSA programs to screen, test, treat, and monitor their drivers
 - Schneider National Inc. (SNI)
 - J.B. Hunt (JBH)

Carrier OSA Programs

▪ Schneider

- ✓ Initiated in 2006
- ✓ OSA provider: Precision Pulmonary Diagnostics
- ✓ OSA Testing: Overnight laboratory - polysomnography
- ✓ OSA Tx: Positive airway pressure (PAP) treatment
- ✓ OSA drivers are monitored for PAP compliance



▪ J.B. Hunt

- ✓ Initiated in 2008
- ✓ OSA provider: Fusion Sleep
- ✓ OSA Testing: Portable sleep testing device
- ✓ OSA TX: PAP treatment
- ✓ OSA drivers are monitored for PAP compliance



NSTSCCE Project Study Methods

- Compare/contrast the SNI and JBH OSA programs.
- Conduct focus groups to assess driver/staff opinions/perceptions
- Evaluate SNI's OSA program using existing quantitative data
 - Safety and sleep health benefits
 - Develop models to predict beneficial sleep health and safety outcomes
- Develop a set of best practices for implementing and maintaining a successful OSA program to serve as a guide for carriers

Focus Group Preliminary Findings

Drivers

❖ *Benefits*

- Better quality sleep
- Not falling asleep while driving
- More energy/well rested
- Better health

❖ *Dis-Benefits*

- Mask discomfort
- Being “tied to” PAP device
- PAP complaints (home use, cleaning/care)
- PAP compliance requirements

OSA Program Personnel

❖ *Aids Program*

Implementation/Maintenance

- Carrier and OSA provider staff (e.g., very helpful)
- Compliance monitoring and driver follow-up
- Concern for driver safety/health

❖ *Barriers to Program*

Implementation/Maintenance

- Logistics (e.g., scheduling and accessing drivers)
- Driver acceptance
- Collection and organization of PAP compliance data
- Time delays due to volume of drivers at risk for OSA

Take-Aways

- Perceived high cost (screening, testing, and treating) combined with a lack of knowledge likely discourages carriers from implementing OSA program
- Carriers may implement OSA program with their drivers if they had had information on the health, safety, and financial benefits in treating OSA
 - The manual of best practices will serve as a guide for implementing such an OSA program
- Several organizations have agreed to disseminate the findings in the case study
 - ATA, FTA, NIOSH, ATRI, OOIDA, AASM, ASAA, NSF

Commercial Driver Health & Well-Being Phase II: VTTI Truckstop



Research Objective

Development of a dynamic and regularly updated website to draw interest and disseminate fatigue and health-related information to CMV drivers

Overview

- There is a growing awareness of CMV driver health issues
 - Obesity and sleep apnea concerns have attracted nationwide attention
- The CMV driving population is typically underserved in terms of health and wellness information
- Access to healthy foods and exercise facilities is limited for these individuals

Barriers to CMV Driver Health

- Most current outreach methods assume long-haul CMV drivers have the same facilities short-haul (or non-drivers) have
- In reality, long-haul CMV drivers face:
 - Limited fresh food storage and cooking equipment
 - Typically unhealthy, low-cost restaurant choices
 - Typically expensive healthy restaurant choices
 - Limited exercise and showering/hygiene facilities



Outreach Inspiration...

- Safe driving tips for truck drivers
- FMCSA-funded
- Positive feedback

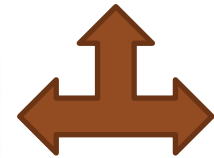
The screenshot displays the FMCSA website's 'CMV Web-Based Driving Tips Home Page'. The page features a navigation menu with links for Home, Rules & Regulations, Registration & Licensing, Forms, Safety & Security, Facts & Research, Cross Border, and About FMCSA. The main content area is titled 'CMV Web-Based Driving Tips Home Page' and includes a search bar. A left sidebar lists categories under 'Facts & Research', such as 'CMV Driving Tips', 'Project Background', 'Too Fast for Conditions', 'Unfamiliar Roadway', 'Inadequate Surveillance', 'Driver Fatigue', 'Driver Distraction', 'Following Too Closely', 'Inadequate Evasive Action', 'Documents', and 'References'. The main text explains that the website aims to raise awareness of common driving errors and provide tips through an accessible online tool. It mentions that the tips are supported by real-world video clips recorded in a naturalistic study by the Virginia Tech Transportation Institute (VTTI). The page also includes a footer with contact information for the FMCSA, including the address, phone number, and TTY.

<http://www.fmcsa.dot.gov/about/outreach/education/drivertips/index.htm>

The Healthy Driving Site

- The Healthy Driving site will:
 - Provide CMV drivers with targeted health information
 - Be a gateway to trustworthy health information from respected sources
 - Allow drivers to support one another through social networking

Traditional
Outreach
Website



Eating Healthy

- Making healthier choices
 - Low-fat, -sodium, and -calorie options
- Eating on the road
 - Cooking when you have minimal storage space and cooking equipment
 - Eating healthier at restaurants
 - Eating at truck stop buffets
- Eating better at home
 - Family support



Living Healthy

- Incorporating exercise
 - Finding time throughout the day to exercise
 - Including cardiovascular and strength training activities
- Minimal and portable equipment exercise
 - Foldable bikes
 - Portable weights and fitness tubes



Medical Screening & Privacy

- Will provide information on recommended medical screenings
 - Body mass index, blood pressure, cholesterol, vision
 - Medical certification and screenings

- Medical privacy online
 - Protecting health privacy
 - Other sources of information



Social Networking Components

- Provides drivers a way to communicate and support each other
- Provides a dynamic way to stay in touch with the target population
- Allows for links to be passed along within the driving communities
- Will help increase site utilization and overall site traffic



Take-Aways

- CMV drivers:
 - Face many challenges to good health
 - Are a typically underserved population with respect to health and wellness information
- Site launch planned for December 2010
- Both projects have been accepted for presentation at the *TRB International Conference on Commercial Driver Health and Wellness*

Questions?



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