Identifying Obstructive Sleep Apnea in the Commercial Truck Driver

Literature Review with Proposed Revisions to the Department of Transportation Medical Examination Form

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Project Objective

- Review Literature For Indicators of Potential Sleep Apnea in Commercial Motor Vehicle Operators.
- Focus On Physical characteristics and Questionnaires
Project Search Criteria For Sleep Apnea

- Physical Characteristics
- Risk Factors
- Diagnosis
- Obesity
- Neck Circumference
- Hypertension
- Diabetes
- Cardiovascular Disease
What Is Obstructive Sleep Apnea (OSA)?

- Serious Medical Condition
- Periods Of Apnea and Hypopnea
- Interference With Normal Sleep Cycle
- May Cause Fatigue During The Day
Challenges

- DOT Physicals Performed By Providers With Varying Knowledge of DOT Requirements
- Only 1 Question ON DOT Form For Screening OSA
- Current Process Fails To Adequately Identify Drivers With OSA
Importance Of Early OSA Identification For Truck Driver Population

- Long Hours
- Variable Work Patterns
- Variable Shifts
- Changing Shifts
- Potential For Disastrous Accident Results
OSA Symptoms

- Hypersomnia
- Loud Snoring
- Observed Apneas
- Headaches
- Sore Throat
OSA Potential Disease Relationships

- Hypertension
- Heart Disease
- Diabetes
- Possibly Depression
OSA Risk Factors

- Obesity
- Large Neck Circumference
- Narrowed Oropharynx
- Male Gender
- Age
- Hypertension
- Smoking
- Alcohol
- Sedatives
- Tranquilizers
Obesity And OSA

- Positive Correlation Between:
  - Waist-To-Hip Ratio
  - Waist Circumference

- OSA Affects Mainly Obese Individuals

- BMI Is An Indicator For OSA Risk
Neck Circumference And OSA

- Positive Correlation To Neck Circumference and OSA
- Greater Association For Males
Hypertension And OSA

- Routinely Encountered Among Truck Driver Population
- OSA May Cause Hypertension
- Treating Sleep Apnea Improves Hypertension
- Hypertension Medications Not Ideally Effective
- Hypertension May Be Used As An Indicator To Identify Sleep Apnea
Diabetes And OSA

- Type II Prevalent In Driver Population
- OSA May Lead To Altered Sugar Metabolism
- OSA May Predispose The Person To Type II Diabetes
- Prevalence of Sleep Apnea in Type II Diabetics is 36%
- Other Variables
  - Age Greater Than Or Equal To 62
  - BMI Greater Than Or Equal To 30
  - Snoring
  - Observed Apneas
Cardiovascular Disease

- Strong Correlation Between OSA and Cardiovascular Disease In Animals
- OSA May Cause
  - “Clinically Significant Arrhythmias
  - Arterial Fibrillation
  - Sudden Cardiac Death
Other Conditions

- No Correlation Between Allergic Rhinitis And OSA
- Higher Incidence of OSA With Depression
- Socioeconomic Status And Occupation Have Minor Correlation To OSA Which May Be Explained By Other Factors:
  - Smoking
  - Alcohol
- High Tonsils, High Tongue, & Wide Uvula Risk Factor For Males
- Large Tonsils & Retrognathic Mandible Risk Factors For Females
Recommended Tools To Assess OSA

- Blood Pressure Evaluation
- Neck Circumference
- Body Mass Index
- Diabetes
- OSA symptoms
Discussion

- OSA is a significant public health problem
- Identification of the commercial driver with OSA is important
- Changes to the Department of Transportation long form are required to ensure consistency of OSA identification
Conclusion

- There are identifiable risk factors for OSA
- These risk factors can be incorporated into the DOT long form
- Modifications of the DOT long form will ensure consistency in DOT certification
- Further studies are needed