

Federal Motor Carrier Safety Administration
Office of Analysis, Research and Technology



EFFECTS OF A FATIGUE MANAGEMENT PROGRAM ON FATIGUE IN THE COMMERCIAL MOTOR VEHICLE INDUSTRY

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ART Forum



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STUDY GOALS

- ◆ To implement a comprehensive FMP, involving:
 - Educational sessions at all levels of company
 - Driver sleep disorder screening and treatment
- ◆ To assess the implementation of the FMP through pre/post FMP comparisons of
 - Drivers' fatigue, sleep duration, satisfaction levels and performance
 - Corporate measures (e.g., absenteeism, claims) and perception of fatigue management practices and policies



PROCESS

- ◆ Submit protocol to ethics committee
- ◆ Recruit companies
- ◆ Present overview to management
- ◆ Set up stakeholder committee
- ◆ Set up implementation committee
- ◆ Recruit drivers
- ◆ Collect pre-FMP driver and corporate data
- ◆ Present educational program at all levels in company
- ◆ Screen for sleep disorders and provide treatment
- ◆ Collect post-FMP driver and corporate data



PARTICIPATING COMPANIES

- ◆ Québec
 - Robert Transport based in Montréal
- ◆ Alberta
 - ECL Group based in Calgary and Edmonton
- ◆ California
 - J.B. Hunt Transport (headquarters based in Arkansas) and operating in 48 states. Locations used in northern and southern California: Fresno, Ontario, and Tracy



PARTICIPATING CMV DRIVERS

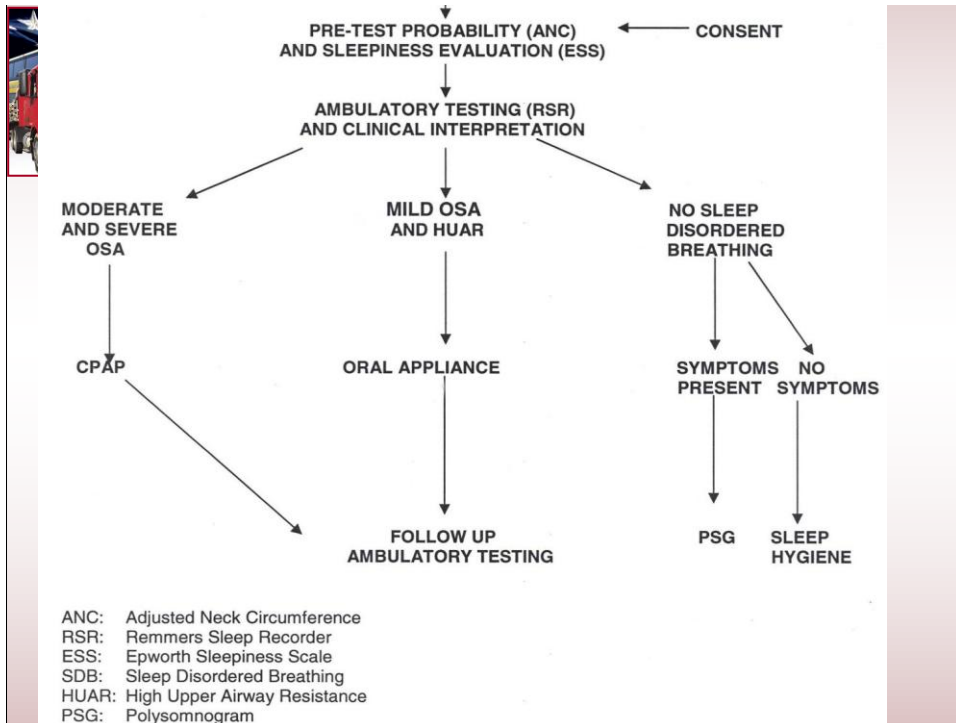
- ◆ Inclusion criteria:
 - Minimum 3 yrs. driver's licence, 1 yr. CMV licence, 1 yr. with company
- ◆ Target:
 - 40 per site, expectation of 30 for post-FMP
- ◆ Final numbers:
 - 23 Alberta
 - 29 Québec
 - 25 California

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EDUCATION PROGRAM

- ◆ 4 modules
 - Core
 - Trip Planning
 - Wellness and Lifestyle
 - Sleep and Sleep Disorders
- ◆ Train-the-trainer
- ◆ Educational quizzes
- ◆ Bi-monthly newsletters



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RESULTS OF SLEEP DISORDER SCREENING AND TREATMENT



SLEEP APNEA DIAGNOSIS n=94

Diagnosis (RDI hr. ⁻¹)	%
No Abnormality (< 5)	29
Mild (5 – 14.9)	39
Moderate (15 – 29.9)	23
Severe (≥ 30)	9
Total	100



SLEEP APNEA PREVALENCE

- ◆ 71% with sleep apnea is higher than usual prevalence:
 - Pack et al (2002) found 28% in similar population
- ◆ Treatment for sleep apnea ranked 2.3 on a scale of 0 to 3 re reason for treatment



ADHERENCE TO TREATMENT

- ◆ Defined as CPAP use >4 hours/70% of nights
- ◆ Quebec 60%
- ◆ Alberta 69%
- ◆ California 5%
- ◆ Standard treatment by independent sleep physicians at all sites



ADJUSTED NECK CIRCUMFERENCE PREDICTOR

- ◆ 95% moderate apneics and all severe apneics had ANC>43
- ◆ Caveat:
 - This population had higher than average prevalence (71% vs. 28% - Pack et al. 2002)
 - ANC may be less effective predictor in more typical population

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CHALLENGES: FMP EDUCATION

- ◆ Time commitment for FMP Education
 - Four 90-minute sessions had to be reduced
- ◆ Difficulty of bringing large groups of drivers together at the same time
 - Combined sessions; web training
- ◆ Difficulty of subject matter for trainers
- ◆ Train the trainer not possible at 2/3 sites



CHALLENGES: SLEEP APNEA SCREENING AND TREATMENT

- ◆ Issues re drivers, identified with sleep apnea, driving before treatment initiated
- ◆ Involvement of non-company insurers due to lack of availability of sleep clinics
- ◆ Reluctance of insurers to fully support treatment of sleep apnea in CMV drivers
- ◆ Adherence to treatment



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