Priorities in Occupation Health and Safety:

Fatigue

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Outline

• What is fatigue?
• Is it an issue?
• What can be done about it?
• Conclusions
What is Fatigue?

- **Symptoms**
  - sleepy
  - apathetic
  - lethargic
  - irritable
  - uncommunicative

- **Performance impairment**
  - alertness
  - attention
  - reaction time
  - short-term memory
  - cognitive processing (speed, flexibility)
  - uncontrolled microsleeps
Causes of Fatigue

**Work Factors**
- Job demands
  - workload & breaks
  - work duration
  - type of work
- Work organisation
  - rostering
  - work predictability

**Individual Factors**
- Human biology
  - sleep
  - body clock
  - health, age
- Life outside work
  - family & friends
  - standard of living
  - commuting

**Fatigue**
Is Fatigue an Issue?

- **1998 survey of NZ anaesthetists (70% response)**
  - 86% can recall a fatigue-related error in clinical practice
  - 32% in the last 6 months

- **1998 survey of locomotive engineers (71% response)**
  - 32% often/always nod off in the cab while moving by the end of night shift > 10 h (2%, day shift < 10 h)

- **2000 two derailments and a head-on train collision attributed to engineers falling asleep on the night shift (TAIC)**
Driver Fatigue

- **USA**
  - #1 truck safety issue
  - contributes to 30-40% of heavy truck crashes
  - probable cause of 31% fatal-to-driver crashes

- **Australia 1989-1992**
  - 33% workplace deaths on public roads
  - 26% commuting

- **1998 Survey of Locomotive Engineers**
  - 4% often/always fall asleep driving home after night shifts > 10 h
What Can Be Done About It?

- Individual Coping Strategies
- Company Policies & Procedures
- Codes of Practice
- Regulations
A fatigue management scheme shall take account of:

1. the rest period available prior to commencing duty
2. typical traffic for the shifts to be worked
3. the availability of rest, refreshment, and meal breaks
4. the availability of relief staff
5. circadian rhythms
6. short-term and accumulated sleep deficit
7. the shift rotation system in use
Fatigue Management for Commercial Vehicle Drivers

Operating Standards for Work and Rest in the Western Australian Road Transport Industry

- Basic principles and guidance on developing the FMS (factors to take into account, control measures, operational procedures)
  - Trip scheduling
  - Rostering of drivers
  - Readiness for duty
  - Driver health
  - Workplace conditions
  - Training and education
  - Responsibilities
  - Management of incidents
AMA National Code of Practice

Hours of work, shiftwork and rostering for hospital doctors

- Risk assessment audit (7-day period)
  - Voluntary diary of work/rest
- Risk assessment score sheet, risk rating
- Guidance on risk control
  - Design principles for schedules
  - Information, supervision, consultation, & training
  - Facilities and services
  - Monitoring and review
- Incident reporting and investigation
- Record keeping
Company Policies, Procedures

- Monitoring workforce status, work demands
- Education / training
  - operational staff and management
- Roster design and management
- Identifying and managing staff having fatigue-related problems
- Incident/accident investigation
- Creating a fatigue management culture
Individual Coping Strategies

• Strategies to use at home
  • practical strategies to improve sleep
  • currently no practical strategies to reset the body clock
  • responsibility to report fit for work
  • improved quality of life away from work
• Strategies to use at work
  • temporary improvements in performance and alertness
  • getting the job done safely
  • getting home safely
• Understanding company policies and procedures
Conclusions

- Workplace fatigue is a significant safety issue
- Evolution to chronic health problems is poorly understood
- Causes of fatigue are fairly well understood
- Need for a comprehensive approach
- Fatigue management tools are becoming available - validation is needed
- Resource issues for small companies