Fatigue Countermeasures Training

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Flight Attendant Fatigue

- **84% of flight attendants reported experiencing fatigue during their last bid period**
  - 71% reported that safety-related performance was affected

- **35% of flight attendants reported that their carrier provided fatigue training or education materials**
  - 79% reported that the fatigue training or education materials provided did not help to minimize fatigue

Training Benefits

- **Individual benefits of fatigue-related training across industries**
  - ✓ Greater fatigue knowledge
  - ✓ 49% made changes at work
  - ✓ 47% made changes at home
  - ✓ 61% thought recurrent training was a good idea
  - ✓ Some reported that the organization made positive changes

Gander, Marshall, Bolger, & Girling, 2005; Rosekind et al., 2001

Training Benefits

- **Individual benefits (cont.)**
  - ✓ Fewer workers found it difficult to..
    - Fulfill domestic responsibilities
    - Find time for entertainment and recreational activities
    - Believe that their health would improve with a different schedule
  - ✓ Gastrointestinal symptoms decreased
  - ✓ Use of excessive caffeine dropped (32% vs 8%)
  - ✓ Average sleep increased from 4.8 hrs to 5.8 hrs

Kerin & Aguirre, 2005

Training Benefits

- **Organizational benefits**
  - ✓ Reduced turnover and absenteeism
  - ✓ Fewer fatigue and morale problems
  - ✓ Increased worker perceptions safety
  - ✓ Fewer accidents and injuries
  - ✓ Even very seasoned workers have positive responses to fatigue training
    - 96% report using course lessons and plan to continue using course lessons

Arboleda, Morrow, Crum, & Shelley, 2003; Dinges, Maislin, Brewster, Krueger, & Carroll, 2005; Kerin & Aguirre, 2005; Moore-Ede, Heitman, Dawson, & Guttkuhn, 2005.

Current Project

- **Purpose:**

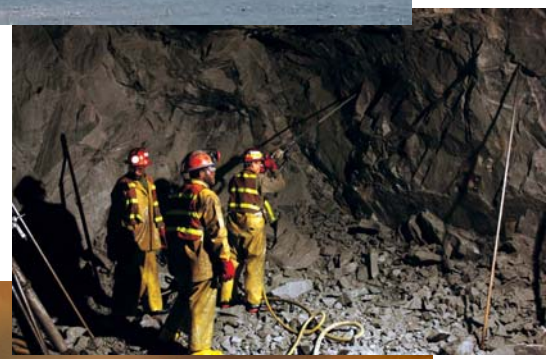
  Given the benefits of existing training programs, the purpose of the current project was to identify the essential components of a fatigue countermeasure training program for flight attendants

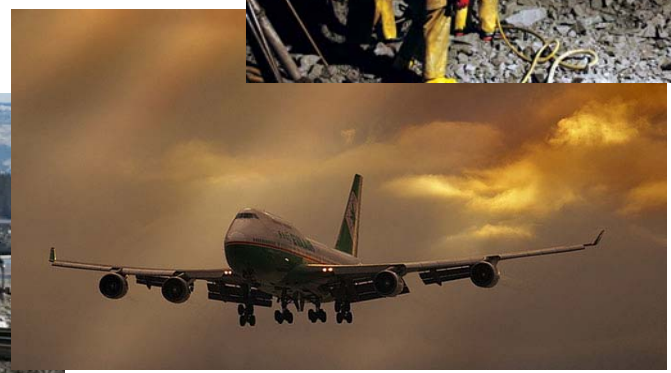
Method

- **Step 1: Review of existing training programs**
  - Identified existing fatigue-related training programs and materials
    - Scientific literature, public and private educational materials, fatigue researchers
  - Inclusion criteria
    - ✓ Provided education or training on fatigue management, shiftwork, or alertness management
    - ✓ Created or published after 1985
    - ✓ Included an outline and summary

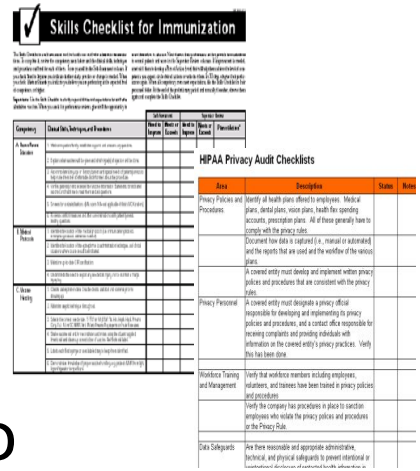
Method

- **Step 1 results:**
  - 49 usable training programs
    - Multiple audiences
    - Multiple media venues
    - Outline vs full training programs





Method


Skills Checklist for Immunization

HIPAA Privacy Audit Checklists

Area	Description	Status	Notes
Privacy Policies and Procedures	Identify all health plans offered to employees. Medical plans, dental plans, vision plans, health flex spending accounts, prescription plans. All of these generally have to comply with the privacy rules.		
	Document how data is captured (i.e., manual or automated) and the reports that are used and the workflow of the various plans.		
	A covered entity must develop and implement written privacy policies and procedures that are consistent with the privacy rules.		
Privacy Personnel	A covered entity must designate a privacy official responsible for developing and implementing its privacy policies and procedures, and a contact office responsible for receiving complaints and providing individuals with information on the covered entity's privacy practices. Verify this has been done.		
Workforce Training and Management	Verify that workforce members including employees, volunteers, and trainees have been trained in privacy policies and procedures.		
	Verify the company has procedures in place to sanction employees who violate the privacy policies and procedures or the Privacy Rule.		
Data Safeguards	Are there reasonable and appropriate administrative, technical, and physical safeguards to prevent intentional or		

- **Step 2: Content analysis**
  - Reviewed existing training programs to develop a comprehensive outline of topics
    - 37 topics coded
  - Two raters independently identified the presence of each topic within each training program
    - Must include at least 3 sentences or at least 1 prescriptive, specific prescriptive recommendation
    - Inter-rater agreement (κ = .85)

Results

- **Step 3: Developed topic outline**
  - Identified topics to be included in the final training outline
    - Fatigue experts agreed consistently on the most important topic areas
      - Differences were mostly a function of the level of detail and the specific focus of the training program
      - All topics included in at least 8 programs

Recommend that they all be included to create a comprehensive fatigue countermeasure training program

Results

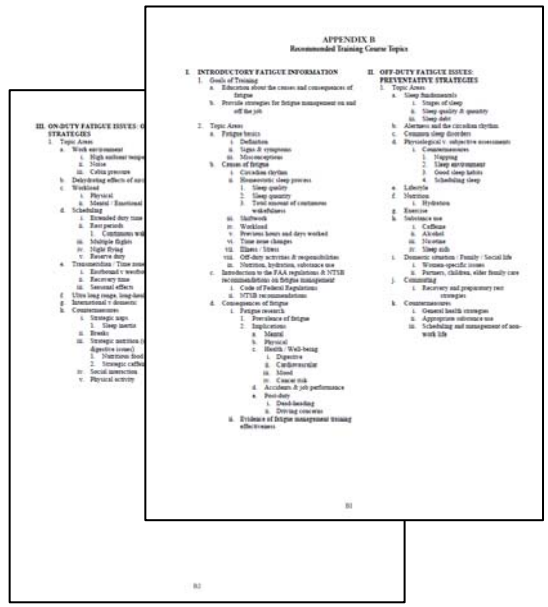
Topic	Overall (n=49)	Aviation (n=13)
Fatigue	100%	100%
Circadian Rhythm	82%	100%
Sleep	90%	100%
Napping	61%	92%
Work hours	71%	77%
Nutrition	69%	85%
Hydration	31%	54%
Exercise	61%	85%

Results

Topic	Overall (n=49)	Aviation (n=13)
Substances	**71%**	**92%**
Sleeping Disorders	**53%**	**77%**
Family & Social Life	**53%**	**38%**
Work Environment	**45%**	**46%**
Commuting	**35%**	**38%**
Jet Lag (n=8)	**n/a**	**100%**
Exercise	**61%**	**85%**

Organizing the Training Outline

- **Step 4**
  - Topics were sorted into three primary areas
    - Basic fatigue information, off duty rest and activities, on duty specific issues
  - Each topic was further delineated
- **Final product**
  - A comprehensive fatigue countermeasure training outline



Conclusions

- **Mitigating fatigue is a challenging proposition**
- **Well-developed training can help to manage fatigue in aviation operations**
  - Individual benefits
  - Organizational benefits
- **Training is the first step in active fatigue risk management**
- **Proviso**
  - Training is only part of the solution
  - It cannot extend human physical and mental capabilities

Questions?

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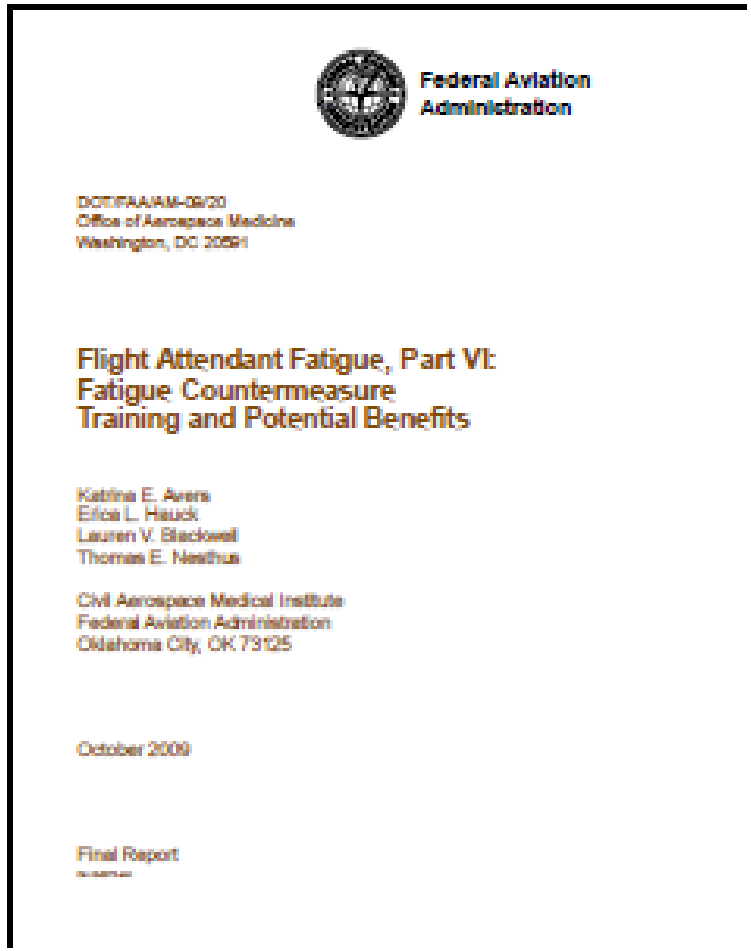

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Final Report

http://www.faa.gov/library/reports/medical/oamtechreports/2000s/media/200920.pdf

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