Quick Review of the NRT Fatigue Management Guidance
NI EHS Workshop, 10-7-14

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My presentation is in 2 sections

Review key literature on fatigue

Review NRT guidance on fatigue management
FIRST SECTION:
Overview of the literature on fatigue

Dr. Claire Caruso, NIOSH developed this overview
There are 2009 National Response Team volumes on fatigue management.

Technical Assistance Document

Volume I
Guidance for Managing Worker Fatigue During Disaster Recovery Operations
Technical Assistance Document

Volume II
Guidance for Managing Worker Fatigue During Disaster Recovery Operations: Background Operations
We’ll start with Volume II, the background document

Excellent literature search by Jan Shubert, EPA and Claire Caruso, NIOSH
KEY POINT: Responders can not recognize their own decline or have enough training or experience to avoid it.

Arendt et al., 2005; Van Dongen et al., 2003
Shift work leads to shorter sleep patterns with more disturbances

One-third of night workers experience long-term insomnia and excessive sleepiness

(Drake et al. 2005)

12 hour shift, USAR Team members, Kansas grain elevator explosion 1998, FEMA
17 hours awake impairs performance similar to being drunk

17 hr awake = BAC 0.05%
24 hr awake = BAC 0.10%
(NC MS Units: 3.5)

(Dawson & Reid, 1997; Williamson & Feyer, 2000; Arendt et al. 2005)

After 12 hour shift, Dennis Clark, Kansas grain elevator explosion 1998, FEMA
Injury risks increase across Duty Hours

Folkard & Lombardi (2006) pooled findings from 4 studies

- 10-hr shifts increased risk by 13%
- 12-hr shifts increased risk by 28%

Dembe et al. (2005) indicates possible dose response: injury rates increase as work hours increase
Working the night shift poses greater risk of incidents (5 studies)

FEMA DMAT, 2008
Hurricane Ike

Folkard & Lombardi, 2006
Literature on long hours

There are fewer studies, but the number is growing

FEMA, Winfield, MO
6-08
Long work hours result in higher injury rates
Dembe et al. Occup Environ Med 2005

- 110,236 job records for nationally representative sample of U.S. workers over 13-year period
- 61% higher injury rate for workers in jobs with overtime schedules
Shift work and long hours impact families

- Delay of marriage, childbearing (Jacobs, 2004)

- Divorce: men 6 fold increase; women 3 fold increase (Presser, 2000)
Second section: Overview of the NRT Guidance
NRT guidance does *not* cover the rescue phase, which is often the most exhausting.
Volume I, the Technical Assistance Document, manages fatigue at two levels:

1. Organizational Program
2. Incident-Specific Plan
The agency program and site plan have common elements

1. Assessment
2. Identification of fatigue risk factors
3. Controls
4. Evaluation
The guidance contains a risk assessment tool

- Evaluates added risk due to fatigue
- Considers exposure and severity weight factors

Can we work this into training?
The NRT guidance focuses on five key risk factors and stressors

1. Time
2. Living conditions
3. Nature of work
4. Site conditions
5. Emotional issues
How many now use the NIEHS Clearinghouse pocket guides?

PowerPoints and pocket guides for:

- Hurricanes
- Wildfires
- Earthquakes
- Dirty bombs
- Avian Influenza
- Japanese response

http://tools.niehs.nih.gov/wetp/
Discussions questions

1. Does your organization already have training materials on fatigue?
2. Would you be able to modify existing training to include a module on fatigue management? If so, what curricula?
3. What is the ideal method for integrating climate change training into our programs?
4. What value is the NRT fatigue guidance for our work?
Thank you.
Any questions?

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