DHS Resiliency Workshop Summary
(with an emphasis on concrete things we can do for law enforcement)

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For CPOA & other line-oriented talks, move What to DO up to right after Q&A. Stop giving so much detail about What to KNOW, you say those things during the discussion anyway.

Bryan Vila, 8/17/2011
Police officers killed, annual U.S. rates
Felonious & Accidental (FBI, LEOKA, 1980-2009), Suicide (CDC, NOMS, 1984-98)

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Overview

• Using police fatigue as a high-priority target for resilience promotion:
  – Establish benefits of workforce resilience for law enforcement and other personnel
  – Illustrate alternatives for framing problem and fostering change in DHS organizations and individuals
  – ID research and program development efforts in policing that can inform DHS resiliency initiatives
  – ID gaps in knowledge and technology
Fatigue and performance

- Fatigue associated with sleep loss, hours of work and circadian factors interferes with ability to:
  - Form sound judgments
  - Deal with complex, stressful situations
  - Assess fatigue-related impairment

- Fatigue also:
  - Narrows perception
  - Increases anxiety and fearfulness
  - Reduces perspective and understanding
  - Degrades cognitive ability
  - Increases irritability, hostility, and tendency to shift blame

Change to fatigued state REDUCES RESILIENCY
Managing fatigue improves resiliency, wellness and performance

...and objectives accomplished

Officer Work Capacity × N Officers

Health/Wellness
Nutrition
Sleep
Physical Activity
Domestic Life

Resiliency
Sleep
Coping
Domestic Life

Demands for Service

Management

Actual Services Provided

Understaffing

Overwork & Job Stress

Under Vila & Samuels, 2011, Principles & Practices of Sleep Medicine, 5th Edition, Ch. 72

Bryan Vila, CPOA 26May11
Day-to-day fatigue REDUCES RESILIENCY

- Short-term sleep loss affects performance in the types of on-duty events that most frequently kill or seriously harm law enforcement officers:
  - Traffic crashes
  - Confrontations
Career-long fatigue **REDUCES RESILIENCY**

- **Chronic sleep deprivation** elevates risks of:
  - cardiovascular, gastrointestinal and metabolic diseases
  - chronic insomnia, sleep apnea and other sleep disorders
  - psychological disorders, depression, suicide and family dysfunction
Like most resiliency-related problems, fatigue management requires cooperation.

**CAUSES OF EMPLOYEE FATIGUE:**

- Sleep disruption & overwork due to:
  - Shift work & schedule changes
  - Overtime & extra shifts
  - Moonlighting
- Recreational, family & personal activities

_Educate, Collaborate, Refine!_
TIRED COPS: Managing Officer Fatigue to Promote Safety, Health and Performance

Reduces Organizational & Individual Resiliency

- Sleep-related fatigue:
  - Decreases attentiveness
  - Impairs physical and cognitive functioning
  - Worsens mood

- Fatigue fuels vicious cycles:
  - Fatigue reduces ability to deal with stress
  - Stress reduces ability to deal with fatigue
  - Stress and fatigue increase vulnerability to disease

→ Increased absenteeism
→ Increased overtime
→ Increased fatigue
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Relevant ongoing research

- Buffalo Cardio-Metabolic Police Stress study (BCOPS)—NIOSH & NIJ
- Stress and Subclinical Cardio-Metabolic Disease in Police: A Longitudinal Study (BCOPS II)—NIOSH
- Prospective Study of PTSD in Police Officers—NIMH & NIJ
- Safety & Health Improvement: Enhancing Law Enforcement Departments (SHIELD)—NIOSH
- Evaluating the Effects of Fatigue on Police Patrol Officers and Their Relations with the Community—NIJ
- Impact of Work-Related Fatigue on Deadly Force Judgment and Decision Making Performance and Driving Performance Among Day vs. Night Sleepers—CalPOST & ONR
- Developing a Common Metric for Evaluating Police Performance in Deadly Force Situations—NIJ
- Sleep Disorders Management, Health and Safety in Police—NIOSH & NIJ
Knowledge gaps

• How to experimentally measure resiliency baseline for individuals?
  – Simulation tests of adaptability to sequence of radically different operational challenges?

• How to measure fatigue risks for law enforcement officers? For example:
  – Impact of fatigue on situational resilience?
  – Max. hours on duty for different assignments?
  – Ideal timing of shift changes?
  – Staffing and distraction in patrol vehicles?
TIRED COPS: Managing Officer Fatigue to Promote Safety, Health and Performance

Performance capability measurement in real time!
Sample of Tired Cops publications

1. The Effects of Officer Fatigue on Accountability and the Exercise of Police Discretion (2010)
4. Police suicide: a national comparison with fire-fighter and military personnel (2009)
5. Managing Police Fatigue is a High-Wire Act (2008)
9. Obesity and Sleep: The Buffalo Police Health Study (2007)
10. Impact of Long Work Hours on Police Officers and the Communities They Serve (2006)
TIRED COPS: Managing Officer Fatigue to Promote Safety, Health and Performance

Police lost-work injuries & fatalities

Adapted from Houser et al. 2004, RAND
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• 53% of police get less than 6.5 hours of sleep daily (vs. 30% of general public)
• U.S. & Canadian officers reported (n=2,566):
  - 91% being fatigued routinely
  - 14% usually tired at beginning of work shifts
  - 85% driving while drowsy
  - 39% falling asleep at the wheel

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Sleep and cognition
Results from 2-3 min. serial addition/subtraction test every 2 hrs.

Belenky et al. (2003)
TIRED COPS: Managing Officer Fatigue to Promote Safety, Health and Performance

Sleep restriction and vigilance

Belenky et al. (J Sleep Res 2003)
Brain logistics

• Brain cells burn glucose to process information
• Insufficient sleep degrades brain function:
  – Lapses in attention increase
  – Signal quality in the brain decreases
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Preliminary evidence about cops...

- Police officer (n=30) performance during 1h simulator drive.
- Night shift = after 5 consecutive night shifts; Control = same time of day after three days off.
- Lane position deviation ($F_{1,78}=10.13, P=0.002$) and PVT lapses of attention ($F_{1,161}=13.73, P<0.001$).
Extended operations

- **Reduce risks, get the job done!**
  - Use fatigue knowledge to adapt, overcome, improvise
- **Understand sleep logistics:**
  - Schedule smart
  - Staff to share knowledge & reduce fatigue
  - Counter time-on-task: *rotate staff roles*
  - Counter time-on-duty: *schedule naps*
- **Use check lists**
- **Look out for your fellow officers**

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Change organizational culture

• Common ground for change:
  – Managers can’t say no to risk management and human capital management issues.
  – Labor can’t say no to safety and health issues.
  – *Rely on hard scientific evidence!*

• Build accountability
• Set a timeframe for change
• Measure progress
Learn from experience

• Critique fatigue management in after-action debriefings.
  – Involve entire team
  – Collect and analyze data
• Use lessons learned to improve counterstrategies
• Build fatigue management into procedures, policies, rules.
• Consider only scientifically validated technologies:
  – Wrist actigraphs
  – Fatigue risk-assessment modeling