PROMOTING PHYSICIAN WELLNESS

Dana O. Mato Psy.D.
Behavioral Medicine Program Coordinator,
FIU Family Medicine Residency
West Kendall Baptist Hospital
Clinical Assistant Professor, FIU Department of Psychiatry
Clinical Child/Pediatric Health Psychologist
Child Psychology Associates, P.A.

Objectives

- Recognize the Signs of Fatigue & Sleep Deprivation
- Describe the impact of sleep loss and fatigue of cognitive function and performance
- Learn strategies for Alertness Management and Fatigue Mitigation
- Review the medical literature supporting ACGME guidelines for work hour restrictions
- Describe other signs of physician impairment such as burnout, depression and substance abuse

The Epworth Sleepiness Scale

How likely are you to doze off or fall asleep in the following situations, in contrast to just feeling tired? This refers to your usual way of life in recent times. Even if you have not done some of these things recently, try to work out how they would have affected you. Use the following scale to choose the most appropriate number for each situation:

<table>
<thead>
<tr>
<th>Situation</th>
<th>Chance of Dozing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seated, reading</td>
<td>0</td>
</tr>
<tr>
<td>Watching TV</td>
<td>1</td>
</tr>
<tr>
<td>Sitting, inactive, in a public place</td>
<td>2</td>
</tr>
<tr>
<td>As a passenger in a car for an hour</td>
<td>3</td>
</tr>
<tr>
<td>Lying down in the afternoon</td>
<td>1</td>
</tr>
<tr>
<td>Sitting and talking to someone</td>
<td>2</td>
</tr>
<tr>
<td>Sitting quietly after a lunch without alcohol</td>
<td>3</td>
</tr>
<tr>
<td>In a car, while stopped for a few minutes in traffic</td>
<td>1</td>
</tr>
</tbody>
</table>
Fatigue: Definition

- A state of exhaustion or extreme tiredness
- Overwhelming
- Globally affects functioning

- Different than simply being tired

Safety

- Your ability to safely care for patients is dependent, in part, on your being well rested or using fatigue mitigation strategies if on a long/overnight shift.
**Impact of Fatigue**

- 1999 Institute of Medicine report
  - 48,000 to 98,000 deaths due to preventable medical errors
  - Hospital-based errors were the 8th leading cause of death in the US: ahead of breast cancer, AIDS, and motor vehicle accidents
  - 50% of hospitalized patients affected by medical error
  - Numerous reports implicated fatigue as source of errors
  - Patient Safety
    - “We deserve competent health care from well rested physicians” - Public Citizen 2003

**Impact Continued**

- In 1999 and 2000, 8% of programs and institutions reviewed by the ACGME were cited as being in violation of their work-hour requirements
  - Work-hour violations were noted in general surgery (35%), pediatrics (16%), internal medicine (10%) and other training programs as well

**Wake Up to the Facts**

- Physicians-in-training working traditional schedules with recurrent 24-hour shifts:
  - Make 36% more serious medical errors than those whose scheduled work is limited to 16 consecutive hours
  - Make 5 times as many serious diagnostic errors
  - Suffer 61% more needle stick and laceration injuries after their 20th consecutive hour of work
  - Double their risk of a motor vehicle crash when driving home after 24 hours of work

References:

- Marcus C., et al. Sleep, 1986
- Harvey I, et al., JAMA, 1996
- Szklo-Coxe MPLoS Medicine. 2006
- Joint Commission on Accreditation of Healthcare Organizations 2008
Facts Continued

- Experience a 1.5 to 2 standard deviation deterioration in performance (relative to baseline rested performance on both clinical and nonclinical tasks)
- Suffer decrements in performance similar to those induced by a blood alcohol level of 0.05 to 0.10%
- A full day without sleep to a blood alcohol level of 0.1% (Dawson D, et al. Nature. 1997)
- Sleep deprivation has a DIRECT negative impact on short-term memory and neurobehavioral performance

  - Steele MT, et al. Acad Emerg Med. 1999
  - Joint Commission on Accreditation of Healthcare Organizations 2008

ACGME Duty Hour Regulations: Overview

Limits on duty hours:

- 80 hours maximum per week
- 24 hours maximum per shift; additional 6 hours allowed for transfer of care
  - Exception: PGY-1 residents must not exceed 16 consecutive hours
- 1 day in 7 free of patient care responsibilities
- In-house call only every 3 nights
- 10-hour minimum rest period should be provided between daily duty periods and after in-house call

acgme.org

Who is at Risk for Fatigue?

- Insufficient sleep
- Fragmented sleep
- Pagers, phone calls, emergencies
- Circadian rhythm disruption
  - Night float
- Genetic Factors
  - Some people need more
- Medical Implications
  - Sleep Apnea
  - Insomnia
- Psychosocial Stressors
### Signs of Fatigue

- Involuntary nodding off
- Waves of sleepiness
- Problems focusing
- Lethargy
- Irritability
- Mood lability
- Poor coordination
- Difficulty with short-term recall
- Tardiness or absences at work
- Inattentiveness to details
- Impaired awareness (fall back on rote memory)

### Fatigue-Related Impairment

- Irritability, moodiness, and disinhibition
- Frontal lobe signs
  - Apathy, impoverished speech, flattened affect
  - Impaired memory
  - Inflexible thinking and impaired planning skills—an inability to be novel or to multitask
- Intrusive sleepiness
  - Microsleeps (5 to 10 seconds) cause lapses in attention
  - Nodding off when sedentary
  - REM phenomena (hypnagogic hallucinations)


### High Risk Times For Fatigue-Related Impairment

- Midnight to 6 am
- Early hours of day shift
- First night shift or call the night after a break
- Change of service
- First 2 to 3 hours of a shift or end of shift
- Early in residency or when new to night call
### How Much Sleep Is Enough?
- The amount that allows you to feel alert when rested and relaxed
- There is little variation of sleep need (8.2 hours) among individuals
- One night with 2 hours less than your usual sleep is sufficient to affect waking performance
- After several nights of 5-hour sleep, most adults do not realize they are pathologically sleepy

### Sleep Hygiene
- Consistent bedtime routine
- Relaxation techniques
- Sleeping environment
  - Cooler temperature
  - Dark (eye shades, room darkening shades)
  - Quiet (use ear plugs, white noise)
  - Digital Detox (turn off electronics!)
- Avoid going to bed hungry, but no heavy meals within 3 hours of sleep
- Get regular exercise, but not within 3 hours of bedtime
- Protect your sleep time; enlist your family & friends!

### Fatigue Mitigation: Napping
- **Pros:** Naps temporarily improve alertness.
- **Types:**
  - preventative (pre-call)
  - operational (on the job)
- **Length:**
  - 20 minutes or 90 minutes.
  - 60 minutes causes waking in the REM leading to feeling of more irritable, less refreshed and more disoriented.
  - Nap during the call/shift especially if you are tired or didn’t get adequate day sleep. Shorter, more frequent napping (15-45 minutes every 2-3 hours) helps avoid sleep inertia.
  - Naps take the edge off but do not replace adequate sleep
Fatigue Mitigation: Caffeine

- Several studies have shown that strategic use of caffeine can help mitigate fatigue
- 300mg of caffeine significantly increased alertness for approximately 7.5 hours
- Caffeine improved performance for 6 hours
- 300mg caffeine equivalent to 3-4 hour prophylactic nap

Caffeine Continued

- Strategic consumption is key
- Effects within 15 – 30 minutes; half-life 3 to 7 hours
- Use for temporary relief of sleepiness and only when working and feeling sleepy (not when awake or on weekends)

- Cons:
  - disrupts subsequent sleep (more arousals)
  - tolerance may develop
  - diuretic effects
  - overconsumption can be counterproductive
  - leads to irritation, poor concentration, “tired, but wired”

Caffeine Intake

- Coffee 6oz. → 115mg
- Espresso 1oz. → 90mg
- Mountain Dew 12oz. → 54mg
- Coke 12 oz. → 46mg
- Dark Chocolate → 20mg
- Red Bull 240ml → 80mg
- Latte/Cappuccino 6oz. → 90mg
- Coffee (Grande) → 550mg

http://www.cspinet.org/new/cafchart.htm
Drugs

- Caffeine & Methamphetamines:
  - ↑ sleep latency
  - ↑ sleep fragmentation
  - ↓ Deep sleep

- Alcohol:
  - ↓ sleep latency
  - ↑ sleep fragmentation in second half of night

- Nicotine:
  - ↑ sleep latency and sleep fragmentation

Drowsy Driving: Signs

- Trouble focusing on the road
- Difficulty keeping your eyes open
- Nodding
- Yawning repeatedly
- Drifting from your lane, missing signs or exits
- Not remembering driving the last few miles
- Closing your eyes at stoplights

Drive Smart, Drive Safe

What works

- AVOID driving if drowsy.
- Don’t drive 2 AM to 9 AM.
- If you are really sleepy → get a ride home, take a taxi, or use public transportation.
- Take a 20 minute nap and/or drink a cup of coffee before going home
- Stop driving if you notice the warning signs of sleepiness
- Pull off the road at a safe place, take a short nap
Epworth Sleepiness Scale

Sleepiness in residents is equivalent to that found in patients with serious sleep disorders.

Mustafa & Strohl, unpublished data. Papp, 2002

Review: Signs of Clinical Fatigue
- Moodiness, irritability
- Impoverished speech or flat affect
- Impaired problem solving
- Sedentary nodding off (e.g. during conference)
- Medical errors
- Micro-sleeps (5-10 second lapses in attention)
- Repeatedly checking work
- Difficulty focusing on tasks

Review: Effects of Fatigue
- Fatigue impairs cognition and performance.
- As little as 2 hours fewer than the usual amount of sleep produces declines in performance.
- Worsens progressively as the length of time without sleep lengthens
- After 1 night of no sleep, baseline cognitive performance in residents decreases by about 25%.
- Multiple studies show an increase in errors, time required to perform surgery/procedures, and propensity toward accidents due to sleep deprivation.
Impairment: Depression

- Major depression affects 20% of women and 10% of men (same rates for physicians)
- Suicide rates are higher for physicians
- High rates of depression occur among residents
  - 30% of first-year residents report depressive symptoms for an average of 5 months
  - Some reported to have suicidal ideation with plan
- Treatment is very effective!

SIGECAPS
- Sleep, Interest, Guilt, Energy, Concentration, Appetite, Psychomotor, Suicidal

Impairment: Substance Abuse

- Similar rates to general public: 14% alcohol and 6% for substances
- Of 45 interns here, 7 alcohol and 3 substances
- Top 4 for physicians:
  - Alcohol
  - Marijuana
  - Opioids (usually prescription)
  - Stimulants (Ritalin, amphetamines)
- Addicted physicians can continue to function at high levels for a long time before their performance at work is impaired
Impairment: Substance Abuse

- It is your professional duty to patients and your colleagues to report behavior that could indicate possible substance abuse to your program director
  - Isolation, withdrawal
  - Diminished clinical performance
  - Erratic behavior
  - Recurrent lateness or absences
  - Deterioration in personal hygiene or dress
  - Smell of alcohol on breath or writing prescriptions for stimulants or narcotics for self

Impairment: Burnout and Compassion

Fatigue

- Definition: loss of emotional, physical and mental energy
- Estimated 25% of physicians
- Symptoms:
  - Emotional exhaustion (lack of empathy)
  - Depersonalization (feeling like you are just going through the motions)
  - Lack of self worth and sense of accomplishment

Impairment: Burnout Self Assessments

- The Burnout Self Test: www.mindtools.com/stress/Brn/BurnoutSelfTest.htm
- The Compassion Fatigue Test: www.isu.edu/-bhstamm/tests/satfat.htm
Impairment: Resources

- Employee Assistance Program / LifeWorks
  - FREE
  - CONFIDENTIAL – your use of program is never reported to the hospital or your program
  - Help with stress, relationship problems/divorce, parenting or childcare, financial difficulties, chemical dependency, depression or anxiety
  - Provides short term counseling and referrals to other services

References

- ACGME Common Program Requirements 2011 (ACGME.ORG)
- Mustafa & Strohl, unpublished data. Paep. 2002