



# New Strategies in Achieving Duty Hour Compliance

**AACPD 2011**

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# Disclosures

- No funding relative to this talk
- No conflict of interest



# Objectives

- Compare 2003 vs current policies.
- Summarize the unintended consequences of the implementation of the 2011 ACGME requirements.
- List strategies employed to comply with duty hours and mitigate fatigue.
- Develop an appreciation for the existing literature regarding patient safety and duty hours changes.



# Duty hours for PGY-1

2003

- 30 hrs (24+6)
- Q3, averaged
- 10 hrs interval
- No limit on nights in row (night float)
- 1/7 days off, averaged, =4 per month
- Internal moonlighting included

2011

- 16 hrs in house
- n/a
- 10 should, 8 must
- 6 max night float
- 1/7 days off, averaged over four weeks
- No moonlighting allowed



# Duty hours for PGY-2+

2003

- 30 hrs (24+6)
- Q3, averaged
- 10 hrs interval
- No limit on nights in row (night float)
- 1/7 days off, averaged, =4 per month
- Internal moonlighting included

2011

- 24 +4 hours (14 hrs off)
- Q3, averaged
- 10 should, 8 must
- 6 max night float
- 1/7 days off, averaged over four weeks
- All moonlighting included



# Duty Hour and Supervision Requirements

- Comparison table of 2003 vs 2011 requirements
- 61 versus 254 lines of text

<http://www.acgme.org/acWebsite/dutyHours/dh-ComparisonTable2003v2011.pdf>



# Impact on Anesthesiology

- Review of practices since 2003 rules
- Largely compliant
- Residents: improved education environment, quality of life improved
- Faculty: increased workload
- ? Improvement in patient safety or trainee education



# Strategies Employed

- Shorter shift duration
- Creative scheduling
- Night float
- Other providers



# Results

- Increased number of handovers
- Increased risk of missed information
- Decreased “ownership” of patients
- Conflicts in professionalism



# Difficult situation for trainees

- Loss of opportunity to learn coping skills for future job requirements while in a supported environment
- Conflict between professionalism and duty hours obligations and reporting obligations



# PGY 1 RESIDENTS



# PGY-1 residents

- **More strict requirements**
  - Duty hours
  - Supervision
- **Your responsibility**



# PGY-1 Duty Hours

- Limit of 16 hours
- 6 night limit for night float
- No moonlighting



# PGY-1 supervision

- **Directly**
  - Supervisor physically present with resident and patient
- **Indirectly with direct supervision immediately available**
  - Supervisor is physically in the building and immediately available for direct supervision



# Who is a qualified supervisor for PGY-1?

- Faculty
- Senior residents and fellows
- Program must evaluate resident ability to supervise
- Criteria for PGY-1 residents to be indirectly supervised without immediate availability



# PGY-1 and 16 hours

- New schedule, all shifts <16 hours
- Pediatric wards
- No increase in staffing or decrease in case numbers
- Patient care metrics unchanged
- Residents worked fewer hours



# But....

- Trend toward decreased perception of educational value
- Less well-prepared for cross coverage
- Decreased balance of personal and professional life
- More episodes of <10 hrs off



# Another strategy

- Study of PGY-1 trainees in ICU environment
- Traditional (q 3 night, 30 hrs) compared with modified schedule (max 16 hrs)
- Sleep log, polysomnogram and electrooculograms
- Required adding another intern



# Results

- Intervention resulted in increased sleep of trainees
- Intervention decreased attentional failures during night hours
- Decreasing hours not the sole solution
  - Must consider science of sleep
  - Schedule allowed napping prior to night shifts



# PGY 2-4 RESIDENTS



# PGY-2 + Duty Hours

- Scheduled for maximum of 24 hrs plus transition time up to 4 hours
- Should have 10, must have 8
- At least 14 hours free after 24 hr duty



# PGY-2+ supervision

- Intermediate years: PGY2-4 years
- Not yet achieved goals of core rotations
- Not fulfilled all minimum case requirements



# Final year of training

- Final year: Has achieved goals of all core rotations and met minimum case requirements
- Can “happen” before CA-3 year
- Attempt to address issues of transition to practice
  - Some variance with duty hours allowable with justification and monitoring



# IMPACT OF DUTY HOURS STRATEGIES



# Impact on clinical experience

- For OB and surgery
  - Variable results on surgical case volume
  - Better studies showed decrease in operative cases in surgery



# Impact on education outcomes

- Increased time for reading
- Test scores (ABSITE, OB intraining exam)
  - OB: minimal change
  - Surgery: ABSITE Scores
    - Positive or neutral effect in best studies
    - No study reported negative trend



# Night Float

- More hours of sleep on call\*
  - When added to team—allows nap
- Increased difficulty with sleep
- Trend toward decreased educational value
- No change in measurements of stress/  
depression
- Perception of “shift work” by faculty



# Work Hours, Sleep and Safety

- Three pediatric training programs
- Self-reported logs of hours
- Reported events:
  - Medication errors
  - Occupational exposures
  - Near-miss and actual motor vehicle crashes
  - Screened for depression and burnout

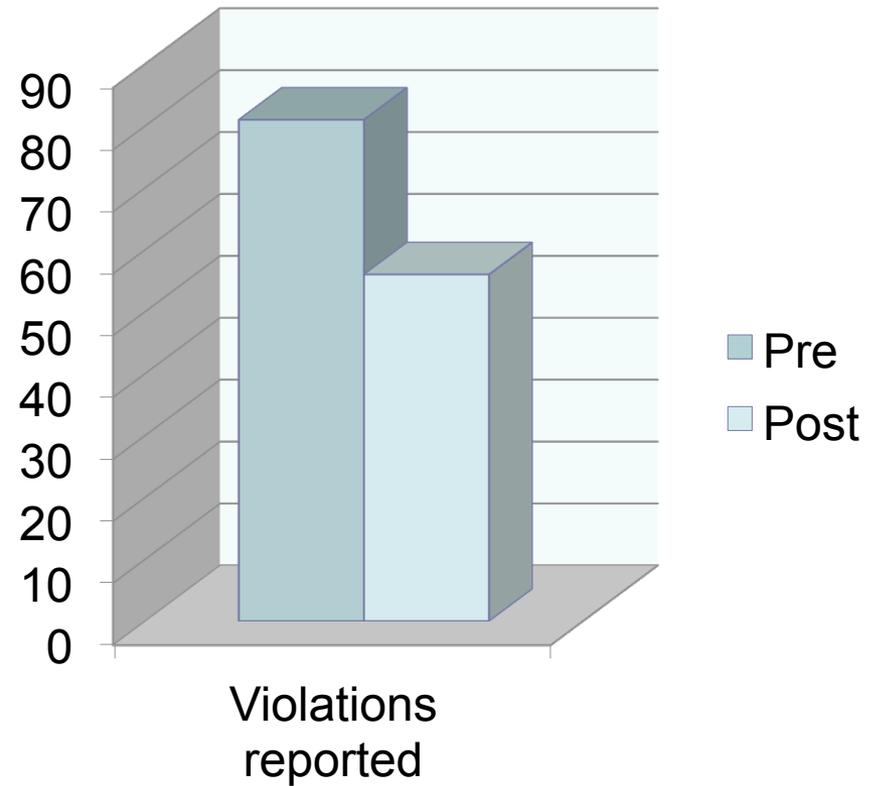
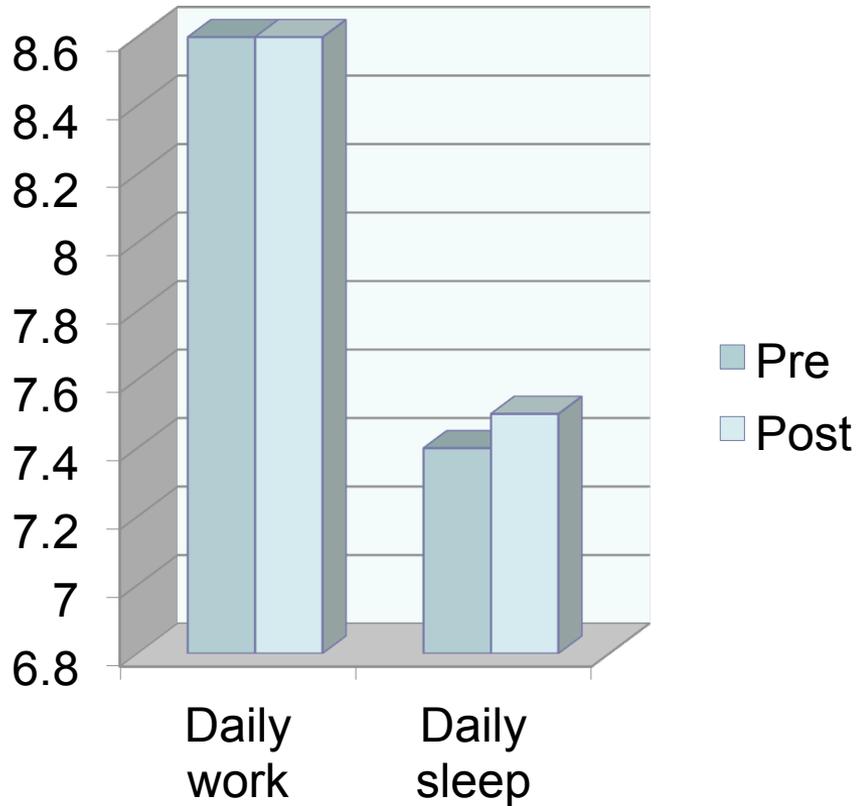


# Intervention

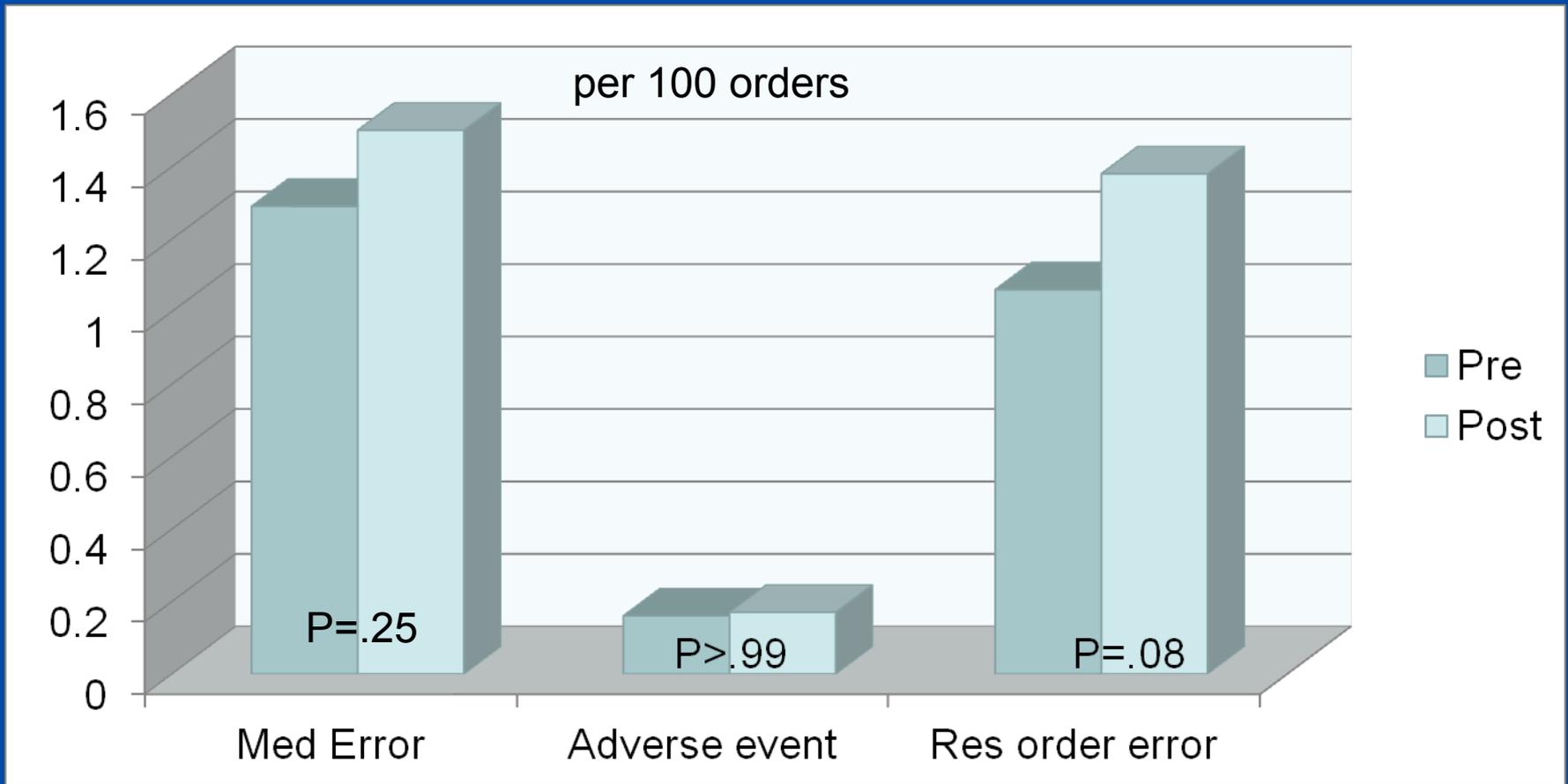
- **Preimplementation:**
  - >30 hr shifts and 80 hr weeks frequent
- **Implementation:**
  - Adherence to 2003 guidelines
  - Enforcement of departure times
  - Non-teaching service
  - Additional hires



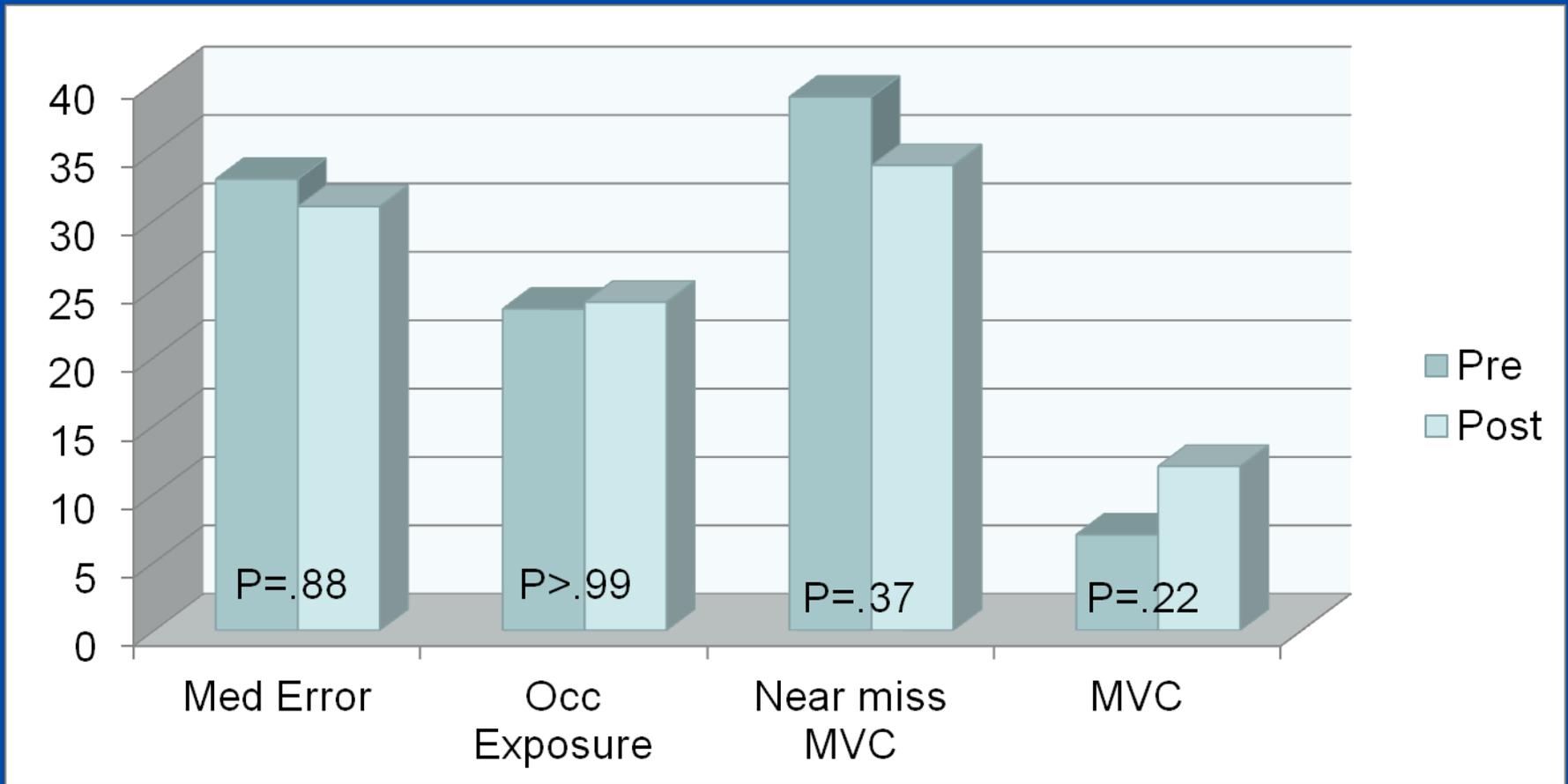
# Work hours results



# Patient safety



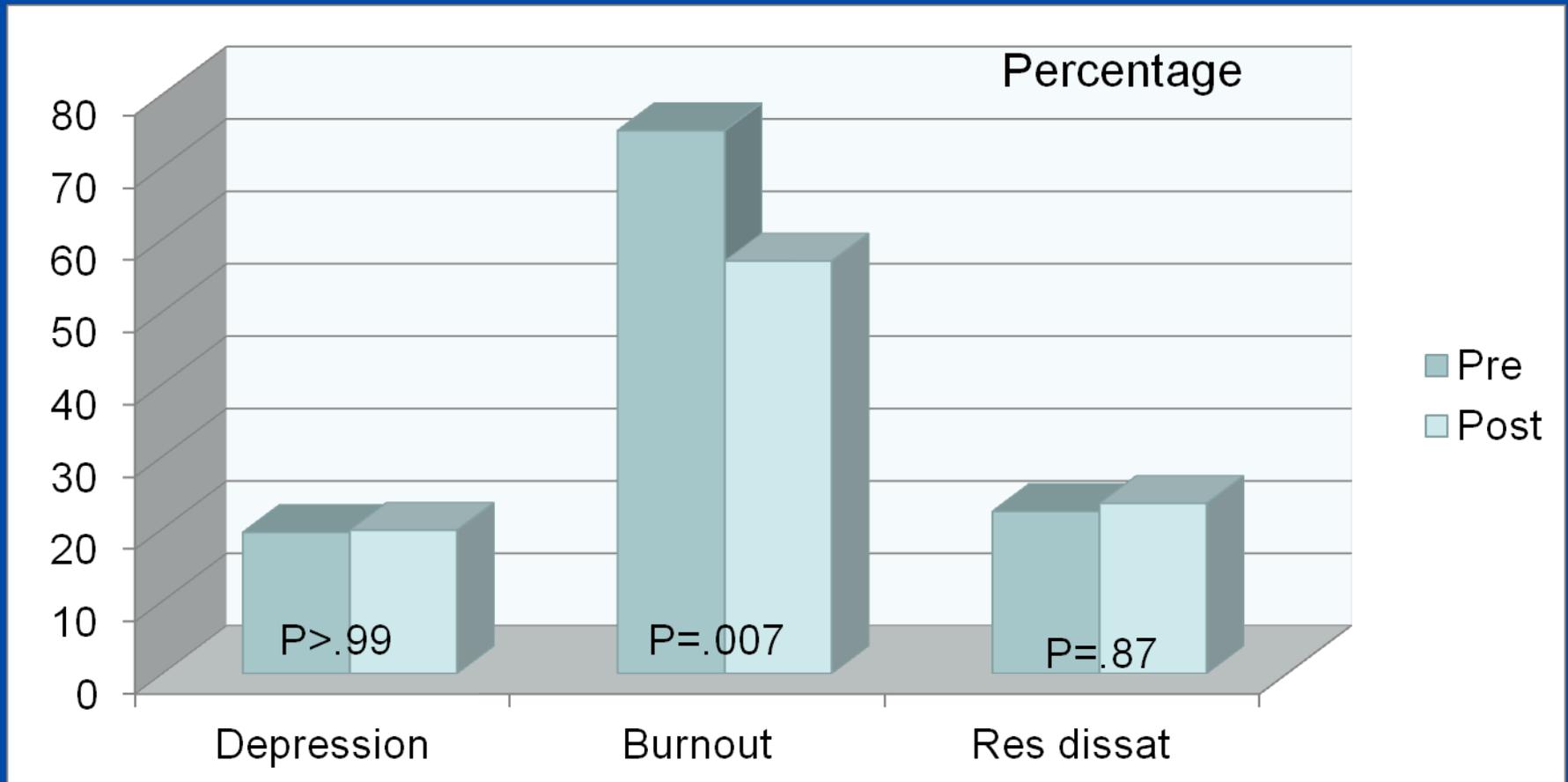
# Resident safety



Percentage



# Resident Mental Health

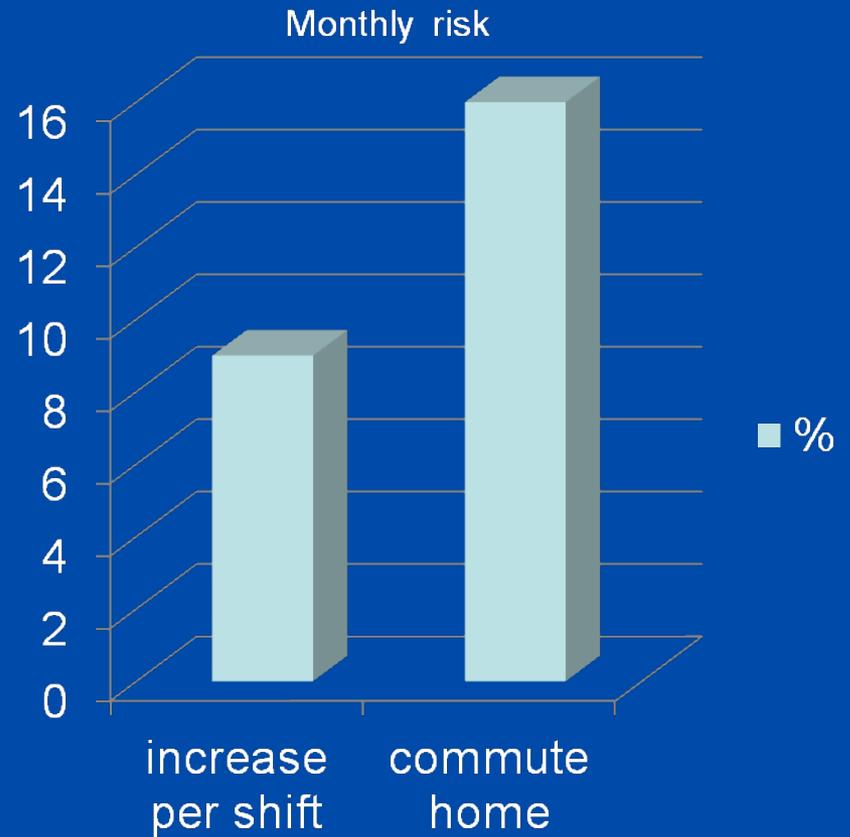
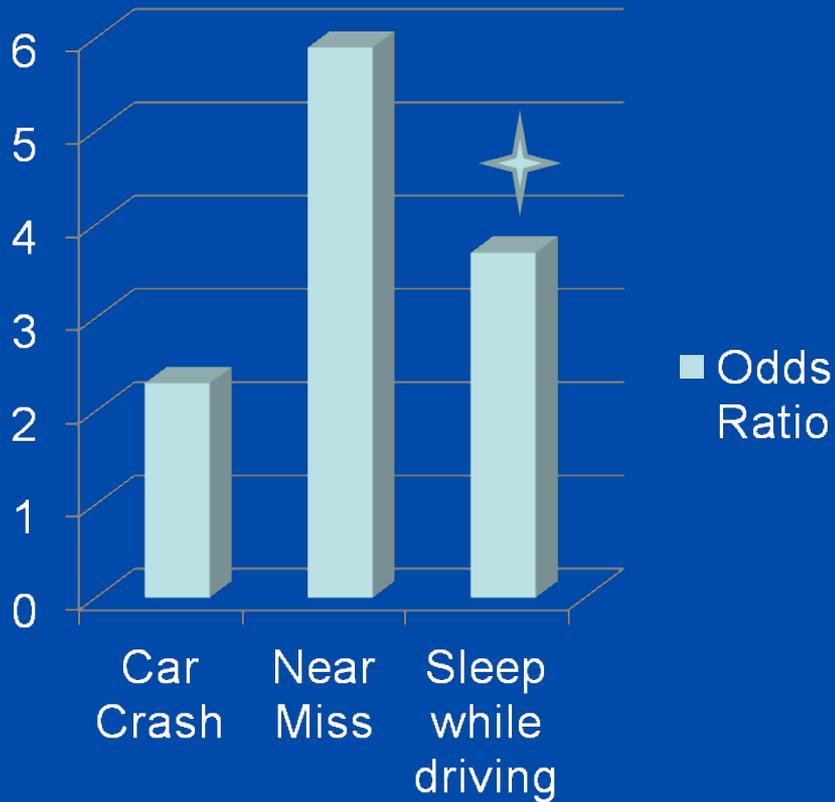


# Risk to trainees

- Post call traffic accidents/near misses
- Survey of PGY-1 trainees
- 88/12 % medical/surgical specialties
- 320 crashes
- 133 “of consequence”
- 131 on commute home



# Risk of MVC post call



**MORE THAN DUTY HOURS**



# Fatigue Mitigation—at work

- Naps
  - Hard to mandate
- Quiet call rooms
  - Challenge
- Transportation
  - Benefit for trainee
  - Protection for institution
    - Maggie's Law (NJ)



# Patient Safety Improvements

- Improved handover process
  - Standardized
  - Prioritized by severity
- Electronic data systems
  - CPOE, etc.
- “Sterile cockpit” for handovers
- Access to resources/references
- Supervision



# Review

- Strategies that that maintain or improve education require additional resources
- Night float works if “add on”
- Residents QoL improving
- Faculty QoL decreasing!



# Jury is out

- Educational outcomes
  - Devil is in the details
- Effect on patient safety



# Phantom Menace

- Is the real risk sleepy doctors?
- Comprehensive patient record
- Point of care resources
- Adequacy of supervision



- *“Imagine if Zion’s doctors had been better trained to treat her chronic depression, made regular follow-up phone calls to their patient, kept better records, coordinated her drugs to prevent serotonin syndrome. Perhaps they could have avoided her sudden deterioration in the first place, and no hospital trainee, sleep deprived or wide awake, would ever have seen her. “*





# Duke Anesthesiology



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