Concerns for Novice Drivers

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## Conflict of Interest Disclosures

1. I do not have any potential conflicts of interest to disclose, **OR**

2. I wish to disclose the following potential conflicts of interest:

<table>
<thead>
<tr>
<th>Type of Potential Conflict</th>
<th>Details of Potential Conflict</th>
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<tr>
<td>Grant/Research Support</td>
<td>NSF 1344613, 1U50DP004930, ITHS Collaborative Translational Research Grant, ITHS Small Pilot Grants, P30NR011400, Philips Respironics</td>
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<td>Consultant</td>
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<td>Financial support</td>
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<td>Other</td>
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3. The material presented in this lecture has no relationship with any of these potential conflicts, **OR**

4. This talk presents material that is related to one or more of these potential conflicts, and the following objective references are provided as support for this lecture:
AASM Vision & Mission

Vision
Achieving optimal health through better sleep.

Mission
The AASM improves sleep health and promotes high quality patient centered care through advocacy, education, strategic research, and practice standards.
National Healthy Sleep Awareness Project
More than 90 percent of all crashes are due to driver error. Check out each of the top five driving behaviors killing people on Utah’s roads.

Image Credit: Utah Teen Driving Task Force
Drowsy Driving & Novice Drivers

Prevalence ratio of drowsy driving accidents

By Age

<table>
<thead>
<tr>
<th>Age</th>
<th>Prevalence Ratio</th>
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<tbody>
<tr>
<td>16 - 24 Years</td>
<td>1.8</td>
</tr>
<tr>
<td>25 - 39 Years</td>
<td>1.5</td>
</tr>
<tr>
<td>40 - 59 Years</td>
<td>1</td>
</tr>
<tr>
<td>60+ Years</td>
<td>1</td>
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By Sex

<table>
<thead>
<tr>
<th>Gender</th>
<th>Prevalence Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>1.6</td>
</tr>
<tr>
<td>Female</td>
<td>1</td>
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</tbody>
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Source: Tefft, 2012
Decision-Making & the Teen Brain

Image Credit: National Institute of Mental Health
Source: Van Leijenhorst, 2010
Young Adult Vulnerability to Sleepiness

Fig. 1. Group mean driving incidents (s.e. bars) per 30 min of drive for both groups and sleep conditions. Sleep loss significantly worsened driving in the younger group.

Image Credit: Filtness, 2012

Source: Filtness, 2012; Anund 2008; Otmani, 2005

Fig. 3. EEG alpha + theta power (indicative of increasing sleepiness), per minute for both groups and sleep conditions. Data have been smoothed by a 3-point running average. Sleep loss led to a significant increase in alpha and theta power in the younger group.
Teen Distraction & Risky Behavior

Crashes involving 15-18 year old drivers
Driver error: 95.6% of crashes

Survey of 506 young licensed drivers
41% reported a crash as driver

CRITICAL TEEN DRIVER ERRORS

- Recognition errors
- Decision errors
- Performance errors
- Actually asleep

ODDS RATIO OF CRASH INVOLVEMENT

- Current smoker
- Drives drowsy alone
- Residence rural
- Length licensure

Source: Curry, 2011

Source: Hutchens 2008
Teen Distraction & Risky Behavior

11th Grade Students:
• 13% DWI at least once in past 30 days
• 24% RWI at least once in past year

Source: Li, 2013; Beck, 2007; Anderson, 2013
AASM Strategy: Advocacy and Education
The Impact of Drowsy Driving Education

Source: Murphy, 2013
Teens and Sleep
Why are young drivers more likely to drive drowsy?

- Teens need at least 8 to 9 hours of sleep each night
- Teen’s internal biological clocks keep them awake later in the evening and keep them sleeping later in the morning
- Lifestyle habits (socializing, video games, etc.)

Click to begin video.
State Driver’s Manuals
“When you are tired, you cannot drive as safely as when you are rested and you do not see as well nor are you as alert as when you are rested. It takes you more time to make decisions and you do not always make good decisions. You can be more irritable and can get upset more easily. Lastly, when you are tired, you could fall asleep behind the wheel and crash.”

Source: Arkansas Driver License Study Guide, April 2012
State Driver’s License Exams

Sample Practice Question (New York)

On long trips you can prevent drowsiness by:

• Turning on your car radio.
• Slowing down so you can react better.
• Stopping at regular intervals for a rest.
• Moving your eyes from side to side.
Strategy: Insurer Discount Programs
Strategy: Public Safety Campaign

Image Credit: Utah Teen Driving Safety Task Force
Strategy: Public Safety Partnerships
State GDL Laws: An Example of Effectiveness

- Crash rates have dropped among teens
  - Fewer crashes per miles driven
  - Less driving
  - Less nighttime crash involvement
- Overall teen crash rates remain elevated compared with middle-aged drivers

Sources: IIHS, March 2014; Zhu, 2013

Image Credit: IIHS
Summary/Next Steps

• Convene the AASM Transportation Safety Task Force
• Assemble information from states regarding:
  o Drowsy driving instruction in driver’s education curricula
  o Drowsy driving information in driver’s manuals
  o Drowsy driving questions on driver’s license exams
• Improve accuracy and consistency of this content across states
• Develop insurer discount program
• Develop strategy for public safety campaign for drowsy driving
• Develop public safety partnerships


