Why Can’t You See What I See?: What Are We Asking of “Observers”?

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Common Statement

• “It is more likely than not that observers will recognize visible signs of intoxication at BAC > 0.1 – 0.15”

Objectives

• Review literature basis for statement
• Identify components that are testable
  – General nature and progression of symptoms with rising BAC
  – Individual tolerance
  – Nature of observation
  – Nature of observers
  – Legal responsibility of observers

Already covered
Review: Ethanol Effects - Overlap

- **0.01 - 0.05 g/dl**
  - slight impairment, perceptual & emotional effects

- **0.03 - 0.12 g/dl**
  - Euphoria, decreased social inhibition, decreased emotional control, decreased judgment and cognitive function, decreased fine motor skills. Start of sensory-motor impairment

- **0.09 - 0.25 g/dl**
  - Emotional instability, impaired perception, decreased memory, impaired coordination, impaired cognitive function

- **0.18 - 0.30 g/dl**
  - Dizziness, blurred vision, slurred speech, significant impairment of cognitive, perceptual and related functions.

- **0.35 - 0.50+ g/dl**
  - Anesthesia, coma, death possible
Correlation To Impairment?

http://www.boatus.com/foundation/Findings/new_alcohol_boating.htm

E.D. Assessment of Intoxication
467 consecutive patients with plasma EtOH >50 mg/dL

<table>
<thead>
<tr>
<th>BAC (mg/dL)</th>
<th>Total number of studies</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
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<tbody>
<tr>
<td>50-99</td>
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<td>150-199</td>
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<tr>
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<td>30</td>
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<td>46</td>
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<tr>
<td>450-499</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>24</td>
<td>27</td>
</tr>
<tr>
<td>500-549</td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

At What Ethanol Concentration Does One Appear Intoxicated?

Table 2 - Relation Between Blood Alcohol Level and Drunkenness

<table>
<thead>
<tr>
<th>BAC (mg/dL)</th>
<th>% of Persons Found to be Drunk</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.01-0.10</td>
<td></td>
</tr>
<tr>
<td>0.11-0.15</td>
<td></td>
</tr>
<tr>
<td>0.16-0.20</td>
<td></td>
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<tr>
<td>0.21-0.25</td>
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<tr>
<td>0.26-0.30</td>
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<tr>
<td>0.31-0.35</td>
<td></td>
</tr>
<tr>
<td>0.36-0.40</td>
<td></td>
</tr>
<tr>
<td>0.41-0.45</td>
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</table>

So, why does the BAC suggesting “drunkenness” vary among these studies?
Is the “right” BAC: 0.05, 0.10, 0.15, …?
Extent of Individual Variability

- Reports of DUI arrests with BACs over 0.50 – 0.70
- Report of a truck driver on the Autobahn arrested with a BAC > 1.1 g%
- “Sober Drunks” studied in Emergency Departments

Ethanol Levels in “Sober” ED Patients

- Definition of “non-intoxicated” (EtOH within 6 hrs)
  - Alert and Ambulatory
    - Passes simple mental status exam
      - Orientation
      - 3-step command
      - Correctly make change
  - No obvious neurological abnormality
  - Deemed responsible for self

Lack of Observable Intoxication

- Alcohol Symptom Checklist (ASC)
  - Odor of alcohol on breath
  - Fine motor control
  - Gross motor control
  - Slurred speech
  - Change in speech volume
  - Decreased alertness
  - Sweating
  - Slow or shallow respiration
  - Sleepiness
  - Pace of speech
  - Red eye

Nature of Observers?

- Unblinded researchers
- Partially blinded researchers
- Blinded researchers
- Trained lay person with duty
- Untrained lay person with duty
- Casual observer with bias/intoxication
- Casual observer without bias

Setting and Bias

- Knowledge deficits
  - "Odor of alcohol"
    - Nonspecific, expected in the setting of alcohol service
    - "He wasn't falling down…just ‘buzzed’"
- Mood
  - Euphoria, "having a good time", altered judgment
- Distractions
  - Tasks at a bar/restaurant/party vs. walking/driving
- Timing
  - Pre-event vs. Post-event
    - Conditioning and anchoring
What Does “Field Sobriety Testing” Test For?

- Whether or not you have had alcohol
- Whether or not you have taken a mind-altering substance
- Whether or not you can safely drive a vehicle
- Whether or not you have a BAC >0.10
- Whether or not you have a neurological condition
- Whether or not you appear impaired

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Which of these are “accepted” FST?

- Detection of odor of alcohol on breath (or clothes, vehicle)
- Counting fingers forwards and backwards
- Counting backwards or math problems
- Romberg test for balance
- Finger to nose testing
- One leg stand
- Heel to toe walking
- Horizontal gaze nystagmus
- Slurred speech
- “glassy” or red eyes
- Nervousness or inattention
Non-Standard Testing

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<table>
<thead>
<tr>
<th>Test</th>
<th>Correlation to BAC &gt;0.10 g%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heel to Toe</td>
<td>65%</td>
</tr>
<tr>
<td>Romberg</td>
<td>68%</td>
</tr>
<tr>
<td>Slurred Speech</td>
<td>77%</td>
</tr>
<tr>
<td>Combination</td>
<td>as high as 83% &quot;reliable&quot;</td>
</tr>
</tbody>
</table>

HGN  
Horizontal Gaze Nystagmus

Scoring: 1 point each eye for:
- Lack of smooth pursuit
- Jerking at max extension
- 45° Onset of jerking

WAT  
Walk and Turn

Divided attention between counting 9 steps and balance
Scoring: Points for:
- Swaying while listening
- Using arms for balance
- Begins test early
- Loses balance on turn
- Stops to regain balance
- Wrong number steps
- Not touching heel-to-toe
- Steps off line

OLS  
One Leg Stand

Divided attention between counting 30 secs and balance
Scoring: Points for:
- Swaying
- Using arms for balance
- Hopping to keep balance
- Putting foot down
Validity Testing of SFSTs

Trained Officers tested subjects in the laboratory and in the field.
Tests included: HGN, OLS and WAT at 0.10% threshold.

Correct Classification:

<table>
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<th>LAB</th>
<th>FIELD</th>
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<td>81%</td>
<td>95%</td>
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Best single test was the HGN with correct classification 78% of the time.


Reliable (?)

- The percentage of “correct decisions” is based on the subsequent BAC (slight time delay).
- Average of true positives and true negatives.
- In one study (n = 234) with overall correct decision 83% (based on BAC >0.05 g%):
  - Decision to arrest correct 93% of the time
  - Decision to release correct 64% of the time
- Suggests more people don’t appear impaired at modest levels than do...

Field Testing Prerequisites

- Dry, level ground
- Good visibility and lighting
- Non-involvement of officer
- Minimize distractions
- Not for elderly (>50-60) or overweight
- No high heels
- Notation of pre-existing conditions

...How many of these are true at 2AM in December on a highway...?
Deviations from Typical SFST Response

![Image 1]

Deviations from Typical SFST Response

![Image 2]

Deviations from Typical SFST Response

![Image 3]
Dram Shop Laws

- Recognize that a "server of alcohol" bears some responsibility to not serve an impaired customer
- Vary state by state
  - Minors, social hosts
- Terms vary
  - Intoxicated
  - Visibly intoxicated
  - Impaired
- Do not remove aspect of personal liability
  - Some states do not allow one to sue for injuries to self

Factors Affecting Observers & Observations

- Training
- Motivation
- Opportunity

Some Alcohol Server Training Programs:

- TIPS: Training for Intervention Procedures
- RBST: Responsible Beverage Service Training
- AlcoholCert: Corporate Program offered in Utah and Arizona
- ServSafe: Program of the National Restaurant Assoc

Credit: Dr. Robert Forney Jr.
Some Components of Server Training

• **General Signs** of impairment, the customer may exhibit:
  - Trouble focusing or glassy eyes
  - Trouble maintaining eye contact
  - Fatigue, slumping in their chair
  - Loss of their train of thought when speaking
  - Slurring speech esp. with polysyllabic words

• Signs of **coordination** impairment, the customer:
  - Has difficulty handling change (fine motor coordination)
  - Spills drinks or knocks things over
  - Stumbles, uses arms as outriggers

Some Components of Server Training (2)

• Signs of **judgment** impairment, the customer:
  - Loses track of how much they have had to drink
  - Becomes careless with money
  - Begins ordering rounds for total strangers
  - Makes irrational or nonsensical statements
  - Become argumentative or agitated

• Signs of **reaction** impairment, the customer:
  - Is less aware of what’s happening around them
  - Is less responsive to those around them

Motivation?
often untrained, poorly motivated, biased and may also be intoxicated

Friend or Spouse

Proper opportunity, motivation and training

Compromised opportunity but proper motivation and training

The Opportunity For Observation May Vary

Credit: Dr. Robert Forney Jr.
Driving: Complex Divided Attention Task

- Steer/maintain lane
- Control accelerator
- Signal intentions
- Be aware (brights, ...)
- Control the brake
- Operate the clutch
- Operate gearshift
- Observe other traffic;
- Observe signal lights, stop signs etc
- Make decisions in advance to...
  - stop, turn, speed up, slow down

Deviations in any or all of these form the basis for an officer's "probable cause" traffic stop... or may be inferred during the investigation of a crash.

QUESTIONS?