

# Reimagining Responses to Impaired Driving: Understanding Drug Impaired Driving

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# Learning Objectives

- Evaluating the characteristics of and incidents of impaired driving
- Understand the impact of certain categories of both prescription and illicit drugs on driving ability/skills
- Explain the purpose and role of a drug recognition expert on determining impairment
- Evaluate the opportunity to address the dangers of drug-impaired driving by utilizing recovery court participation



**CAUTION  
NEW DRIVER**



# Why is it important?

Driving is “a complex activity requiring alertness, divided yet wide-ranging attention, concentration, eye-hand-foot coordination, and the ability to process visual, auditory, and kinesthetic information quickly.”

P. Larkin, *Medical or Recreational Marijuana and Drugged Driving*, 52 Am. Cr. L. Rev. 454 (2015)

# Alcohol Impairment: The Big Four

1. Judgment
2. Vision and visual perception
3. Muscular coordination
4. Reaction time





# Impaired Drivers are Different

- Often lack an extensive criminal history
- High degree of denial - alcohol consumption is legal, highly prevalent and socially encouraged
- Tend to be employed and may have a stable social network
- Do not view themselves as criminals
- Repeatedly engage in behavior that is dangerous



# Impaired Driving by the Numbers

In 2021, there were 13,384 alcohol-related traffic fatalities in the U.S., including 294 children

The alcohol-related traffic fatalities in 2021 represented 31% of all traffic fatalities

32 people in the U.S. die every day in impaired-driving crashes - one person every 45 minutes



2/3 of first-time impaired drivers self-correct and do not recidivate

50% of first-time impaired drivers may have an alcohol use disorder; the other half probably compromise individuals who made a poor decision to drink and drive

40% of fatally injured impaired drivers have a history of repeat DUI offenses

Less than 5% of drivers account for about 80% of the impaired driving episodes

Of the current population on supervision for any offense, 15% have at least one impaired driving conviction and about 8% are repeat DUI offenders

# Impaired Driving

- In 2019, 1,024,508 drivers arrested for DUI, with 121m impaired driving episodes
- An impaired driver gets behind the wheel and drives between 300 and 1,200 times before first arrest



# Major Risk Areas of DUI Recidivism

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Prior involvement in the justice system related to impaired driving

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Prior non-DUI involvement in the justice system

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Prior involvement with alcohol and other drugs

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Mental health and mood adjustment problems

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Resistance to and non-compliance with current or past involvement in the justice system



Alcohol impaired driving most common among:

Men

People who binge drink

People who do not always use a seatbelt

# Co-Occurring Disorders

- Study of repeat impaired drivers found 45% have a lifetime major mental health disorder
- Mental health issues linked to impaired driving include:  
Depression, bipolar disorder, conduct disorder, anxiety, anti-social personality, PTSD

# Drugged Driving Defined

Driving after the use of impairing substances other than alcohol or combined with alcohol

- Illegal drugs
- Prescription drugs
- Over-the-counter medications
- Chemical consumption
- Combination of any of the above and/or with alcohol



**Key Substance Use and  
Mental Health Indicators  
in the United States:**

Results from the 2021 National  
Survey on Drug Use and Health



**SAMHSA**  
Substance Abuse and Mental Health  
Services Administration

- 133.1m current alcohol users
- 60m past month binge drinkers
- 16.3 past month heavy drinkers
- 9.2m opioid misusers in the past year
- 29.5m AUD in the past year
- 24m drug use disorder in the past year
- 7.3m experienced both

# 2013-2014 National Roadside Survey

Among weekend nighttime drivers who provided blood or oral fluid samples:

8.3% had a positive BAC; 1.5% had a BAC of .08 or higher

15.2% tested positive for the presence of illegal drugs

7.3% tested positive for the presence of prescription or over-the-counter medications

12.6% tested positive for THC and/or its active metabolites







# 2013-2014 National Roadside Survey

22.3% of daytime drivers drug-positive

22.5% of nighttime drivers drug positive

## Daytime use

- 9.3% illegal drugs
- 10.7% medications
- 2.3% illegal drugs and medication

## Nighttime use

- 13.2% illegal drugs
- 7.4% medication
- 2.0 illegal drugs and medication

**Table 3. Percentage of drivers who reported driving within 2 hours of using various potentially driver impairing medications within the past 30 days, United States, July–August 2021.**

Age Group	Antihistamines and/or cough medicines (%)	Antidepressants (%)	Rx pain medications (%)	Muscle relaxants (%)	Sleep aids, barbiturates, or benzodiazepines (%)	Amphetamines (%)	≥1 of these medications (%)	≥2 of these medications* (%)	≥3 of these medications* (%)
All drivers	38.9	60.8	32.6	21.6	9.2	73.1	45.0	63.3	70.8
16–18	32.8	55.7	29.3	27.6	4.7	56.4	40.9	56.6	46.1
19–24	31.8	52.8	20.1	0.0	0.0	1.0	39.3	54.1	83.6
25–39	36.5	74.7	28.4	20.3	13.8	80.7	44.8	69.6	70.0
40–64	43.1	60.9	40.5	22.7	8.4	61.9	48.6	64.2	72.7
≥65	34.4	49.3	26.6	22.8	10.9	74.3	38.9	58.2	64.6

Base: U.S. residents ages 16+ with a driver's license who reported driving and taking the corresponding medicine (or number of medicines) in past 30 days, weighted to reflect U.S. population.

Red numbers indicate significantly different across age groups based on unadjusted statistical analysis (corrected Pearson F test).

Blue shading indicates small sample size (<100).

\*Not necessarily at the same time.



## Some Good News

Weekend nighttime drivers with a BAC of .08 and above declined by 80% between 1973 and the most recent National Roadside Study of Alcohol and Drug Use by Drivers conducted for the years 2013-2014

# Limitations on Drug Impaired Driving Data

Data  
unreliable/incomplete

Testing for drugs  
infrequently completed,  
particularly if the driver  
tested positive for  
alcohol

Testing for drugs  
inconsistent or  
incomplete as to the  
spectrum of drugs

Difficulty in  
differentiating the  
cause of impaired  
driving between  
substances

# Drug Impaired Driving

- Recreational cannabis use associated with increased motor vehicle crashes
- Pre-pandemic 21% of drivers involved in fatal crashes tested positive for THC at the time of the crash
- During the pandemic the rate rose to 33% of drivers +THC in fatal crashes



# Views on Substance Use and Driving

- Drivers perceive the use of marijuana and alcohol differently
- 95% of survey respondents believe it is dangerous to drink and drive
- 69% of the same respondents believe it is dangerous to use marijuana and drive



# Peak BAC over Time





Light Beer

Regular Beer

Micro Brew

White Wine

Red Wine

80 Proof

4.20% AbV

5.00% AbV

6.70% AbV

12.0% AbV

15.0% AbV

40.0% AbV

1 drink = 14 oz

1 drink = 12 oz






1 drink = 9 oz

1 drink = 5 oz

1 drink = 4 oz

1 drink = 1.5 oz

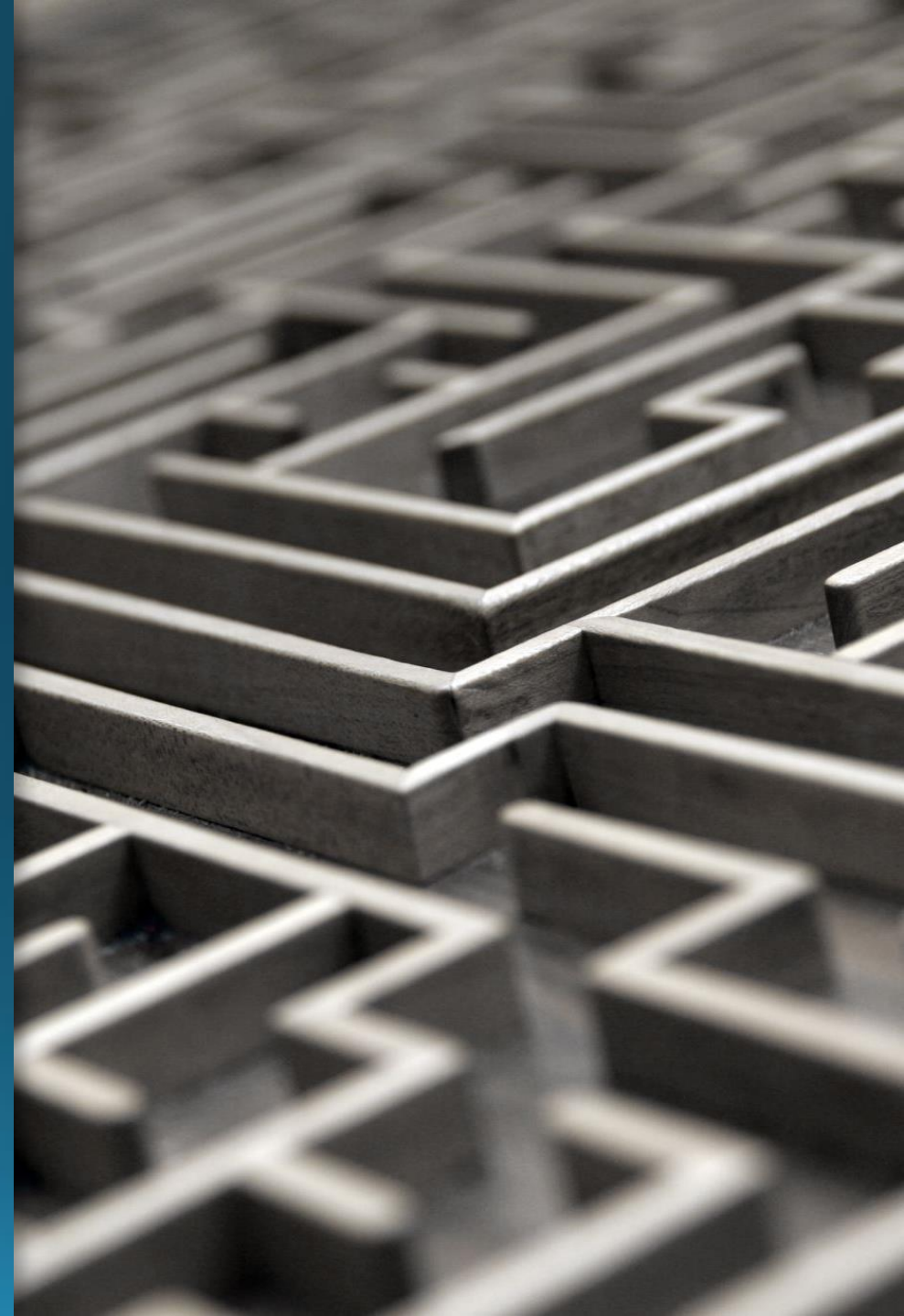


BLOOD ALCOHOL CONCENTRATION	NUMBER OF DRINKS	EFFECTS ON DRIVING
<b>0.02% BAC</b>		<ul style="list-style-type: none"> <li>• Decline in visual functions</li> <li>• Inability to perform two tasks at the same time</li> <li>• Loss of judgment</li> <li>• Altered mood</li> </ul>
<b>0.05% BAC</b>		<ul style="list-style-type: none"> <li>• Reduced coordination</li> <li>• Reduced ability to track moving objects</li> <li>• Difficulty steering</li> <li>• Slower response to emergency driving situations</li> </ul>
<b>0.08% BAC</b>		<ul style="list-style-type: none"> <li>• Reduced ability to concentrate</li> <li>• Short-term memory loss</li> <li>• Lack of speed control</li> <li>• Impaired perception and self-control</li> </ul>
<b>0.10% BAC</b>		<ul style="list-style-type: none"> <li>• Clear deterioration of reaction time</li> <li>• Reduced ability to maintain lane position</li> <li>• Reduced ability to brake appropriately</li> <li>• Slurred speech</li> </ul>
<b>0.15% BAC</b>		<ul style="list-style-type: none"> <li>• Substantial impairment in vehicle control</li> <li>• Loss of auditory information processing</li> <li>• Major loss of balance</li> <li>• Vomiting may occur</li> </ul>

Source: Centers for Disease Control and Prevention

# Why is this difficult?

- Varied substances with different means of impairing the driver
- The lack of information about many potentially impairing drugs
- Individual differences, sensitivity and tolerance
- Myriad of ways various substances interact
- Study limitations
- Testing inadequacies



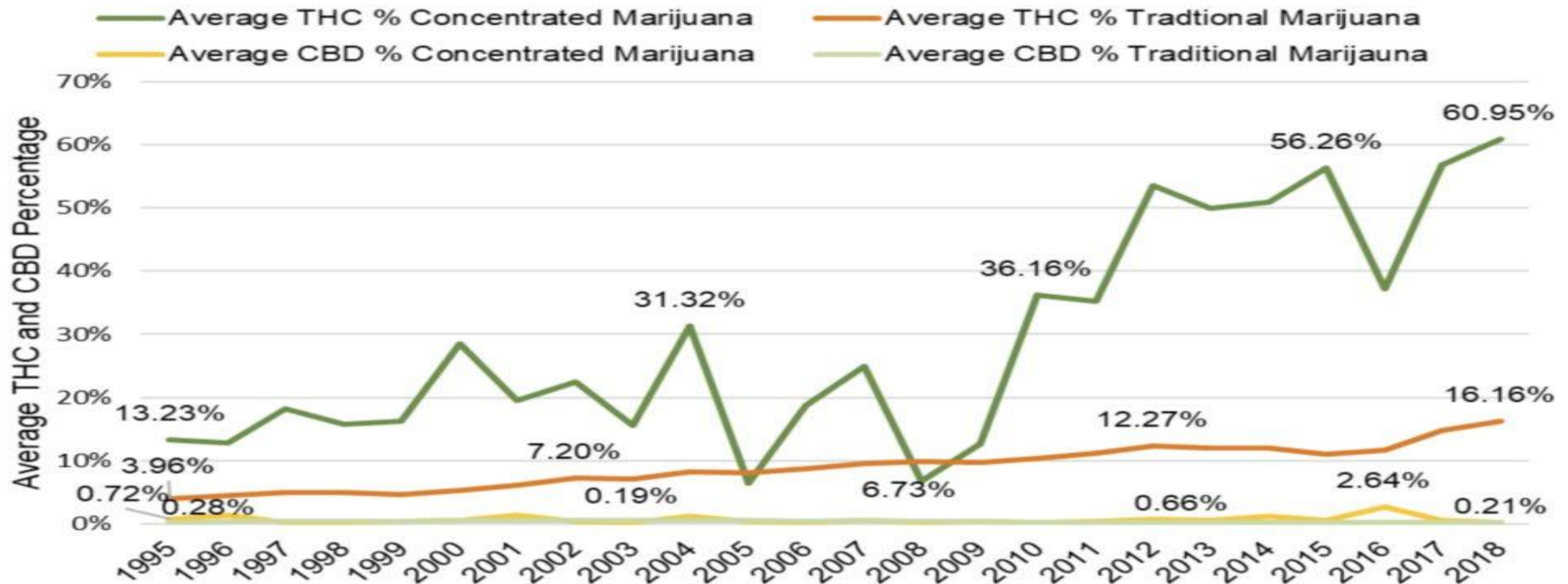
# Cannabis

- Affect varies by product, dose, route of administration, experience of user
- Short term effects - problems with memory and learning, distorted perception, difficulty in thinking and problem-solving and loss of coordination, difficulty sustaining and shifting attention and in registering, processing and using information
- Driving concerns - distortion of distance, and vigilance, loss of coordination in divided attention tasks







# It's Not Your Grandpa's Weed

**Figure 71. Average THC and Cannabidiol Potency of Traditional and Concentrated Marijuana, 1995 – 2018**



Source: University of Mississippi

# Marijuana Detection Times

Blood & Saliva  	A few hours
Urine 	
One-time use	Up to 13 days
Regular use	Up to 45 days
Heavy use	Up to 90 days
Hair 	Up to 90 days



# What makes cannabis and alcohol use different?

- THC concentration cannot be correlated to specific impairment
- THC dissolves in fatty tissue, which acts like a sponge to reduce measurable amounts in blood, saliva or breath
- THC rapidly moves from the blood stream to the brain, yet has a long half-life to metabolize
- As a result, impairment does not uniformly rise and fall based upon how much THC is present in bodily fluids
- Frequency of use impacts blood drug concentration over time
- Peak effects occur after peak blood concentration
- Method of consumption matters

# Cocaine



- Early effects - euphoria, excitation, general arousal
- More deleterious effects at higher doses, chronic ingestion and during withdrawal potentially resulting in agitation, anxiety, distress, inability to focus on divided attention tasks, inability to follow directions, confusion
- Effects on driving - speeding, losing control of the vehicle causing collisions, turning in front of other vehicles, high-risk behavior, inattentive driving, poor impulse control

# Dextromethorphan

- Synthetic analog of codeine
- Effects of recreational doses include dissociation of mind from body, creating a dream-like experience, disorientation, confusion, altered time perception, visual and auditory hallucinations
- Little to no effect on driving at therapeutic levels, but high doses result in significant impairment - marked drowsiness, impairment of mental and/or physical abilities required to perform driving tasks





# Diazepam (Valium)

- At low doses, a moderate tranquilizer, causing sleepiness, drowsiness, confusion
- At high doses, results in excitement, disinhibition, severe sedation, and effects on respiration
- May produce a state of intoxication similar to that of alcohol, including slurred speech, disorientation
- Results in significant driving impairment - decreased divided attention, increase in lane travel, slowed reaction time, increased braking time, decreased eye-hand coordination, and impairment of tracking and vigilance

# Diphenhydramine (Benadryl, Unisom, Dramamine)

- Can act as both a stimulant and a depressant
- Diminishes cognitive and psychomotor performance, decreased alertness, decreased reaction time, impaired concentration, time estimation, tracking and attention, ability to maintain a constant distance and lane keeping
- A single 50 mg dose has been shown to cause significant impairment in measuring vehicle following, constant speed and lateral position - effects correspond to a BAC of 0.1



# Ketamine

- Decreased awareness of general environment, dream-like state, feelings of invulnerability, increased distractability, disorientation, intense hallucinations, impaired thought processes, out-of-body experiences, changes in perception about body, surroundings, time and sounds
- Increased reaction time, distorted perception of space, blurred vision
- Manufacturer suggests no driving within 24 hours of ingestion



# Methamphetamine and Amphetamine

- Sold commercially as Dexedrine, Adderall, Benzedrine
- Used medicinally to treat narcolepsy, ADD and ADHD, and infrequently used in the treatment of obesity and to aid weight loss
- High risk driving, impatience, inattentive or erratic driving, diminished divided attention, failing to stop, driving at high speeds, disorientation

# Morphine and Heroin

- Morphine used medicinally for the relief of moderate to severe pain; preoperative sedation; heroin has no accepted medical uses
- Impairs the mental and/or physical abilities needed to perform driving activities
- Significant slower/delayed reaction times, slower driving, weaving, poor vehicle control, poor coordination, slow response to stimuli, falling asleep at the wheel

# Methadone



- Use results in drowsiness, sedation, dizziness, lightheadedness, depressed reflexes, altered sensory perception
- Attention and perception tasks impaired
- Deficits in reaction time, attention, and peripheral vision

# Harmful Intoxicants



- Common household items
- Purchased legally with little to no regulation
- No age restriction on purchase
- Inexpensive
- Produce a high
- Impair motor function
- Difficult to detect
- May result in an impaired driving conviction

# Toluene

- Solvent in paints, lacquers, thinners, glues, correction fluid, nail polish remover
- Low cost, commercially and legally available
- Intoxicating effect when inhaled/high degree of impairment
- No approved medical use
- Dizziness, euphoria, grandiosity, floating sensation, drowsiness, reduced ability to concentrate, slowed reaction time, distorted perception of time and distance



## WHAT ARE EFFECTS OF DRUGS ON DRIVING?

Driving under the influence of drugs affects you and everyone around you.



### MARIJUANA

Slows reaction time and impairs judgment of time and distance



### METHAMPHETAMINE OR COCAINE

Aggressive and reckless behaviors



### OPIOIDS

Drowsiness and impaired memory and thinking skills



### SEDATIVES

*(benzodiazepines, barbiturates, etc.)*  
Dizziness and drowsiness

# Driving Under the Influence of Drugs (DUID)



- DUID offenders 5x more likely to reoffend as compared to DUI offenders
- DUID where a scheduled prescription was the impairing drug reoffend much less frequently (about 17%) compared to those consuming illicit drugs (68%)

# The Process

- Officer observes inappropriate driving behavior
- Officer stops vehicle, engages driver in conversation, forms suspicion that the driver is impaired
- Standardized field sobriety tests
- Request for BAC sample
- Only when BAC level incompatible with observed impairment will the officer consider drugs other than alcohol
- Typically, if the BAC is at or above the legal limit, the investigation stops

# Why stop the investigation?



THE BAC LEVEL MEETS  
THE STATE'S BURDEN  
OF PROOF



STATE LAWS TYPICALLY DO NOT  
ENHANCE PENALTIES FOR MULTIPLE  
SUBSTANCE OR DRUG IMPAIRMENT

# Drug Recognition Experts

Police officers trained to recognize impairment in drivers under the influence of drugs other than, or in addition to alcohol

Began in Los Angeles in the early 1970s

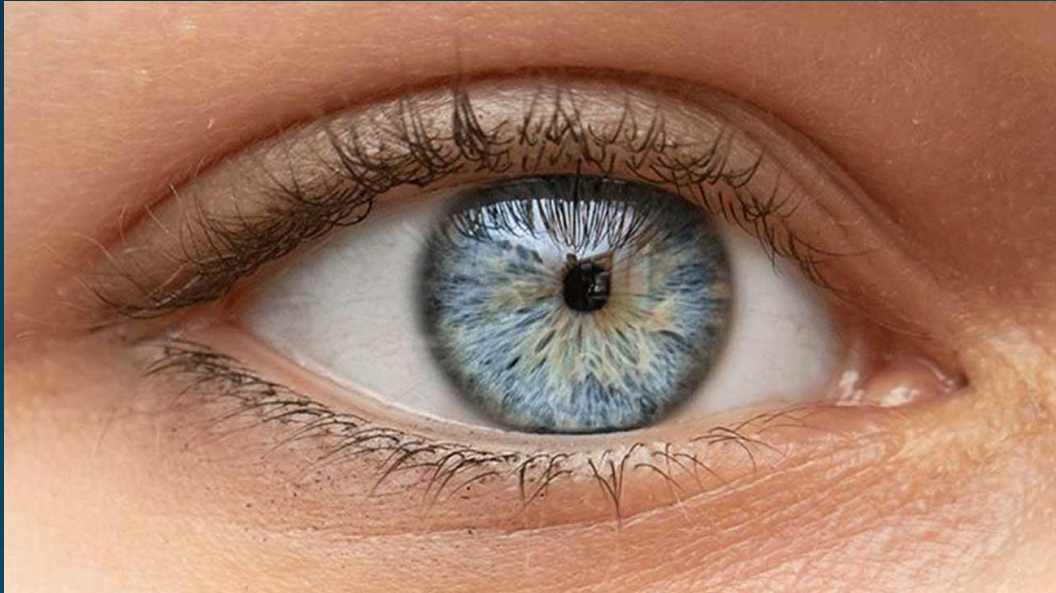
Administered by NHTSA and the International Association of Chiefs of Police

Now a nationally standardized DRE protocol

Identifies seven different categories of drugs and the physical symptoms associated with each

# Standardized DRE 12-Step Protocol

1. Breath Test
2. Interview of Arresting Officer
3. Preliminary Exam
  - First Pulse
4. Eye Examinations
5. Psychophysical Tests
6. Vital Signs
  - Second Pulse
7. Dark Room Examination
  - Room Light
  - Near Total Darkness
  - Direct Light
8. Muscle Tone
9. Injection Sites
  - Third Pulse
10. Interrogation
11. Opinion of DRE
12. Toxicology Examination



# The Challenge

Identify those at  
risk for  
reoffending

Supervise them  
according to  
their risk and  
needs



# Screening and Assessment

## Screening

Who needs further assessment?

Identifies immediate and current needs

Typically shorter in length and quick to administer/score

Usually does not result in a diagnosis

## Assessment

Comprehensive and considers multiple domains

Gathers key information and permits diagnosis; identifies strengths and barriers that may impact treatment

# Mental Health Assessments

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Because of very high level of psychiatric co-morbidity in impaired driving populations, mental health assessments essential

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Mental health issues linked with recidivism

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Traditional treatment focused on alcohol education or interventions likely miss the mental health concerns

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Assessment key to identification and treatment and addressing recidivism

# Choosing a Screening or Assessment Tool

Reliable

Valid

Standardized

Ease of use

Cost

# Assessment Can Inform:

Pretrial decisions

Sentencing decisions

Admission to a specialized docket

Case management plans

Supervision levels

Treatment referral/plans

Post-sentence

Majority of instruments not designed or validated for the impaired driving population

Impaired drivers commonly score low risk due to a lack of criminogenic factors

# What instrument should be used?

- Impaired Driving Assessment (IDA)
  - Developed by APPA; available at no cost
  - Self-report and evaluator report
- CARS
  - Standardizes mental health assessment; includes a section on impaired driving behavior
  - Provides immediate diagnostic information for up to twenty major psychiatric disorders
  - No cost, electronic, can be used by non-clinicians
- DUI-RANT
  - Screening and triage tool
  - Identifies the risk/needs quadrant of the offender
  - Cost to utilize

# SBIRT



SCREENING



BRIEF  
INTERVENTION



REFERRAL FOR  
TREATMENT

# What does not reduce recidivism with impaired drivers

- Post-sentence license suspension
- Fines
- Jail
- Community service
- Victim impact panels
- Vehicle impoundment





# Countermeasures that Work

- Limits on diversion and plea agreements
- Immediate sanctions
- Screening/Assessment
- Treatment
- Administrative license suspension
- Ignition interlock/continuous alcohol monitoring
- DUI courts

# DUI Courts

- DUI offenders *are* different
  - Most inconsistently supervised population
  - More likely to be outwardly compliant
- Sanctions different from traditional treatment court participants
- Unique transportation needs
- Graduation rate - 79%

