Oral Fluid Testing for Drugs

Office of Behavioral Safety Research
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Agenda

• Detection of Presence of a drug vs Determination of Impairment

• Arrest Process, including Oral Fluid Testing

• Types of Oral Fluid Testing
  o On-Site and Laboratory
    ▪ Benefits and Cautions
Drugs and Traffic Safety

• Wide range of substances with potential to impair driving-related skills.

• “Drugs" include alcohol, over-the-counter and prescription medications, and illegal substances
  - Any of these can be used to excess or inappropriately
  - And impact body and behavior in countless ways

• Alcohol is a unique drug, and using the alcohol model in traffic safety for thinking about other drugs is like putting a Square Peg into a Round Hole
Impairment

Unlike for alcohol,

- There is no simple biological test for any drug that provides an accurate indication of impairment
- Specific drug concentration levels cannot be reliably equated with effects on driver performance
Drug Testing in Traffic Safety

• Used in an impaired driving investigation, especially if alcohol has been ruled out –

• To determine presence of a drug
  ◦ Sometimes (but not all times) the amount of the drug

• Drug test result is separate information from determination of impairment
Officer Determines If Impairment

Driving Behaviors

Drug (Licit or Illicit)

On-Site Screening Oral Fluid

Arrest Decision

Drug Recognition Evaluation

Evidential Test (e.g., Oral Fluid) to Lab
- Screening
- Confirmation

Personal Contact Interview

SFST
PBT
ARIDE
# On-Site (Point of Contact)
## Drug Screening Devices

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<tr>
<th>Benefits</th>
<th>Cautions</th>
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<td>- Can be used at roadside (but likely not), or police station, or sobriety checkpoint – close in time to driving is important</td>
<td>- Provide initial Screen of presence of a category of drug. These types of devices cannot Confirm presence of a drug; nor provide amount of drug.</td>
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<td>- Tests for drugs of most interest for impaired driving</td>
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<td>- Results within minutes</td>
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| - Relatively inexpensive  
  ▪ Testing Device  
  ▪ Individual Swabs/Cassettes |  |
| - Can allow police to narrow focus for lab testing |  |

- Some substances are cross-reactive to other substances; this can result in False Positive results
- There can also be False Negative results
- Devices vary on which drugs they test for; and detection thresholds vary  
  ▪ Drug of interest may not be included
On-Site Drug Test Devices

These types of screening devices are an additional tool in law enforcement’s toolbox.

They do not replace established law enforcement practices for identifying, engaging, and arresting impaired drivers.
Laboratory Testing of Oral Fluid Samples

**Benefits**

- Accurate
- Initial Screening test –
  - IF positive, then a more complex test is conducted to **confirm substance**, and determine amount.
  - Gas or liquid chromatography – mass spectrometry (GC/MS) (LC-MS)

**Cautions**

- Expensive
- Some drugs require complex (and very expensive) equipment; trained laboratory professionals
  - May be backlog
- Detection thresholds vary
- Drug of interest may not be included
Drug Testing Recommendations and Standards

National Institute on Standards and Technology (NIST)
Organization of Scientific Area Committees for Forensic Science
Standard for the Analytical Scope and Sensitivity of Forensic Toxicology Testing in Impaired Driving Investigations

National Safety Council Alcohol and Drug Impairment Division
Recommendations for Toxicological Investigations of Drug-Impaired Driving and Motor Vehicle Fatalities – 2017 Update
If Considering an On-Site Device

• Check which drugs it can detect – appropriate for your needs?

• Check detection thresholds – appropriate for your needs?

• Officer training – is this included in your rollout plan?

• Evaluation of device performance – does the device meet your needs?
Resources

NHTSA Drugged Driving Information
https://www.nhtsa.gov/risky-driving/drug-impaired-driving

Limitations of Drug Test Information, Reporting, and Testing Practices in Fatal Crashes
https://rosap.ntl.bts.gov/view/dot/40777

Drug-Impaired Driving: Understanding the Problem and Ways to Reduce It: A Report to Congress
https://rosap.ntl.bts.gov/view/dot/1949

Marijuana-Impaired Driving – A Report to Congress
https://rosap.ntl.bts.gov/view/dot/34995
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