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TRB TRANSPORTATION RESEARCH BOARD

TRB Webinar: Emerging Roadside Chemical Testing for Impaired Driving Investigations

June 6, 2025

1:00 – 2:30 PM



PDH Certification Information

1.5 Professional Development Hours (PDH) – see follow-up email

You must attend the entire webinar.

Questions? Contact Andie Pitchford at TRBwebinar@nas.edu

The Transportation Research Board has met the standards and requirements of the Registered Continuing Education Program. Credit earned on completion of this program will be reported to RCEP at RCEP.net. A certificate of completion will be issued to each participant. As such, it does not include content that may be deemed or construed to be an approval or endorsement by the RCEP.



AICP Credit Information

1.5 American Institute of Certified Planners Certification
Maintenance Credits

You must attend the entire webinar

Log into the American Planning Association website to claim your
credits

Contact AICP, not TRB, with questions

CLE Credit Information

1.25 Continuing Legal Education Credits from the American Bar Association

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TRB did not seek approval for this workshop from the state board, we advise you contact your state board to see if credit would be accepted

See email following webinar for the certificate to provide to your board

Purpose Statement

This webinar will provide an in-depth review of best practices for oral fluid collection and analysis, as well as legal considerations for effective implementation. Presenters will discuss current analytical methodologies and emerging standards of this testing in impaired driving cases.

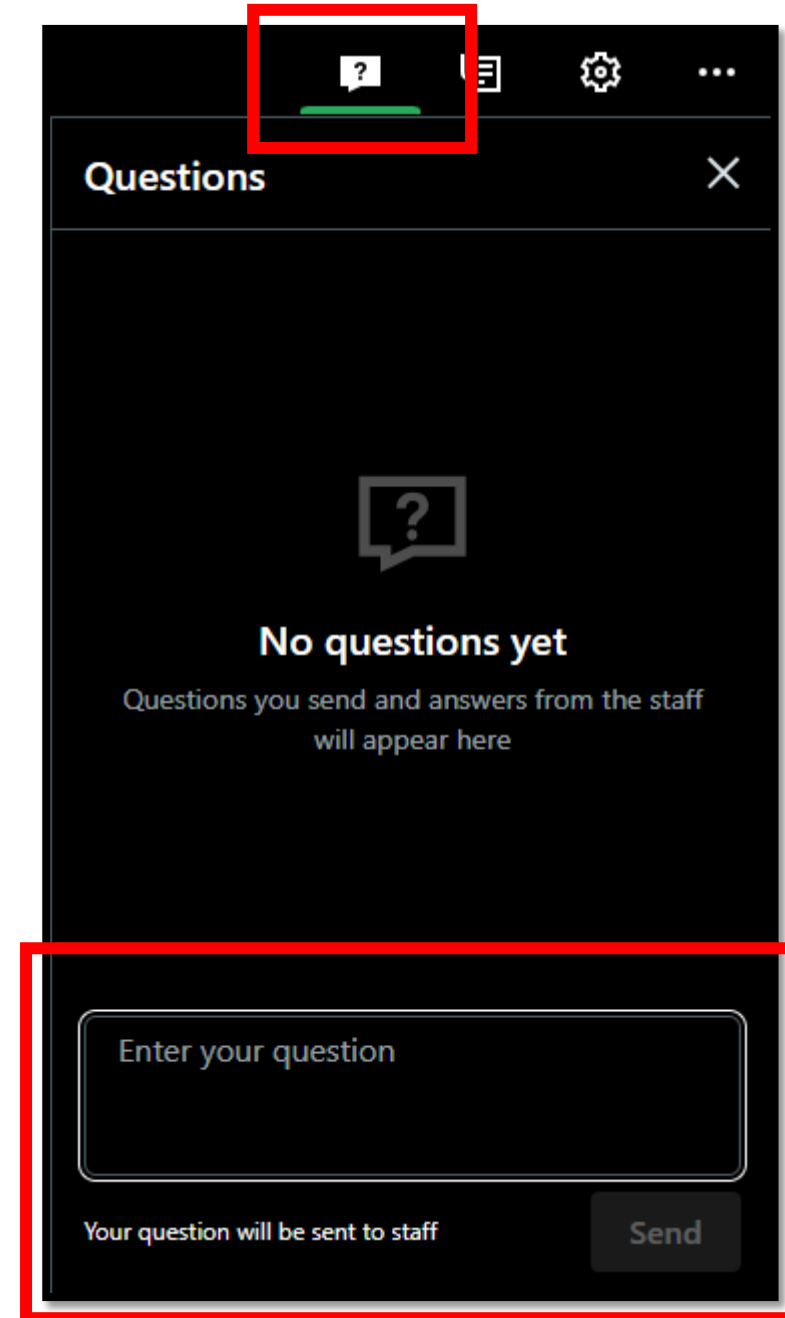
Learning Objectives

At the end of this webinar, you will be able to:

- Assess the strengths and limitations of roadside oral fluid collection and testing
- Identify current standards, analytical techniques, and best practices for oral fluid testing

Questions and Answers

- Please type your questions into your webinar control panel
- We will read your questions out loud, and answer as many as time allows



The screenshot shows a dark-themed mobile application interface for a webinar. At the top, a navigation bar contains several icons: a question mark inside a speech bubble (highlighted with a red box), a list icon, a gear icon, and a three-dot menu icon. Below the navigation bar is a header titled "Questions" with a close button (X) on the right. The main content area displays a large question mark icon and the text "No questions yet" followed by "Questions you send and answers from the staff will appear here". At the bottom, there is a text input field with the placeholder "Enter your question" (highlighted with a red box). Below the input field, the text "Your question will be sent to staff" is displayed next to a "Send" button.

Today's presenters



Amy Miles

amy.miles@slh.wisc.edu

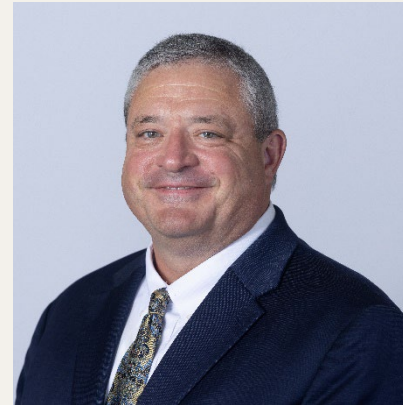
Wisconsin State Laboratory of Hygiene and UW School of Medicine and Public Health



Curt Harper

curt.harper@adfs.alabama.gov

Alabama Department of Forensic Sciences



Darrin Grondel

darrin.grondel@responsibility.org

Responsibility.org and National Alliance to Stop Impaired Driving

Oral Fluid: Standards, Collection and Legal Procedures

Amy Miles

*Wisconsin State Laboratory of
Hygiene*

RESOURCES



Resources

ORAL FLUID FIELD SCREENING (OFFS) & ROADSIDE DRUG TESTING

Drug and polysubstance-impaired driving is a complex and growing problem that represents a critical public safety threat. For many years, officers have been able to utilize preliminary breath tests (PBTs) – field screening for breath alcohol – to supplement roadside investigations for alcohol-impaired driving. There is now scientific evidence to support a reliable technology to conduct similar roadside field screening for drugs.

The use of oral fluid screening roadside is a valuable tool available for law enforcement to strengthen drug-impaired driving investigations. Roadside drug testing programs have been implemented in many countries and an increasing number of states around the country moving forward with similar initiatives. The progress shown in states like Alabama, Arizona, Indiana, Michigan, Wisconsin,

RESOURCES



Data Checklist

ORAL FLUID FIELD SCREENING (OFFS) PROGRAMS

A growing number of states have begun to implement oral fluid field screening (OFFS) programs to combat drug-impaired driving. In addition to aiding law enforcement in impaired driving investigations and creating general deterrence among the public, an important aspect of OFFS programs is the ability to collect and analyze data. Practitioners can use this data to gain a better understanding of the magnitude and characteristics of a jurisdiction's drug-impaired driving problem and make informed decisions about enforcement, policy, and resource allocation.

To assist agencies that are interested in implementing roadside oral fluid screening programs, the [National Alliance to Stop Impaired Driving](#) (NASID) Oral Fluid Working Group developed an implementation checklist that provides guidance on how to navigate this process. Part of this checklist focuses on developing

The following supplemental checklist provides stakeholders with a comprehensive list of data points that can be collected as part of that plan. Data collection and analysis should be done consistently to measure year-to-year progress and trends. To aid stakeholders in planning, the data points are categorized by type and the individual/agency most likely to be responsible for collecting and submitting the data is identified.

For states that have multi-agency programs, the following data can be examined at the agency level in addition to being compiled to produce statewide totals. The program authority (State OFFS Coordinator) can utilize the data to evaluate outcomes for the program as a whole while agencies can assess their respective OFFS practices.

RESOURCES



Implementation Checklist

ORAL FLUID FIELD SCREENING (OFFS) PROGRAMS

Oral fluid screening is a popular method for detecting the presence of drugs and their metabolites from recent drug use due to the speed of sample collection and ease of use. This is especially true when testing in challenging environments such as the roadside, where collecting traditional specimens for preliminary screening is impractical.

Oral fluid samples are harder to adulterate as collections are easily observable, and there is no requirement for special facilities to collect the sample. This makes it a suitable specimen type for anyone collecting oral fluid, including, law enforcement agencies. In the context of an impaired driving investigation, oral fluid screening results can help establish probable cause for arrest for driving under the influence of drugs (DUID).

its use continues to increase throughout the United States. To assist agencies that are interested in implementing a roadside oral fluid screening program, the [National Alliance to Stop Impaired Driving \(NASID\)](#) Oral Fluid Working Group has developed the following checklist to provide guidance on how to navigate this process. Best practices and lessons learned from states that have successfully implemented and expanded programs are incorporated.

An important aspect of any roadside oral fluid screening program is the ability to collect and analyze data, not only to evaluate the program, but to obtain a better understanding of the magnitude and characteristics of a jurisdiction's drug-impaired driving problem. As such, an [OFFS Data Collection & Analysis Checklist](#) provides specific guidance on data

What is Oral Fluid Testing?

Roadside Collection for the Detection of Drugs

Evidentiary

Non - Evidentiary

What is Oral Fluid Testing?

Roadside Collection for the Detection of Drugs

- **Evidentiary**

- **Collected at roadside**
- **Sent to the laboratory for comprehensive testing**

- Non - Evidentiary

- Collected at roadside
- Roadside device is used to screen the sample for drugs

What is Oral Fluid Testing?

Roadside Collection for the Detection of Drugs

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- **Non - Evidentiary**

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What is Oral Fluid Testing?

Roadside Collection for the Detection of Drugs

- **Evidentiary**

- **Collection device is a swab with a tube, buffer**
- **Testing is more complex, larger scope**

- **Non - Evidentiary**

- Collection device is a cartridge, device is portable
- Limited scope, identifies drug class instead of specific compounds for most analytes

What is Oral Fluid Testing?

Roadside Collection for the Detection of Drugs

- Evidentiary

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Testing Standardization - Depends on the “Why”



Workplace Drug Testing –
Health and Human Services /
Substance Abuse Mental
Health Services
Administration (SAMHSA)



Commercial Vehicles,
Transportation Workplace –
Aligns with SAMHSA

Testing Standardization - Depends on the “Why”

- Impaired Driving

[> J Anal Toxicol.](#) 2021 Jul 10;45(6):529-536. doi: 10.1093/jat/bkab064.

Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor Vehicle Fatalities-2021 Update

Amanda L D'Orazio ^{1 2}, Amanda L A Mohr ¹, Ayako Chan-Hosokawa ², Curt Harper ³, Marilyn A Huestis ⁴, Jennifer F Limoges ⁵, Amy K Miles ⁶, Colleen E Scarneo ⁷, Sarah Kerrigan ⁸, Laura J Liddicoat ¹, Karen S Scott ⁹, Barry K Logan ^{1 2}

Affiliations + expand

PMID: 34086916 PMCID: [PMC8272528](#) DOI: [10.1093/jat/bkab064](#)

Abstract

This report describes updates to the National Safety Council's Alcohol, Drugs and Impairment Division's recommendations for drug testing in driving under the influence of drug (DUID) cases and motor vehicle fatalities. The updates are based on a survey of drug testing practices in laboratories in the USA and Canada, a comprehensive review of the prior recommendations and data and research on drugs most frequently detected in DUID cases. A consensus meeting was held with representative forensic science practitioners and the authors of this report to update recommendations. No changes were made to the Tier I scope; however, there were changes to cutoffs of some analytes for blood, urine and oral fluid. Due to increased prevalence in DUID cases, trazodone and difluoroethane were added to the Tier II scope. For clarification, Tier I cutoffs reflect free concentrations, and hydrolysis is recommended but not required. The consensus panel concluded that urine is an inferior matrix to blood and oral fluid as it may represent historical use or exposure unrelated to observed impairment; therefore, future iterations of these recommendations will not include urine as a recommended matrix. Laboratories currently testing urine should work with traffic safety partners to encourage the use of blood and oral fluid as more appropriate specimens and adjust their capabilities to provide that testing.

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[PubMed Disclaimer](#)

Similar articles

[Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor](#)

Testing Standardization - Depends on the “Why”

- Impaired Driving

New Recommendations – Coming Soon!

> [J Anal Toxicol](#). 2021 Jul 10;45(6):529-538

Recommendations for the Investigation of Drug-Impaired Driving for Vehicle Fatalities-2021

L A Mohr¹, Ayako Chan-Hosokawa², Curt Harper³, Jennifer F Limoges⁵, Amy K Miles⁶, Colleen E Scarneo⁷, Sarah Kerrigan⁸, Karen S Scott⁹, Barry K Logan^{1,2}

Recommendations + expand

PMID: 34086916 PMCID: [PMC8272528](#) DOI: [10.1093/jat/bkab064](#)

Abstract

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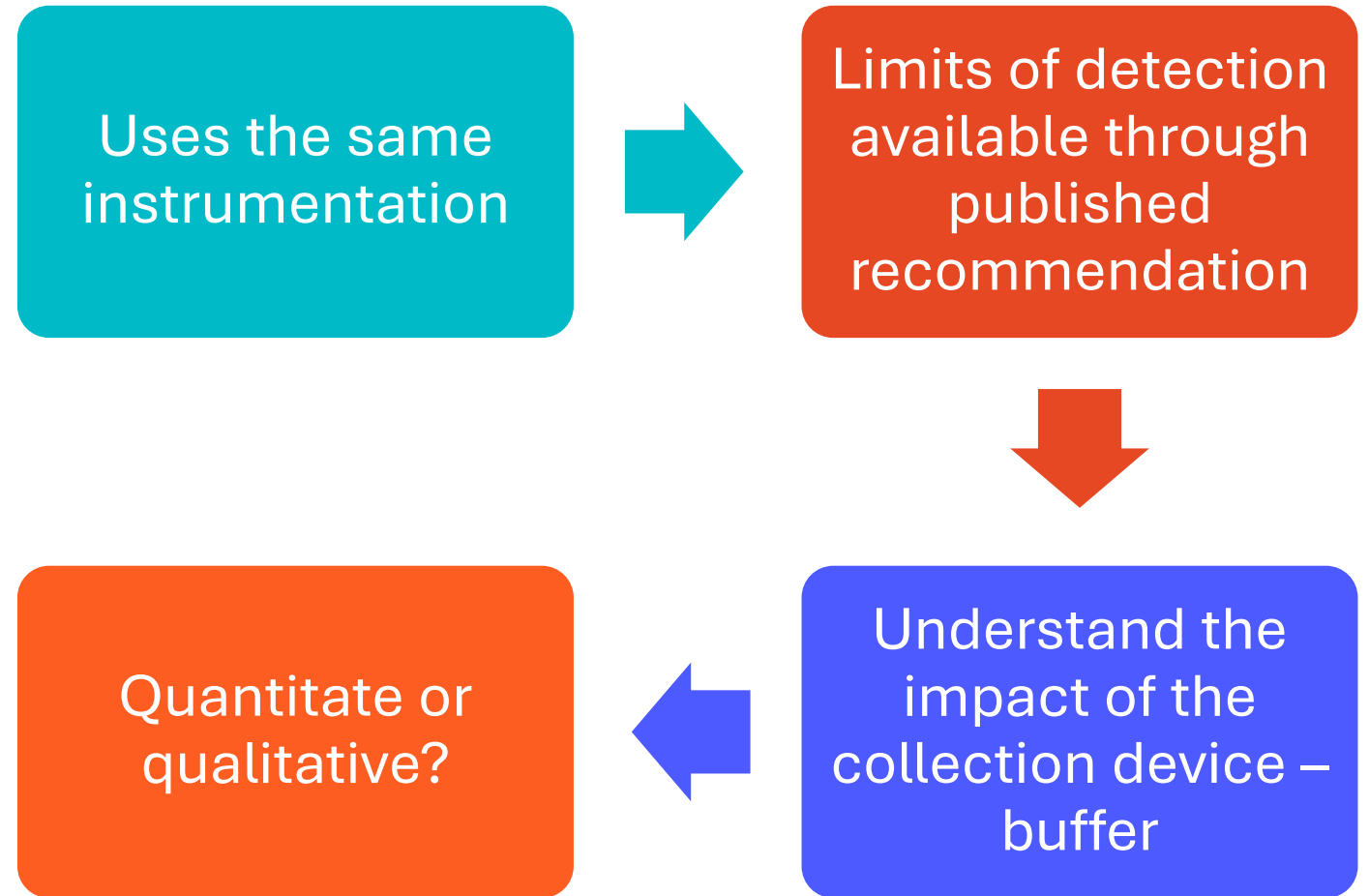
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Similar articles

[Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor](#)

Bringing Oral Fluid Testing Into Current DUID Testing



Legal Considerations

Many states allow for the collection but do not have a program



Alabama and Indiana led the way



Minnesota, Ohio and Michigan have passed laws permitting oral fluid in DUI



New York OF Program - laboratory based

Legal Challenges



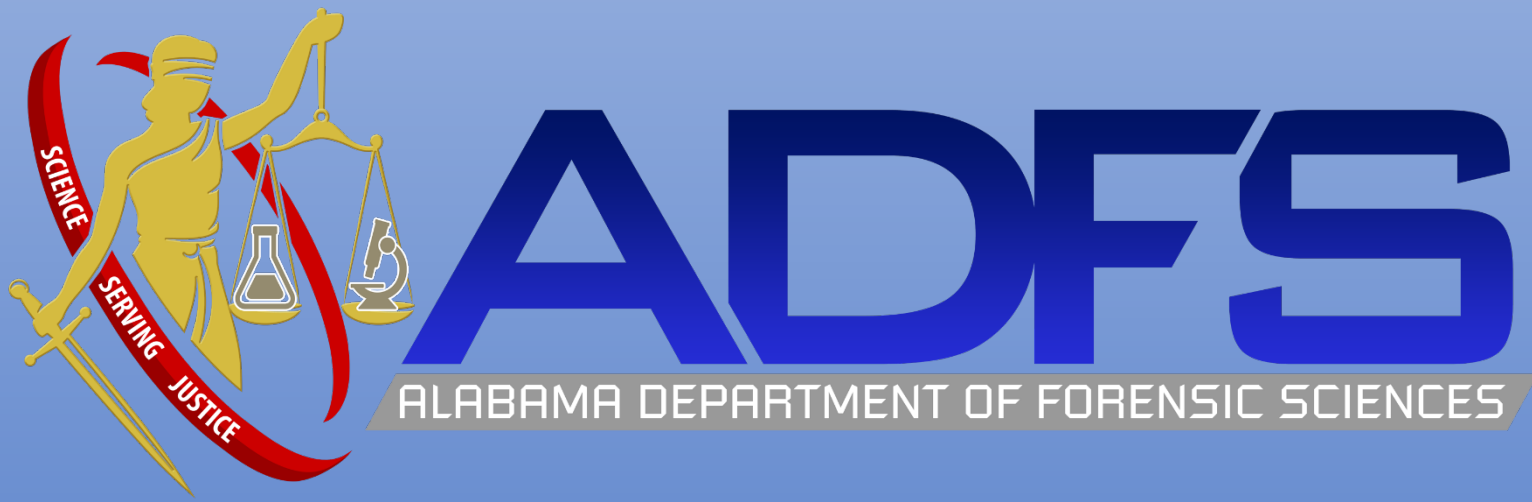
CALIFORNIA IS THE
ONLY CASE SO FAR



WAITING FOR LEGAL
CHALLENGES TO ARISE

Amy Miles
Wisconsin State Laboratory of
Hygiene

amy.miles@slh.wisc.edu



Alabama's Oral Fluid Roadside Screening and Confirmation Testing Program: A 7-Year Review



Curt E. Harper, Ph.D., F-ABFT
Chief Toxicologist
2025 TRB Webinar

Alabama Dept. Forensic Sciences

- Established in 1935
- 19 Toxicologists
- 1 Laboratory (B-ham)
- 500 cases/month
- 6,000/year
- Postmortem
 - 66 County Coroners
 - 3 ME Offices
- DUI & DUI/D



SOFT/AAFS Oral Fluid Committee

Members

- Curt Harper (Chair)
- Mandi Mohr (Vice Chair)
- Sarah Bartock
- Jasmine Maxwell
- Amanda D'Orazio
- Madeleine Swortwood
- Jennifer Colby
- Carrie Hodges
- Bridget Lemberg
- Christine Moore
- Suman Rana
- Greg Sarris
- Karl Scheidweiler
- Kristin Umstead
- Svante Vikingsson
- Seth Tracy

Documents

- OF FAQ Document 2.0
 - Advantages
 - Limitations
 - Specimen comparison

http://soft-tox.org/files/2018%20OF_FAQ_FINAL.pdf
- OF Pilot Project Guidelines
 - Key Stakeholders
 - Program Management
 - Program Protocol
 - Consent Form (example)

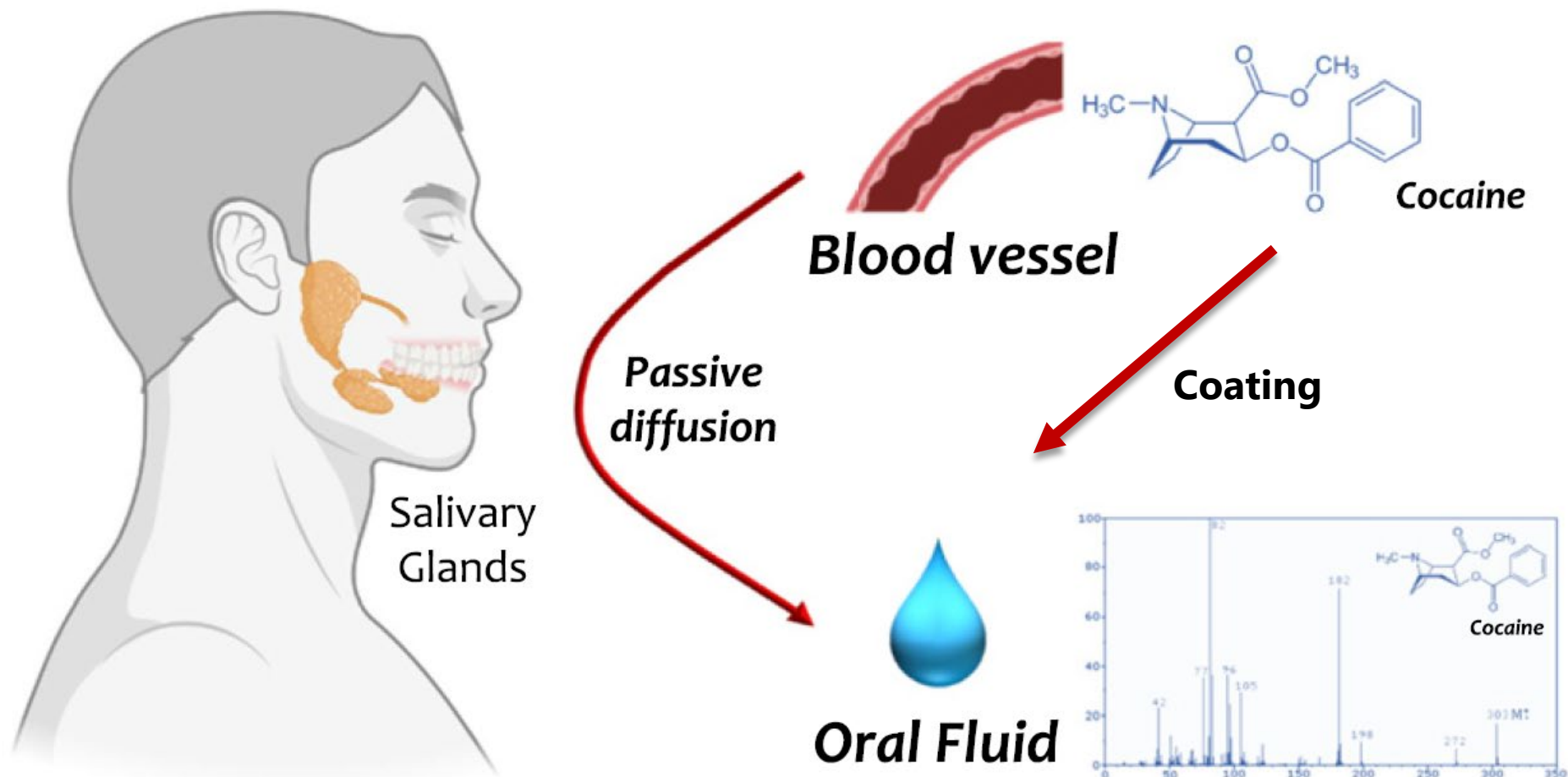
http://soft-tox.org/files/OF_DUID_2020.pdf
- OF Literature
 - Roadside
 - Confirmation Testing

Blood, Oral Fluid, or Urine – Which Specimen is Superior?



Detection Time Comparison, active versus inactive metabolites





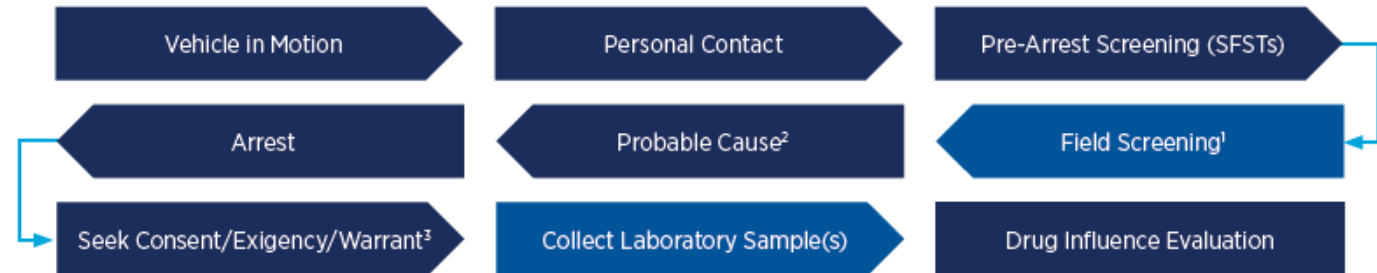
ORAL FLUID FIELD SCREENING (OFFS)

- Portable & handheld options available
- Easy & fast collection
- Minimally invasive, similar to breath test
- Gender neutral collections
- Rapid results (≤ 10 minutes)
- Demonstrated accuracy, sensitivity & specificity
- Used in conjunction with other evidence to build probable cause for arrest decision
- Quickly identifies potential polydrug impaired drivers (regardless of BAC level)
- Results may support search warrant requests for additional biological samples
- Follow manufacturer instructions/guidelines
- Admissible in hearings like those on probable cause

LABORATORY TESTING

- Easy & fast collection
- Less invasive compared to blood & urine collection
- Collection close to the time of driving (e.g., at roadside)
- Gender neutral collections
- Less expensive to collect than blood
- Likely represents recent drug use
- Often increased detectability of drugs with rapid elimination from blood
- Difficult to adulterate
- Detects pharmacologically active, or impairing drugs (e.g., THC, cocaine)
- Laboratories use validated and accepted analytical techniques and instruments
- Admissible in all court proceedings; evidentiary

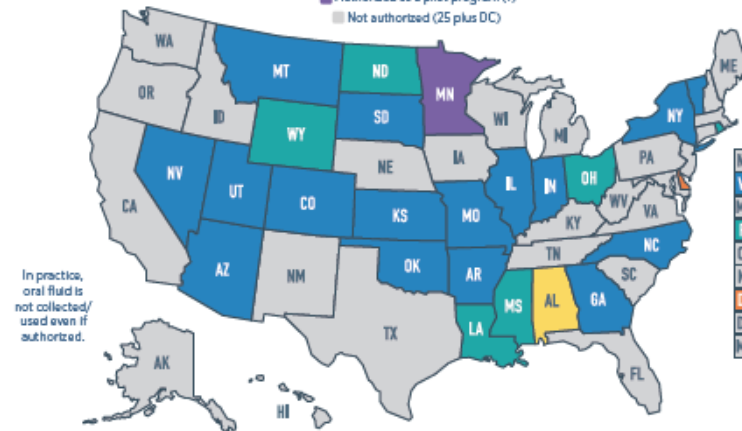
WHEN TO COLLECT ORAL FLUID DURING AN INVESTIGATION



ORAL FLUID AUTHORIZED TO DETECT DRUGS?

September 2024

- Authorized by implied consent law (16)
- Authorized by impaired driving statute; implied consent N/A (6)
- Authorized by implied consent law AND impaired driving statute (1)
- Authorized for those under the age of 21 (1)
- Authorized as a pilot program (1)
- Not authorized (25 plus DC)



Interested In starting a program in your state?

Stakeholders to consult:

- Law Enforcement
- Toxicology Personnel
- Traffic Safety Resource Prosecutor(s)
- SFST & DRE State Coordinators
- Judiciary Representatives
- Device Manufacturers
- Local Impaired Driving Groups
- Researchers and/or Data Analysts
- State Highway Safety Office
- Probation Personnel
- State Public Health Agency
- Driver Licensing Officials

Pilot Project guidelines:

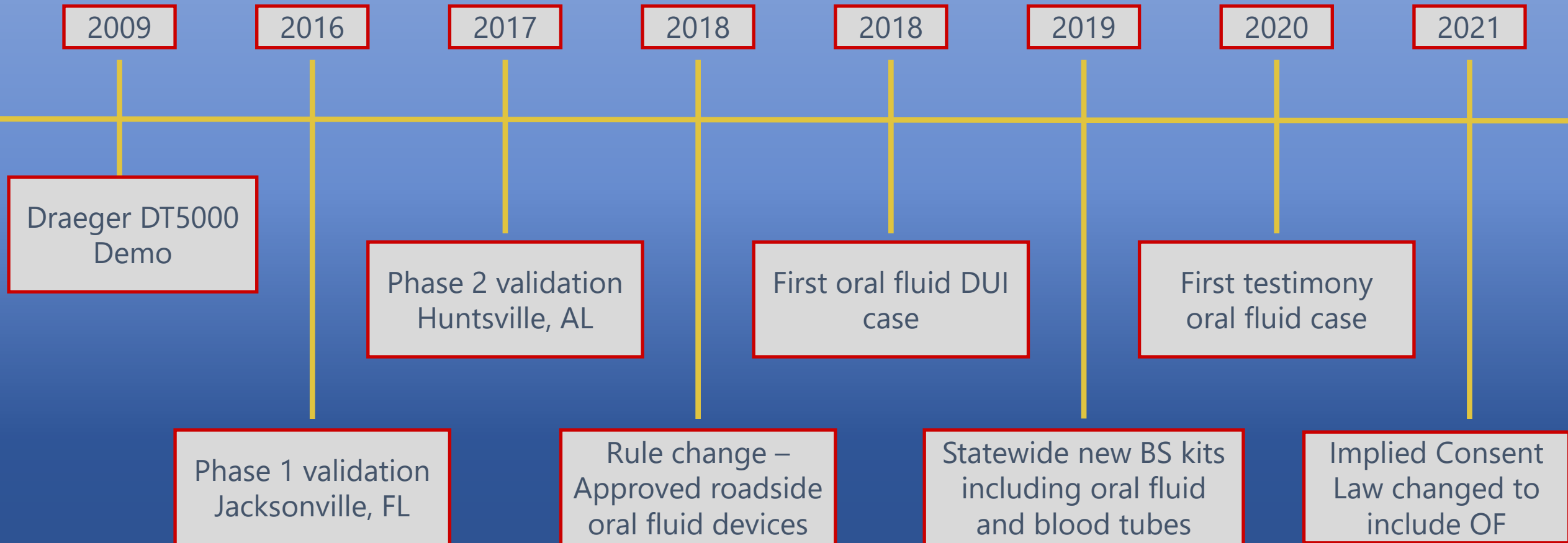
soft-tox.org/files/2014_OF_Pilot.pdf

ADDITIONAL RESOURCES

- AAA Foundation for Traffic Safety | www.aaafoundation.org
- Alabama Department of Forensic Sciences | www.adfs.alabama.gov/services/tox/toxicology-oral-testing-program
- DRE Program | www.theiacp.org/projects/the-international-drug-evaluation-classification-program
- National Safety Council | www.nsc.org/work-safety/get-involved/divisions/alcohol-drugs-and-impairment
- Traffic Safety Resource Prosecutor List | ndaa.org/programs/ntlc/commercial-drivers-license/traffic-safety-resource-prosecutor-list
- Society of Forensic Toxicology FAQs | www.soft-tox.org/oral-fluid-literature



7-year Review



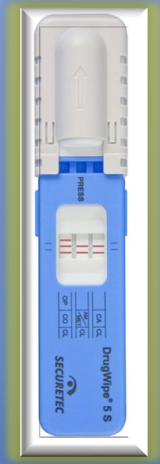
4 Approved Roadside Devices **Alabama Department of Forensic Sciences (Est. 2018, 7 yrs)**

(probable cause)

DrugWipe



Laboratory Testing



Blood Tubes



Quantisal Oral Fluid Collection Device

Collect blood and oral fluid in all misdemeanor and felony DUIs

Screen

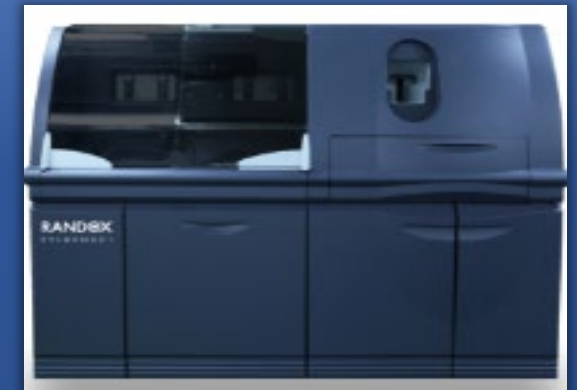


Tecan Evo 75
(THC Only)

Confirmation



Agilent 6470 LC/MS
Mass Spectrometer



Radox Evidence Analyzer Plus
(Drugs of Abuse)

Radox MultiSTAT



OF Statutes

Abbott SoToxa



Court Experience

- 32-5-192 (Implied Consent)
- 32-5A-194 (Impaired Driving Statute)
- Chapter 370-1-1 (Approved OF Device List)

- ~3,500 cases analyzed
- No case law (as of yet)
- ~25 testimonies



OF Roadside Device Evaluation References

- ROSITA-1 [Roadside Testing Assessment] (1999-2000)
- ROSITA-2 (2003-2006)
- DRUID [The Driving under the Influence of Drugs, Alcohol and Medicines] (2006-2011)
- SOFT/AAFS Pilot Guidelines (2020)
- United Kingdom
- Canada
- Australia
- USA – OSAC/ASB (*in the future*)



Comparison of ROSITA, ROSITA-2, and DRUID Projects

Feature	ROSITA (1999-2000)	ROSITA-2 (2003-2006)	DRUID (2006-2011)
Primary Goal	Feasibility of oral fluid for roadside drug testing	Evaluation of 9 commercially available devices	Standardizing detection and assessing crash risk (8 devices)
Device Performance	Low sensitivity, especially for THC	Some improvement but still unreliable for THC	Improved but still challenges for THC detection
Standard Cutoff Values?	No	THC: 5 ng/mL Cocaine: 10 ng/mL Amphetamine/Methamphetamine 25 ng/mL Opiates: 10 ng/mL Benzodiazepines: 5 ng/mL	THC: 1 ng/mL Cocaine: 10 ng/mL Amphetamine/Methamphetamine 25 ng/mL Opiates: 5-20 ng/mL Benzodiazepines: 1-5 ng/mL
Sensitivity/Specificity Criteria	Not established	Sensitivity: $\geq 90\%$, Specificity: $\geq 90\%$ Accuracy: $\geq 95\%$	Sensitivity: $\geq 80\%$, Specificity: $\geq 80\%$ Accuracy: $\geq 80\%$
Recommendation	More research needed	Standardization required before implementation	Roadside testing should be supplemented with laboratory confirmation



OF Roadside Device Selection

- Scope of Analysis (Targets)
- Appropriate Cutoffs
- Collection & Testing Time
- User-friendly, portable, handheld
- Robust, environmentally appropriate
- Fit for purpose: Probable Cause (USA)



OF Roadside Device Evaluation

- Typical Parameters
 - Accuracy, Sensitivity, Specificity, False Positives/Negatives
 - Performance at the cutoff
 - Environmental assessment (e.g. temperature)
 - Cross-Reactivity
- “Old” Device
 - Peer-reviewed published studies
- “New” Device
 - Pilot study, See SOFT OF Guidelines



Evaluation of On-Site Oral Fluid Drug Screening Technology (2021)

- DOT HS 812 854 Distributed by DOT & NHTSA
- Authors: Buzby, Mohr, Logan, Lothridge
- 5 device comparison
- Evaluated against Rosita & DRUID criteria
- Performance, Cross-reactivity, Interferents, Environmental testing



DUI Kit Costs - Blood, Oral Fluid, Urine

Which one is more cost effective?



DUI Kit Type	Total Price (\$)
Blood + Oral Fluid	\$12.60
Blood + Urine	\$12.50
Blood only	\$10.60
Urine only	\$5.76
Oral Fluid only	\$5.86

THC Blood vs. OF Positivity in DUID Cases in Alabama from 2018-2024

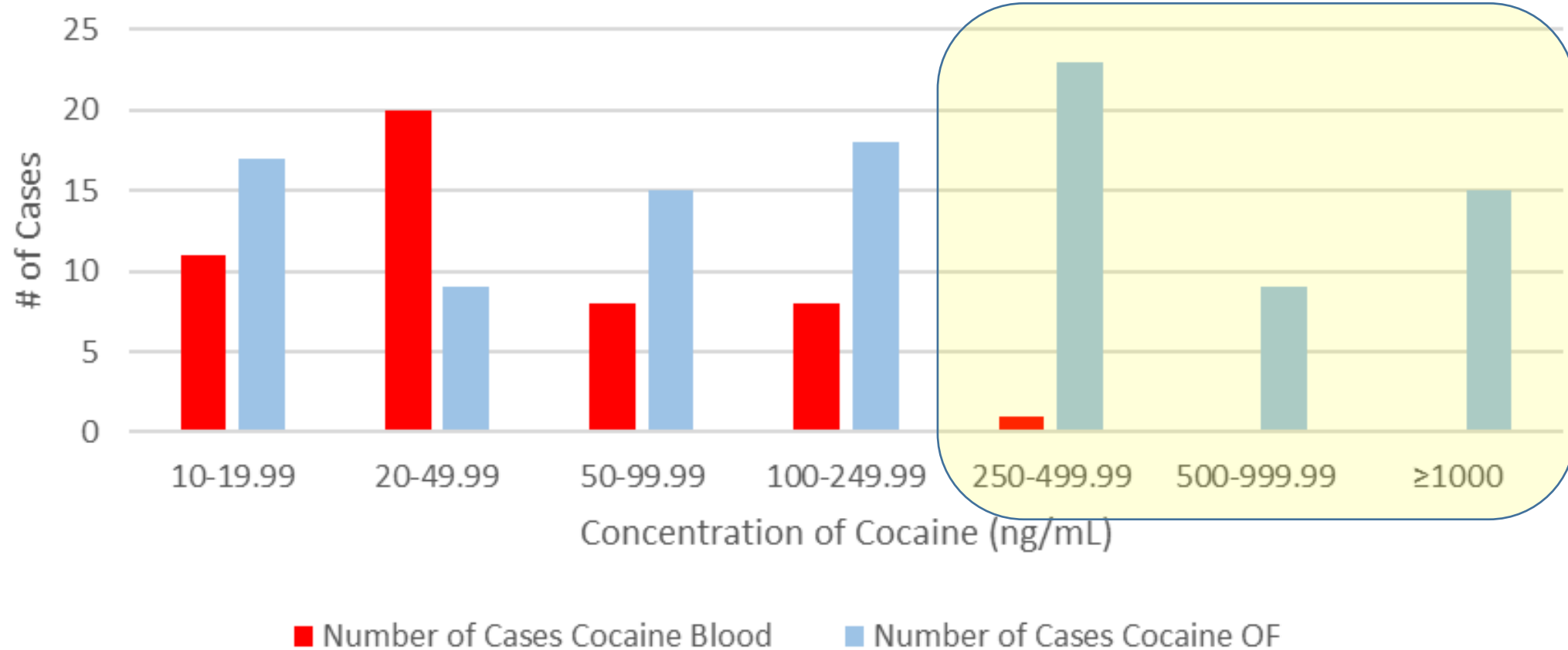
	Blood Specimens	Oral Fluid Specimens
n (Analyzed)	831	869
n (Positives)	80% (663)	93% (807)
% > 2 ng/mL	70%	95%
% > 5 ng/mL	36%	87%
% > 10 ng/mL	12%	73%
% > 100 ng/mL	0%	29%
% > 500 ng/mL	0%	8%
% > 1,000 ng/mL	0%	4%
Median (Avg)	3.6 (5.4)	34 (249)
Limit of Detection	1.0 ng/mL	1.0 ng/mL

*Positivity rate = $n(\text{positive}) / n(\text{analyzed})$ from cases that screened positive for fentanyl in blood and/or oral fluid

The mean and median oral fluid: blood ratios were 55:1 and 14:1, respectively.



Concentration of Cocaine OF vs. Blood

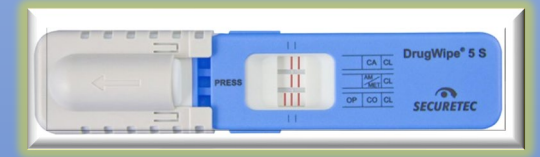


Blood – Avg (Median): 36 (57) ng/mL
Oral Fluid – Avg (Median): 194 (455) ng/mL
The mean oral fluid: blood ratio was 11:1.



Discussion

- Roadside OF Device Cost Considerations
 - Standalone tests, devices, consumables
 - Internal Budgeting & Grants
 - Evaluation, Validation, Approval Process
- Benefits of Automated Confirmation Methods
 - Manual (\$\$\$), semi-automated (\$\$), automated (\$)
 - Analyst time savings
 - Cost savings
 - Improves turnaround times
 - Increased batches sizes
 - Eliminate stop limit testing protocols



Future Aims

- Evaluation of new roadside oral fluid devices
- National Center on Forensics
 - Free Oral Drug Testing Trainings
 - Manufacturer Operator Certs
- Further automation
 - QTOF OF, Cannabinoids OF, Blood assays
 - Accessioning, sample preparation
 - Hamilton Star and other Platforms



References

1. Harper, C.E. Hudson, J, Tidwell, K., Boswell, R., Yong, H., Maxwell, A.J. Implementation of the First Comprehensive State Oral Fluid Drug Testing Program for Roadside Screening and Laboratory Testing in DUID Cases - A Five-year Review. JAT. 2023.
2. Harper, Mata, & Lee. The impact of fentanyl on DUIDs and traffic fatalities: Blood and oral fluid data. JFS. 2023.
3. AAA Oral Fluid Toolkit. Curt Harper, Christine Moore, Jennifer Knudsen, Bill Lindsey. 2022.
4. Buzby, Mohr, Logan, Lothridge. Evaluation of On-Site Oral Fluid Drug Screening Technology. 2021.



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ADFS Toxicology Discipline Chief

Curt.harper@ads.alabama.gov



Implementation of the First Comprehensive State Oral Fluid Drug Testing Program for Roadside Screening and Laboratory Testing in DUID cases—A 5-Year Review

Curt E. Harper^{1,*}, Jason S. Hudson², Kristin Tidwell¹, Rebekah Boswell¹, Hui Liu Yong¹, Antoinette J. Maxwell¹

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²Quest Diagnostics, 10101 Renner Blvd, Lenexa, KS 66219, USA

*Author to whom correspondence should be addressed: Alabama Department of Forensic Sciences, 2026 Valleydale Rd, Hoover, AL 35244, USA.

Email: Curt.Harper@adfs.alabama.gov

Abstract

Oral fluid (OF) is a valuable specimen for driving under the influence of drugs (DUID) applications. This study demonstrates the implementation of the first comprehensive OF drug testing program in the United States, including approved roadside screening OF devices for law enforcement and validated liquid chromatography–tandem mass spectrometry (LC–MS–MS) confirmation methods. Three roadside OF screening devices were evaluated: the Dräger DrugTest® 5000, Abbott SoToxa®, and Randox Evidence MultiSTAT™. Two qualitative LC–MS–MS confirmation methods were validated per ASB Standard 036. The first method utilized an automated dispersive pipette extraction extraction using Integra and Hamilton STARlet platforms for drugs of abuse. The second method used a liquid–liquid extraction to detect cannabinoids. The prevalence of drugs in blood and OF was monitored over 5 years of casework. Calibration curves were analyzed with each batch to monitor OF concentrations for research purposes. Three roadside OF screening devices were deemed fit for purpose. Devices demonstrated appropriate sensitivity, specificity, positive and negative predictive values, and accuracy above 80% for targeted drugs except for benzodiazepines (DrugTest® 5000) and amphetamine (SoToxa®). The validated LC–MS–MS OF confirmation methods met the National Safety Council-recommended cutoffs for 18/21 (86%) of the targets. Over 5 years of casework, THC and cocaine were detected at a positivity rate of 90% and 97% in OF versus 75% and 44% in blood, respectively. OF: blood ratios exceeded unity for parent drugs. Median concentrations of THC in OF and blood were 31 and 3.5 ng/mL, respectively. OF is a viable alternative or supplemental specimen for DUID investigations. Collecting OF close to the driving event increases the opportunity to identify pharmacologically active substances, and when combined with blood analysis results, an elevated OF: blood ratio provides valuable information for DUID investigation purposes.



ORIGINAL PAPER

Toxicology

The impact of fentanyl on DUIs and traffic fatalities: Blood and oral fluid data

Curt E. Harper PhD¹ | Dani C. Mata MS² | Dayong Lee PhD³

¹Alabama Department of Forensic Sciences, Hoover, Alabama, USA

²Orange County Crime Laboratory, Santa Ana, California, USA

³Houston Forensic Science Center, Houston, Texas, USA

Correspondence

Curt E. Harper, Alabama Department of Forensic Sciences, 2026 Valleydale Rd, Hoover, AL 35244, USA.

Email: curt.harper@adfs.alabama.gov

Abstract

Fentanyl has emerged as the most prolific drug in the ongoing opioid epidemic and has greatly impacted traffic safety in recent years. This study aimed to evaluate fentanyl prevalence and concentrations in blood and oral fluid in driving under the influence of drugs (DUI) cases in three different regions (i.e., Alabama, Orange County, CA, and Houston, TX) from 2017 to 2022. Furthermore, traffic fatalities were evaluated for Alabama and Orange County, CA. Fentanyl positivity in DUI and traffic fatalities increased for most years in this study. In Alabama, the prevalence of fentanyl DUI cases increased 4-fold in 2022 compared to 2017. Orange County's increase from 2017 to 2022 was 14-fold. In Houston, the increase was approximately 2-fold from 2019 to 2022. The greatest increase for all laboratories coincided with the start of the COVID-19 pandemic. In 2022, the median fentanyl DUI blood concentrations were 4.7, 11, and 4.7 ng/mL in Alabama, Orange County, and Houston, respectively. Most fentanyl cases were polydrug cases ($\geq 90\%$). Methamphetamine, THC, and alprazolam were the most frequently detected drugs in combination with fentanyl. Alabama has collected oral fluid and blood in DUI cases since 2018. The detection of fentanyl in oral fluid was comparable to blood. However, 59% and 8.7% of fentanyl-positive cases had concentrations of >20 ng/mL in oral fluid and blood, respectively. Therefore, oral fluid as an alternative or supplemental specimen to blood is an attractive approach for fentanyl in DUI cases. This study contributes to understanding recent fentanyl trends and their impact on traffic safety.



Today's presenters



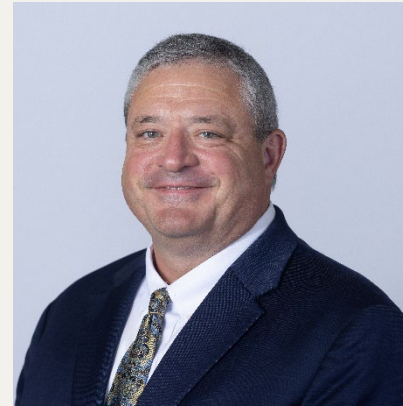
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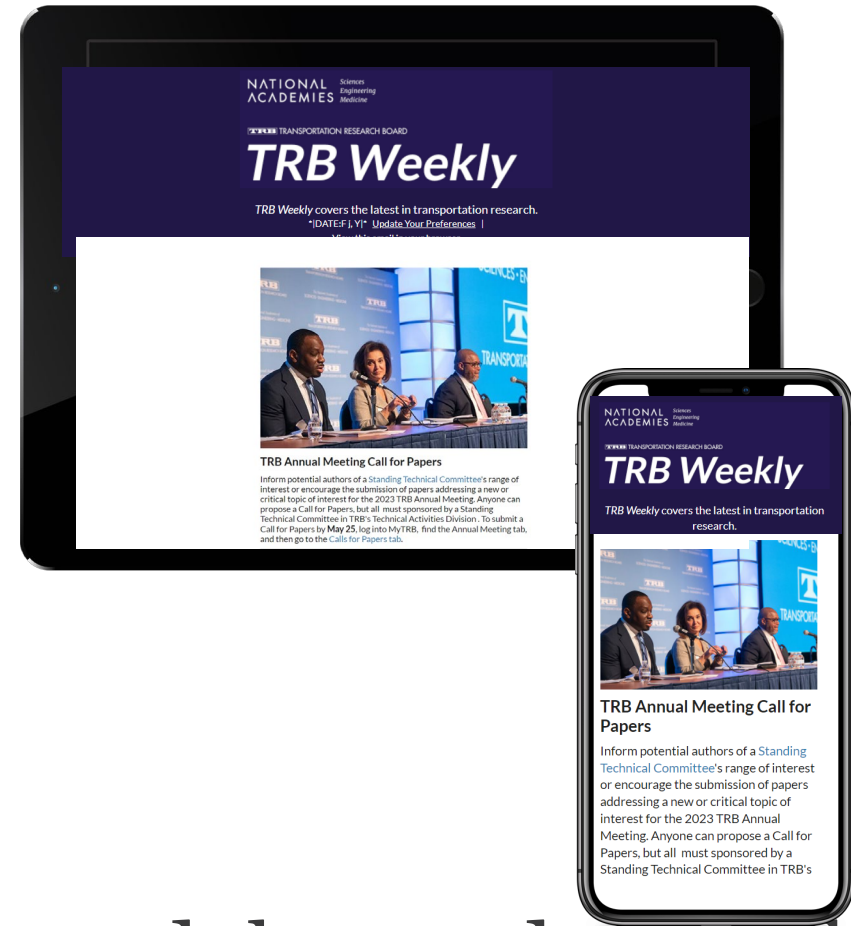


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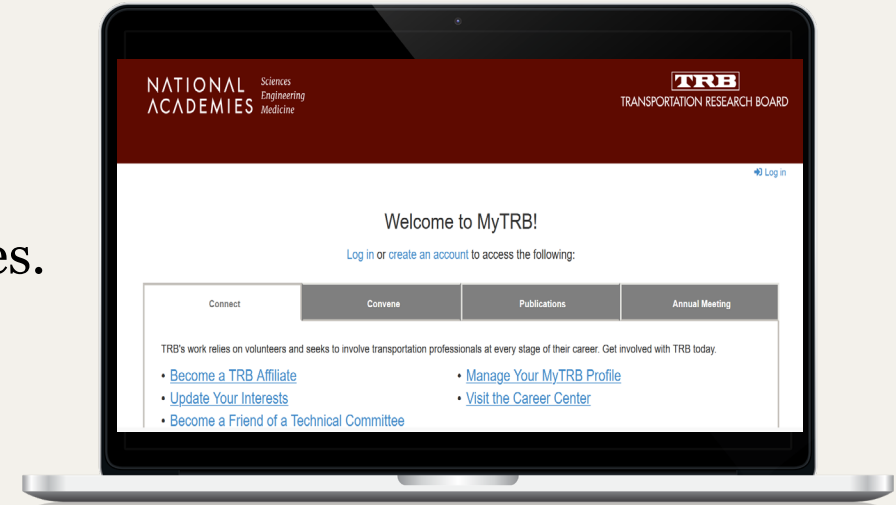


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