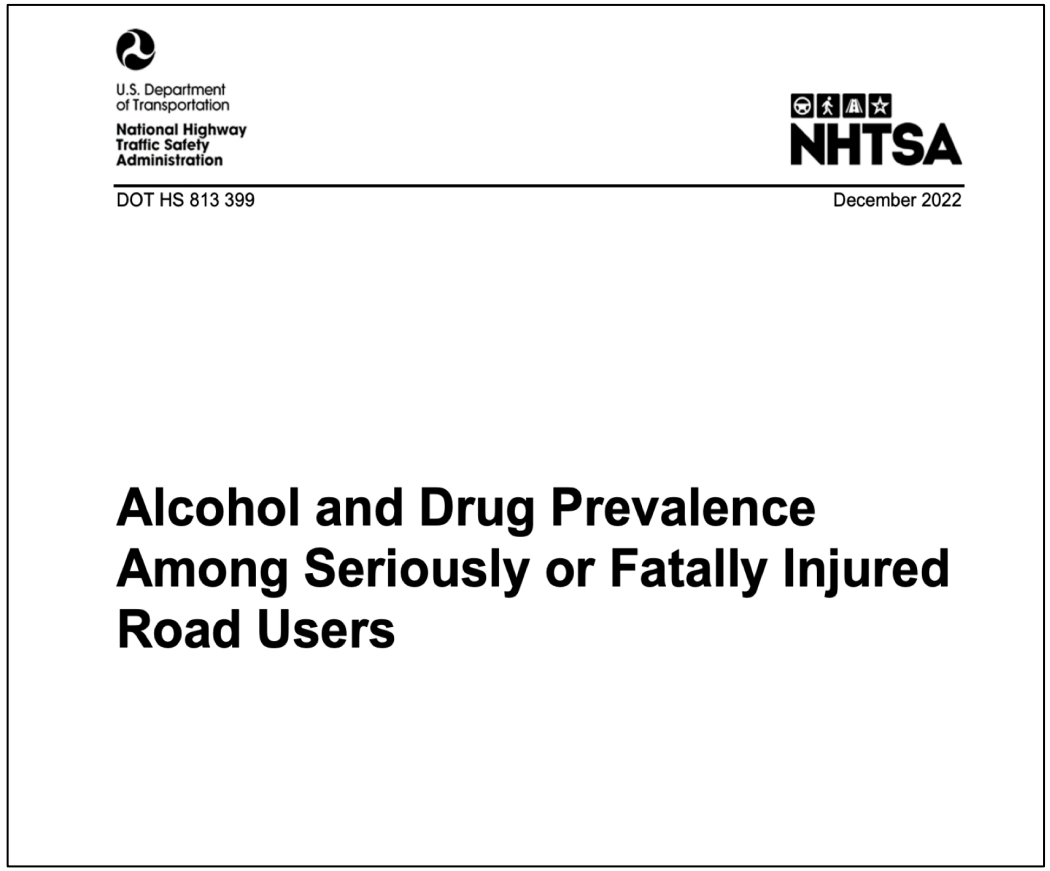
Successfully Implementing a Roadside Drug Testing Program

September 10, 2024

NHTSA – Alcohol and Drug Prevalence


U.S. Department of Transportation
National Highway Traffic Safety Administration

NHTSA

DOT HS 813 399

December 2022

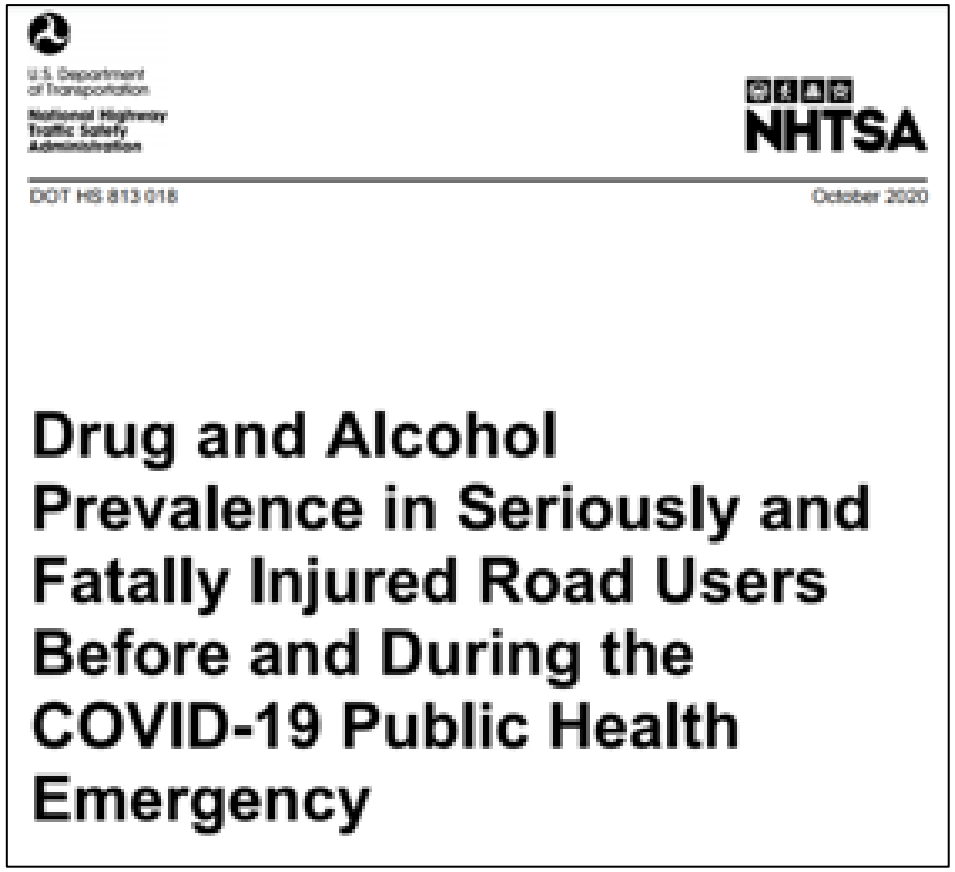
Alcohol and Drug Prevalence Among Seriously or Fatally Injured Road Users

Overall, 55.8% of the injured or killed roadway users tested positive for one or more drugs (including alcohol) on this study's toxicology panel. The most prevalent drug category detected was cannabinoids (active THC) with 25.1% positive, followed by alcohol (23.1%), stimulants (10.8%), and opioids (9.3%).

Presence of Substances Among Drivers During COVID-19

	Before (N= 1,880)		During (N= 1,123)	
Drug Category	**n**	**%**	**n**	**%**
Alcohol	400	21.3	302	26.9*
Cannabinoids^	402	21.4	350	31.2*
Stimulants	190	10.1	115	10.2
Sedatives	158	8.4	95	8.5
Opioids	142	7.6	145	12.9*
Antidepressants	37	2.0	5	0.4*
Over-the-Counter	43	2.3	18	1.6
Other Drugs	27	1.4	20	1.8
At Least 1 Category	959	51.0	714	63.6*
Multiple Categories	341	18.1	267	23.8*

^ Active THC (Δ-9-THC or 11-OH-THC)
* Significantly different ($p < .05$) compared to Before period



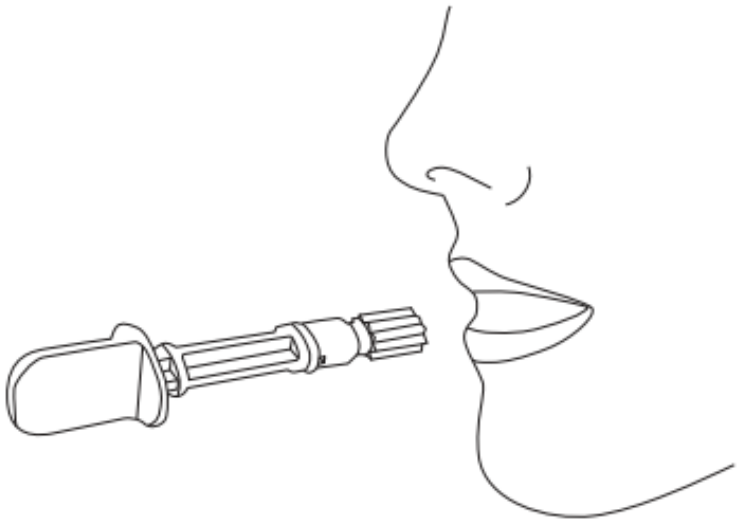
Thomas, F. D., Berning, A., Darrah, J., Graham, L., Blomberg, R., Griggs, C., Crandall, M., Schulman, C., Kozar, R., Neavyn, M., Cunningham, K., Ehsani, J., Fell, J., Whitehill, J., Babu, K., Lai, J., and Rayner, M. (2020, October). Drug and alcohol prevalence in seriously and fatally injured road users before and during the COVID-19 public health emergency (Report No. DOT HS 813 018). National Highway Traffic Safety Administration.

What is Oral Fluid Testing?

https://alere.wistia.com /medias/79539mia0f

Oral fluid screening technology

- Analyzers use lateral flow immunoassay technology.
- Simple and quick collection process.
- Most devices test for common drugs of abuse (e.g., cannabis (THC), cocaine, amphetamines, methamphetamines, opioids, benzodiazepines).
- Use pre-set cut-off levels for each drug.
- Rapid screening results in minutes.
- Ability to print results (e.g., to attach to arrest reports); device can store results (including date/time).
- Technology has built-in quality checks and procedures.



Screening vs. Confirmation testing

Oral fluid screening	Confirmation test
Investigative tool used to support probable cause	Evidential test
Sample collected at roadside	Sample collected post-arrest (unless evidential OF)
Analysis conducted at roadside	Analysis conducted in forensic laboratory
Limited test panel (6+ drugs)	Significantly larger test panel (lab dependent)
Qualitative result (+/-)	Quantitative result (ng level)
Real-time information	Analysis can take months
Not used in court proceedings	Key piece of evidence in court proceedings

Advantages of roadside Oral Fluid drug testing

- A reflection of free drug circulating in the blood
- Sample taken proximate to traffic stop
- No medical personnel required for collection
- Parent drug detection shows recency of use
- Aid the investigative process – help establish probable cause
- Enhances public safety
- Creates general deterrence

Good, Better, Best

Good: 18,000 Officers

All Officers are Trained in Standardized Field Sobriety Tests (SFST's) during Basic Training

Better: 2,200 Officers, 12%

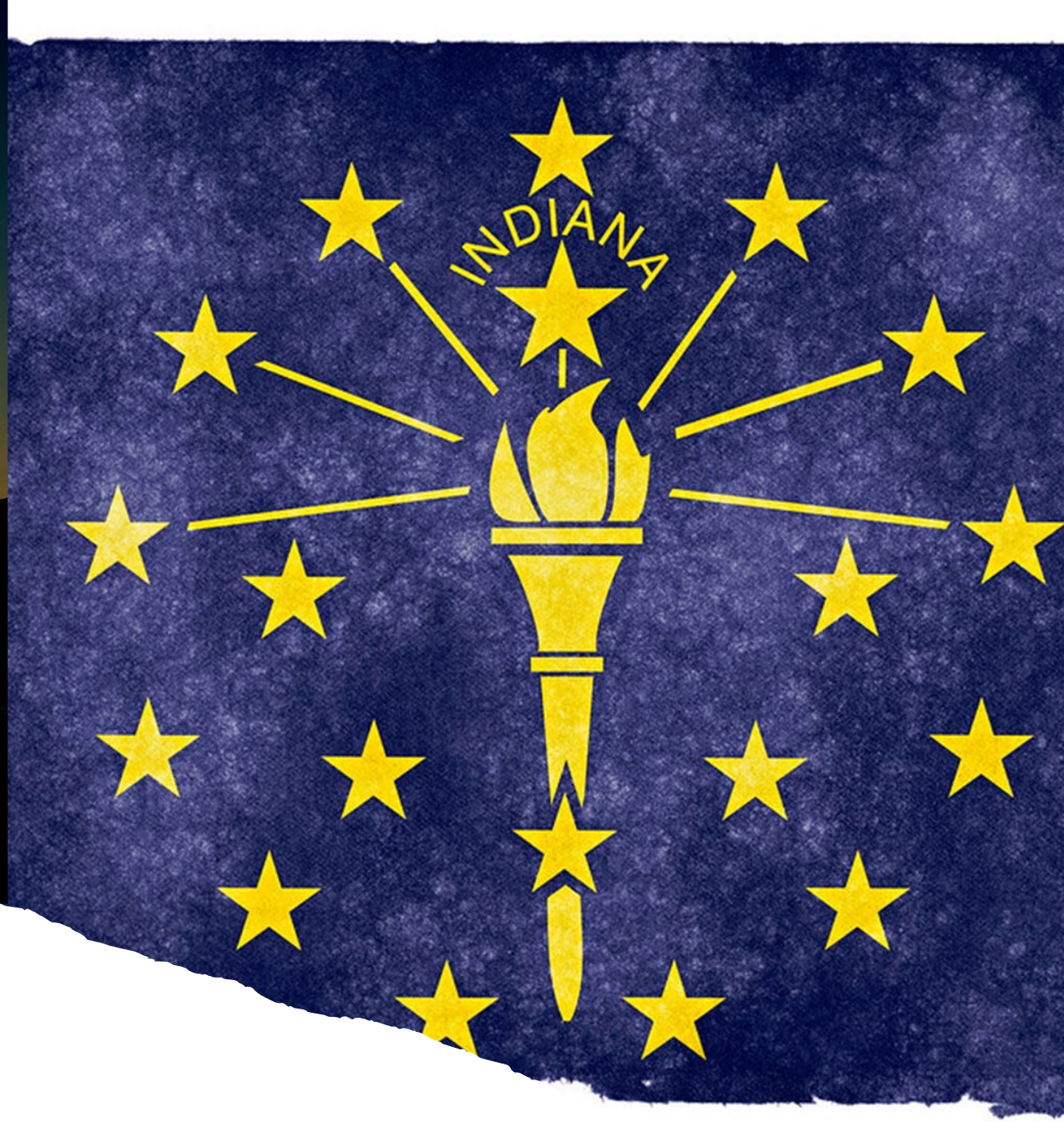
ARIDE: Advanced Roadside Impaired Driving E

Best: 197, 1.1%

DRE: Drug Recognition Expert School, 1% the Elite

Making Better, Better with roadside testing

Today’s Speakers



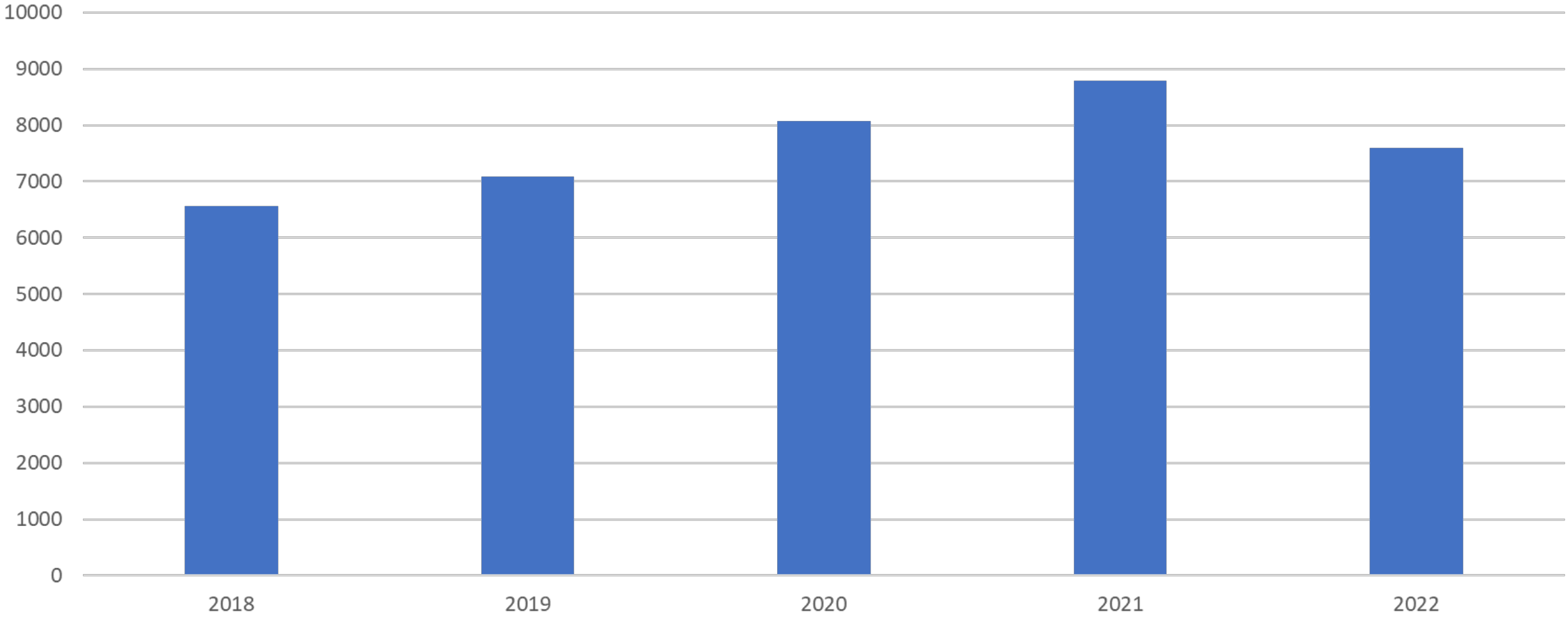
INDIANA

Roadside Oral Fluid Program

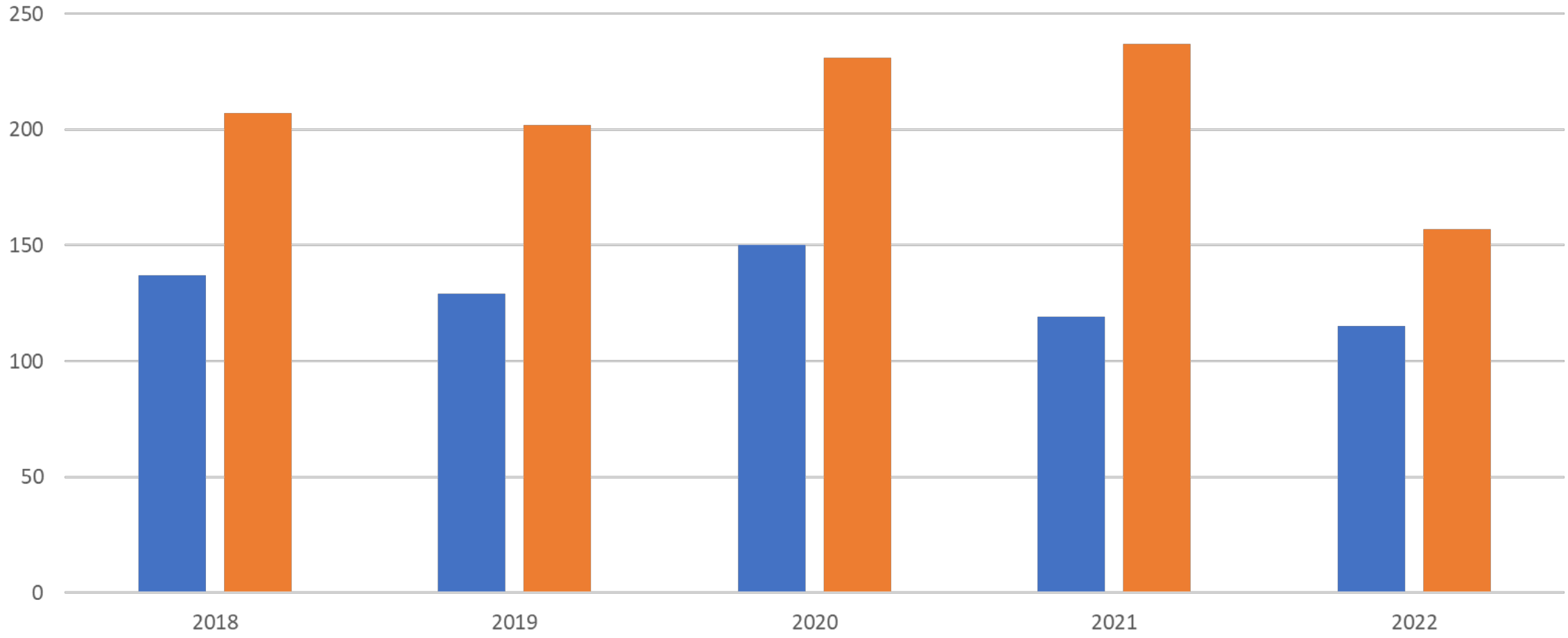
WHY

- Increase effectiveness of DUI enforcement thereby reducing impaired driving and DUI related fatal crashes
- Gain an understanding of oral fluid testing principals and the proper operation of oral fluid testing instruments
- Understand the changing topography surrounding Indiana increasing the need for roadside drug screening

Drug Sample Submissions to the State Lab



Alcohol Vs Drug Positive



2020

80 oral fluid analyzers issued to Officers across Indiana with emphasis in Urban areas

2021

Focus changed to concentrate on training and data collection

2022

- Focus shifts to equal usage between urban and rural areas
- Trained approximately 500 officers in **A**dvanced **R**oadside **I**mpaired **D**riving **E**nforcement

2023

Implemented with the Indiana State Police

2024 (through early August)

Cumulative Results

5,039 Tests

Approximately 62% Positive

Approximately 70% THC

Indiana State Police

Since June 2023

467 uses

81% positive tests

86% Positive tests had CANNABIS

Results

Launched in 2020 with a statewide rollout	
Training implemented at at all ARIDE courses	
Indicators of success	Increase in identifying drug impaired drivers
	Increase in DRE evaluations and call outs
	Increase in drug submissions to the state lab
Keys to success	Engage all stakeholders early to obtain buy-in
	Focus on ARIDE trained officers
	Develop a plan to collect data

"We first received the Oral Fluid Testing units in the fall of 2020. From 2019 to 2020 we saw a 210% increase in DRE evaluations. From 2020 to 2021, we saw an additional 153% increase in DRE evaluations (first full year of Oral Fluid Testing). For the 3.5 years we have been using Oral Fluid Testing, we have seen a 228% increase in DRE evaluations when compared to 2019."

Sgt John Kreiger – Fort Wayne Police Department

Attend the initial training course provided by a qualified trainer

Participate in an evidence collection exercise and demonstration

Pass a final online examination with a score of 100%

Oral Fluid Operator Training

OVERVIEW OF INDIANA ORAL FLUID PROJECT

(GUIDELINES AND POLICY)

WHEN TO USE

- Similar to a Preliminary Breath Test (PBT)
- After Standard Field Sobriety Test (SFST)/ARIDE
- When reasonable suspicion exists that the driver is impaired on drugs other than alcohol

How to be successful

Ensure	Ensure that Roadside Oral Fluid Testing is an available option for law enforcement
Ensure	Ensure that your state lab has the funding and personnel needed to test for both Alcohol and Drugs
Ensure	Ensure that ARIDE is being taught to law enforcement (Invite the Prosecutor)

WHY

To SAVE LIVES

Indiana saw a reduction in fatal crashes in 2023 of 9.2% from 2022

Chris Kirby

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KANSAS ROADSIDE ORAL FLUID

CARRIE HODGES, MLS (ASCP)^{CM}, D-ABFT-FT

KANSAS BUREAU OF INVESTIGATION

- Timeline / history of oral fluid in Kansas
- Laboratory based assessment
- Resources
- Kansas Oral Fluid advisory committee
- Preliminary data

TIMELINE / HISTORY

2011
New section added to statute….
"director…shall…saliva"

2012
Statute 75-712h:
"shall" changed to "authorized to"

2017
Kansas roadside drug testing study published

2019
All references to "saliva" replaced with "oral fluid"

TIMELINE / HISTORY

2020 February
Request from KHP to approve the Abbott SoToxa™

2022 January
Laboratory based assessment of Abbott SoToxa™

2022 June
Abbott SoToxa™ begins movement through the K.A.R. process.

2023 February
K.A.R. Published

KANSAS STATUTE (2019)

- **75-712h. Director authorized to adopt rules and regulations for preliminary screening devices for testing of oral fluid for law enforcement purposes.** The director of the Kansas bureau of investigation is authorized to adopt rules and regulations establishing: (a) Criteria for preliminary screening devices for testing of oral fluid for law enforcement purposes, based on health and performance considerations; and (b) a list of preliminary screening devices that are approved for testing of oral fluid for law enforcement purposes and that law enforcement agencies may purchase and train officers to use as aids in determining probable cause to arrest and grounds for requiring testing pursuant to K.S.A. 8-1001, and amendments thereto.

Laboratory Based Assessment Criteria

- Criteria established by our agency
  - Literature review: published & unpublished studies; operating manuals
  - Pre-analytical criteria: temperature range of device/consumables; storage requirements for device/consumables; safeguards for factors affecting the reliability of the results (ex. expired cartridges, failed controls)
  - Analytical criteria: ease of use, scope, time, adequacy of controls, cutoff, sensitivity/specificity/accuracy, poly-drug case analysis, local drug trends, factors resulting in an invalid reading
  - Post-analytical criteria: does the device allow for storage, download and/or printing of results for review at a later time

Pursuant to K.S.A. 75-712h, the below criteria will be used by the KBI Forensic Science Laboratory to evaluate oral fluid screening devices for law enforcement purposes. It is the responsibility of the requesting agency to provide all comprehensive and relevant literature for the requested device. If the literature does not adequately address the below criteria, the device may be not recommended for use, delayed for approval, or the requesting agency may need to provide further resources for laboratory-based studies. After device evaluation, the KBI Forensic Science Laboratory will prepare a recommendation for the Kansas Bureau of Investigation Director.

- ☐ Literature Review: A thorough review of applicable literature will be conducted and documented. Literature may include but is not limited to the following:
  - ☐ Published, peer-reviewed Kansas studies.
  - ☐ Unpublished Kansas studies may require the review of raw data.
  - ☐ Published, peer-reviewed studies outside of Kansas.
  - ☐ Unpublished studies outside of Kansas may require the review of raw data.
  - ☐ Operating manuals for the use of the device and testing cartridges/strips/etc.

- ☐ Pre-analytical Variable Criteria: Proposed devices will be evaluated for pre-analytical variables that may have significant impact on the performance of the device. When applicable, the literature must adequately address, but is not limited, to the following:
  - ☐ Operating temperature range of the device.
  - ☐ Operating temperature range of consumables (cartridges, reagents, controls, etc.)
  - ☐ Storage requirements of device, cartridges, reagents, controls, etc.
  - ☐ Safeguards for factors affecting reliability of the results such as expired cartridges, expired reagents, failed controls, temperature extremes, etc.
  - ☐ Measures for ensuring sufficient sample is collected for analysis.

- ☐ Analytical Criteria: Proposed devices will be evaluated for analytical performance. If the literature review does not adequately assess the below areas, the requesting agency may need to provide additional resources.

Received: 28 July 2017 | Revised: 31 August 2017 | Accepted: 1 September 2017
DOI: 10.1002/dta.2297

WILEY

RESEARCH ARTICLE

Roadside drug testing: An evaluation of the Alere DDS®2 mobile test system

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Correspondence
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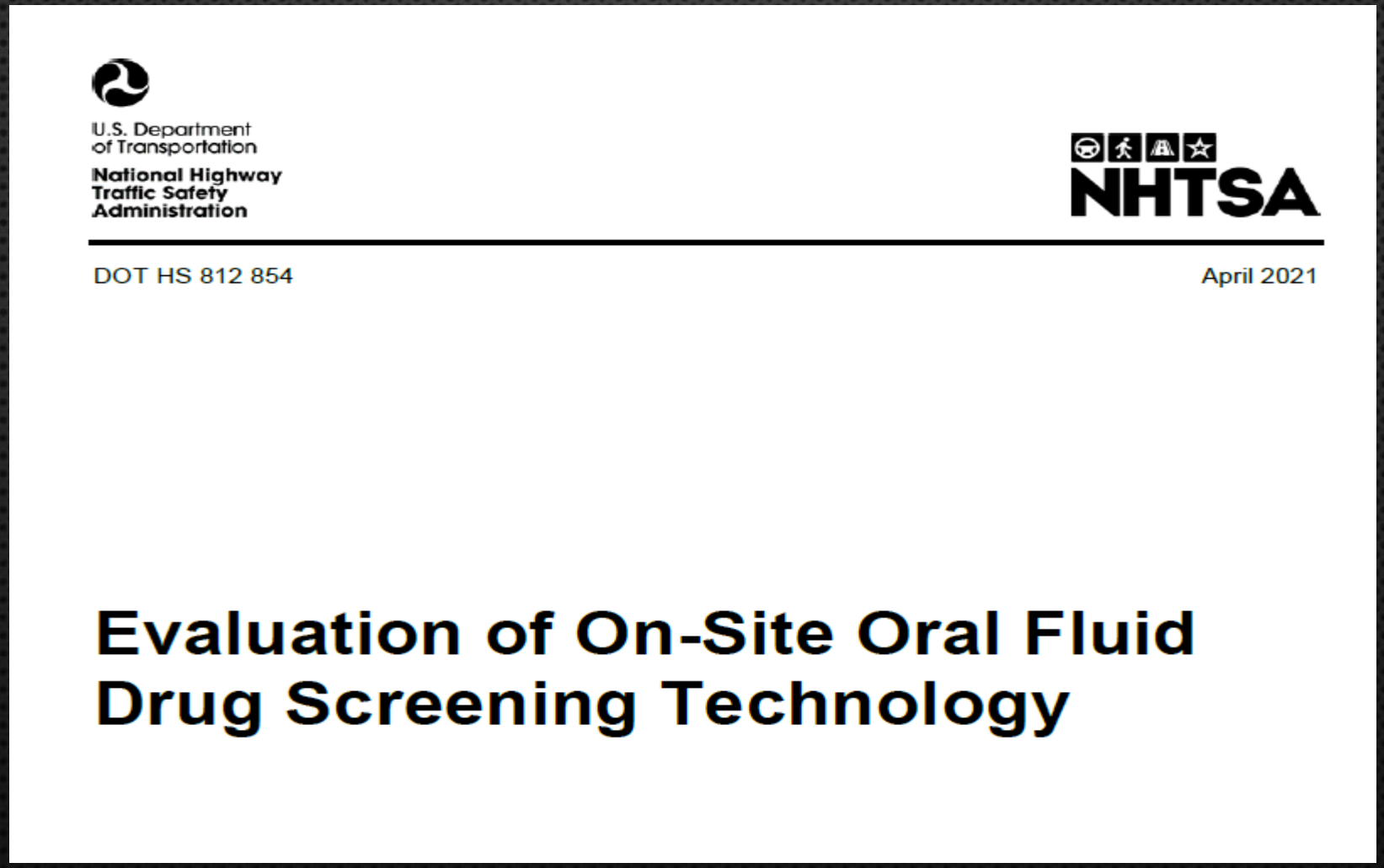
Email: cmoore@immunalysis.com

Abstract

The number of drivers using drugs has increased over the last few years, and is likely to continue its upward trend. Testing drivers for alcohol use is routine and standardized, but the same is not true for the identification of driving under the influence of drugs (DUID). The Drug Evaluation and Classification Program (DECP) was developed to train police officers to recognize the signs and symptoms of recent drug use and remains an invaluable program; however, there are insufficient numbers of these highly trained drug recognition experts (DREs) available to attend every potential drug involved traffic incident. While blood and urine samples are used to test for drugs in a driver, both have disadvantages, particularly as they pertain to the length of time required after a traffic stop to sample collection. Therefore, the development of oral fluid testing devices which can be operated at the roadside and have the potential to assist officers in the identification of drug use is a major advancement in DUID cases. This project evaluated the performance of one

Rohrig TP, Moore CM, Stephens K, et al. Roadside drug testing: An evaluation of the Alere DDS®2 mobile test system. Drug Test Anal. 2017;1-8. https://doi.org/10.1002/dta.2297



Buzby, D., Mohr, A. L. A., Logan, B. K., & Lothridge, K. L. (2021, April). *Evaluation of on-site oral fluid drug screening technology* (Report No. DOT HS 812 854). National Highway Traffic Safety Administration.

KBI LABORATORY BASED ASSESSMENT

- Cross-reactivity study
- Blood interference study
- Inadequate sample study
- Testing delay study

Note: all testing performed used authentic, pooled oral fluid that was collected daily and screened via immunoassay.

KBI LABORATORY BASED ASSESSMENT

- CROSS-REACTIVITY STUDY

Drug	10 ng/mL	100 ng/mL
Alprazolam	Negative (all)	Positive-CNS Depressant-BZO
Clonazolam	Negative (all)	Positive-CNS Depressant-BZO
Clonazepam	Negative (all)	Positive-CNS Depressant-BZO
Etizolam	Negative (all)	Positive-CNS Depressant-BZO
Flualprazolam	Negative (all)	Positive-CNS Depressant-BZO
Flubromazolam	Negative (all)	Positive-CNS Depressant-BZO
Flubromazepam	Negative (all)	Positive-CNS Depressant-BZO
Lorazepam	Negative (all)	Negative (all)
Δ8-THC	Negative (all)	Positive-Cannabis
CBN	Negative (all)	Positive-Cannabis
Cocaethylene	Negative (all)	Negative (all)
6-MAM	Negative (all)	Positive-Narcotic - OPI

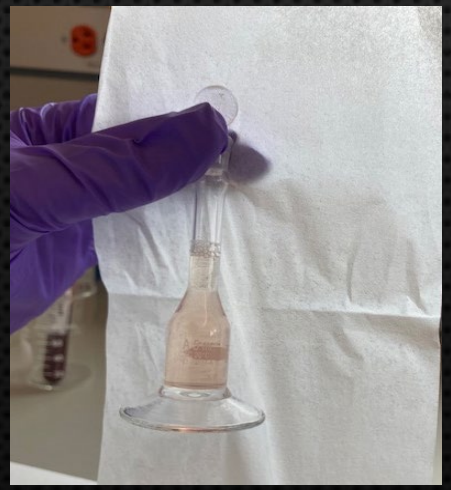
Drugs (pooled)	1000 ng/mL
Citalopram Fentanyl Gabapentin Sertraline Bupropion Hydroxybupropion	Negative (all assays)

KBI LABORATORY BASED ASSESSMENT

- **BLOOD INTERFERENCE STUDY**

	Negative Control	*Positive Control
Light Blood	Negative (all)	Positive (all)
Medium Blood	Negative (all)	Positive (all)
Heavy Blood	Negative (all)	Positive (all)

*Positive Control (100 ng/mL)
• d-amphetamine
• temazepam
• Δ9-THC
• benzoylecgonine
• morphine
• d-methamphetamine



5 µL blood (5 mL volumetric)

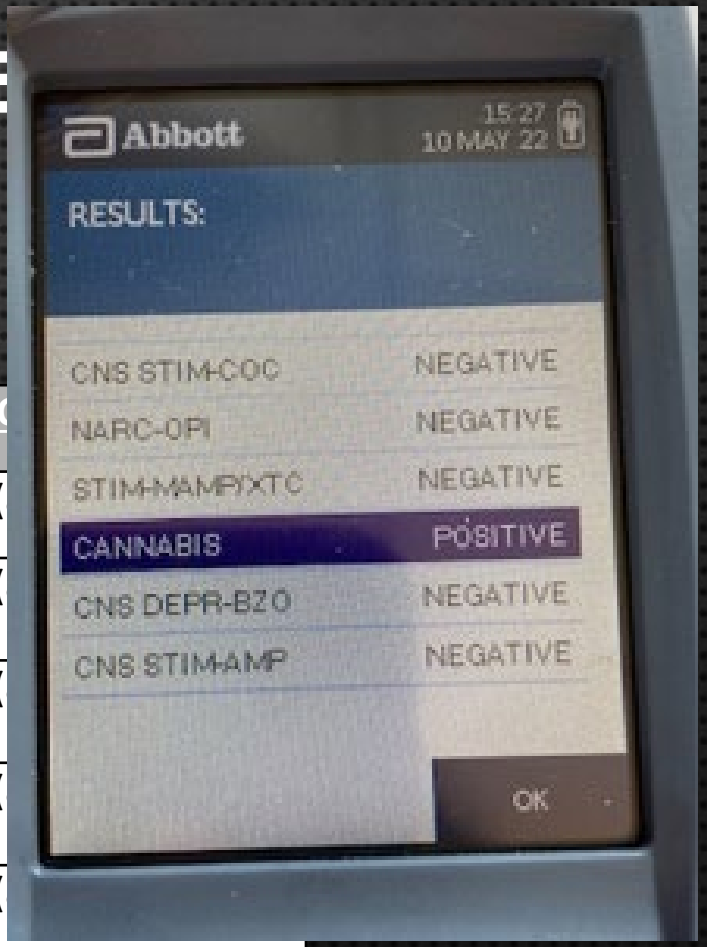
20 µL blood (5 mL volumetric)

65 µL blood (5 mL volumetric)

KBI LABORATORY BASED ASSESSME

- INADEQUATE SAMPLE STUDY

µL Added	Indicator Color	Negative Control	Positive C
550	Blue	Negative (all)	Positive (
500	Blue	----------	Positive (
450	Blue	----------	Positive (
400	No color change	----------	Positive (
350	No color change	----------	Positive (
250	No color change	Negative (all)	Negative (Meth) Positive (all others)



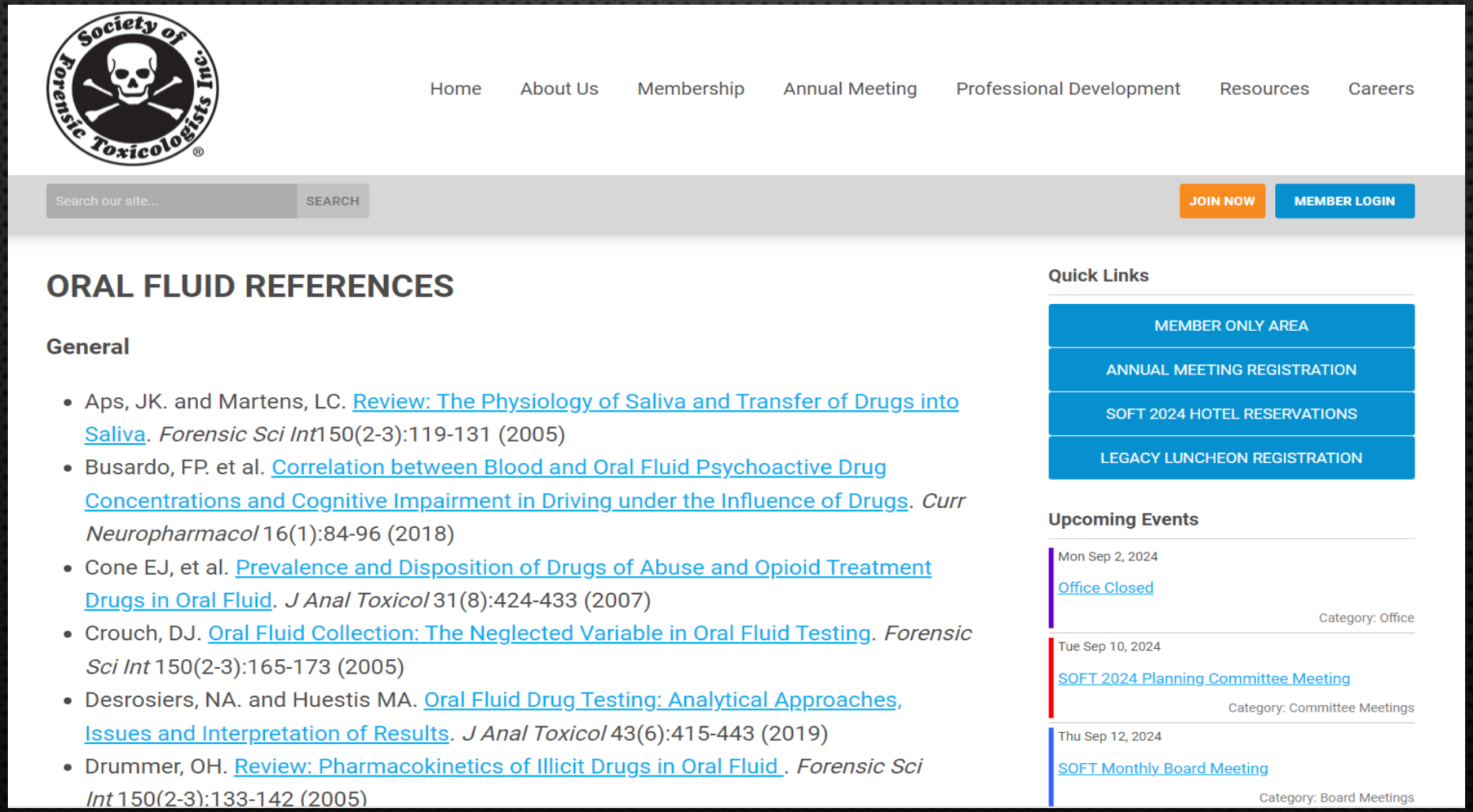
Note: Dry cartridges repeatedly produced a positive Cannabis result.

KBI LABORATORY BASED ASSESSMENT

- TESTING DELAY STUDY

Time (minutes)	Negative Control	Positive Control
5	Negative (all)	Positive (all)
10	Negative (all)	Negative (Cannabis) Positive (all others)
15	Negative (all)	Negative (Cannabis) Positive (all others)
20	Negative (all)	Negative (Cannabis) Positive (all others)

USEFUL RESOURCES – SOFT-TOX.ORG



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ORAL FLUID REFERENCES

General

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- Busardo, FP. et al. Correlation between Blood and Oral Fluid Psychoactive Drug Concentrations and Cognitive Impairment in Driving under the Influence of Drugs. *Curr Neuropharmacol* 16(1):84-96 (2018)
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- Desrosiers, NA. and Huestis MA. Oral Fluid Drug Testing: Analytical Approaches, Issues and Interpretation of Results. *J Anal Toxicol* 43(6):415-443 (2019)
- Drummer, OH. Review: Pharmacokinetics of Illicit Drugs in Oral Fluid . *Forensic Sci Int* 150(2-3):133-142 (2005)

Quick Links

MEMBER ONLY AREA

ANNUAL MEETING REGISTRATION

SOFT 2024 HOTEL RESERVATIONS

LEGACY LUNCHEON REGISTRATION

Upcoming Events

Mon Sep 2, 2024
Office Closed
Category: Office

Tue Sep 10, 2024
SOFT 2024 Planning Committee Meeting
Category: Committee Meetings

Thu Sep 12, 2024
SOFT Monthly Board Meeting
Category: Board Meetings

USEFUL RES RY WEBSITE

KANSAS BUREAU OF INVESTIGATION

Forensic Science Center

Application for Oral Fluid Field Test Consideration

Are there any known issues that should be addressed in the evaluation?

No ○ Yes ◉ (if yes, list issues below)

Will the manufacturer provide a test instrument/technology to the KBI Laboratory for assessment?

No ○ Yes ◉

Is there any available research, previous validation studies, or operating manuals for this instrument?

No ○ Yes ◉ (if yes, please include them with this application)

Does the device allow for storage, download and/or printing of results for review at a later time?

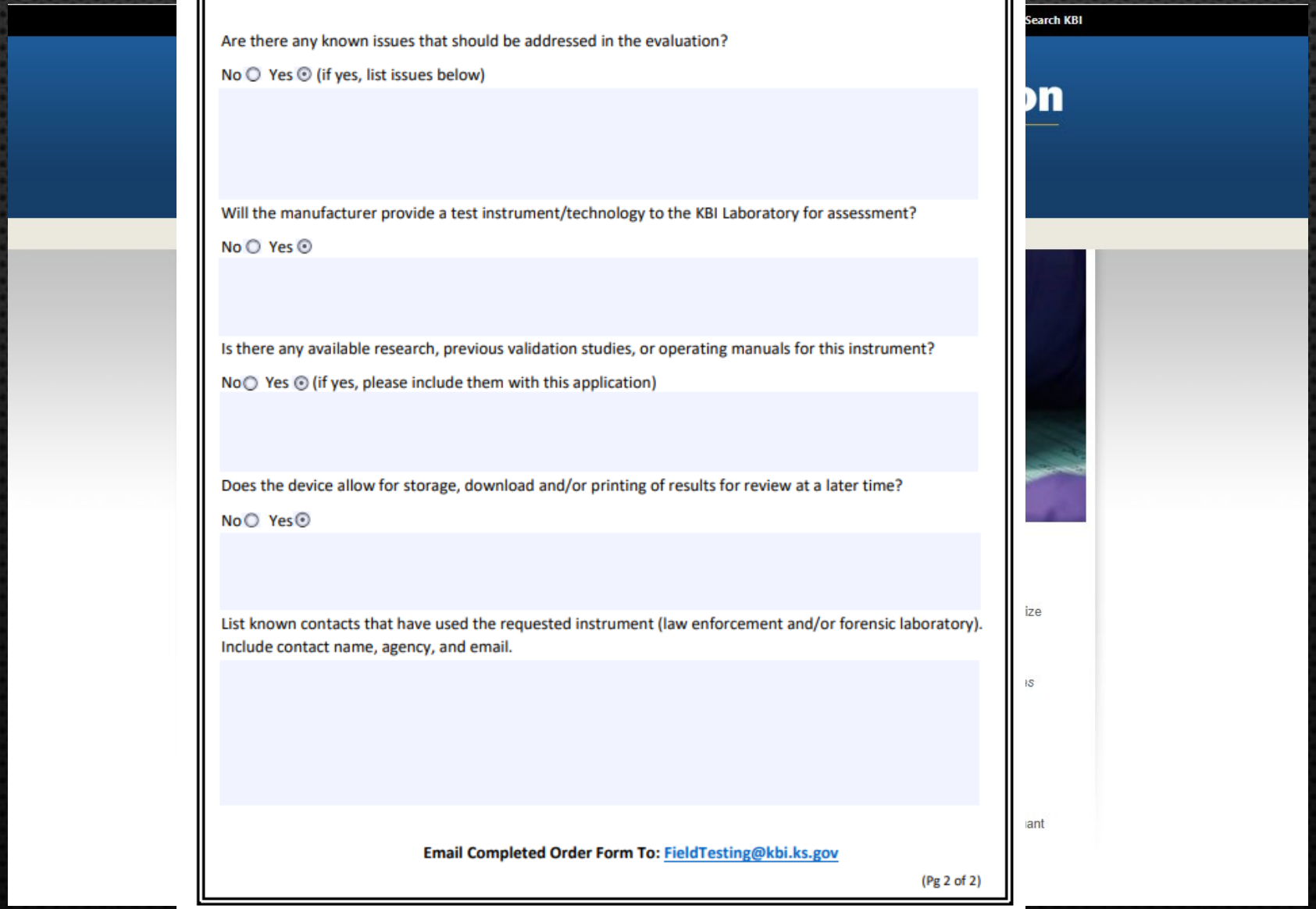
No ○ Yes ◉

List known contacts that have used the requested instrument (law enforcement and/or forensic laboratory). Include contact name, agency, and email.

Email Completed Order Form To: FieldTesting@kbi.ks.gov

(Pg 2 of 2)

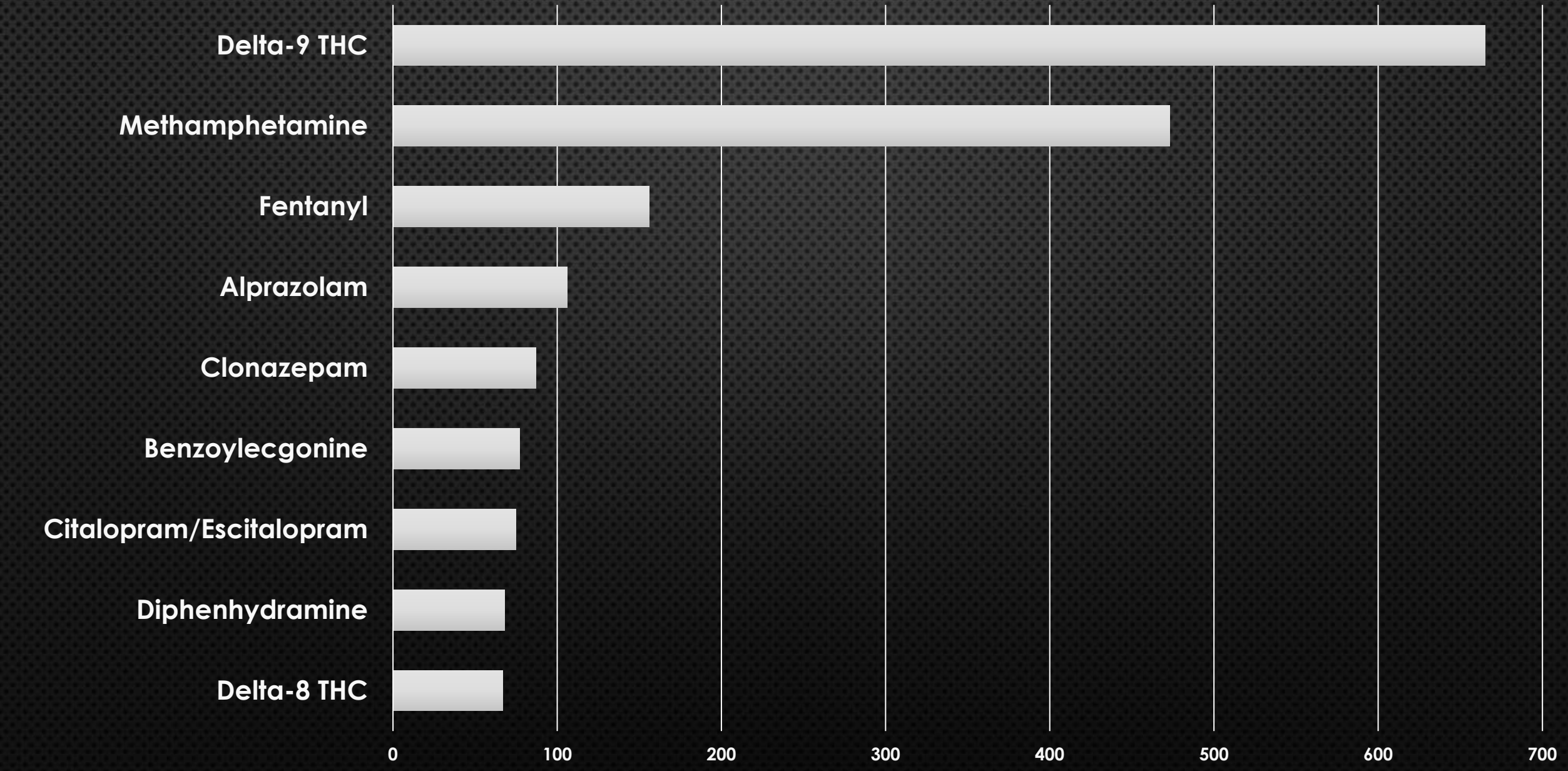
Published January 2024



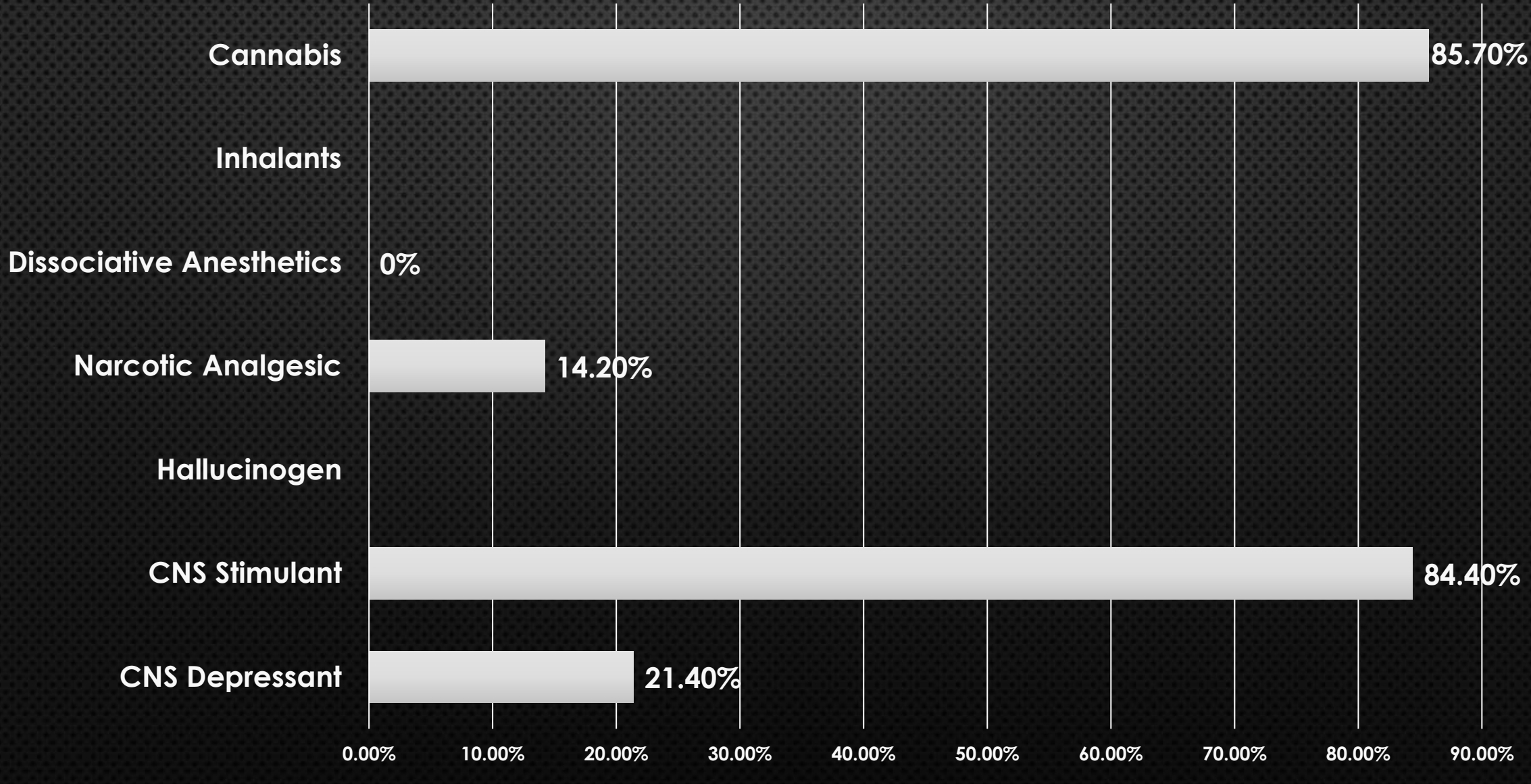
KANSAS ORAL FLUID ADVISORY COMMITTEE

- <u>MISSION STATEMENT</u>: THE MISSION OF THE KANSAS ORAL FLUID ADVISORY COMMITTEE (KOFAC) IS TO BRING STAKEHOLDERS FROM THE LAW ENFORCEMENT, FORENSIC SCIENCE, PROSECUTION, DEFENSE, AND TRANSPORTATION SAFETY COMMUNITIES TOGETHER FOR THE PURPOSE OF IMPROVING HIGHWAY SAFETY IN KANSAS COMBATING DRUG IMPAIRED DRIVING. THE COMMITTEE SEEKS TO ENHANCE THE ORAL FLUID TESTING PROGRAM THROUGH IMPROVEMENT IN TESTING, DATA COLLECTION, AND INFORMATION SHARING.

KBI Toxicology 2023 Blood Drug Statistics



DRE Opinion Confirmed by SoToxa by Percentage (Preliminary Data)



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SPECIAL THANK YOU TO:
LIEUTENANT MATTHEW PAYNE (KHP)
JARROD BECHARD
KATELYN HARVEY
PATRICK PORUBSKY

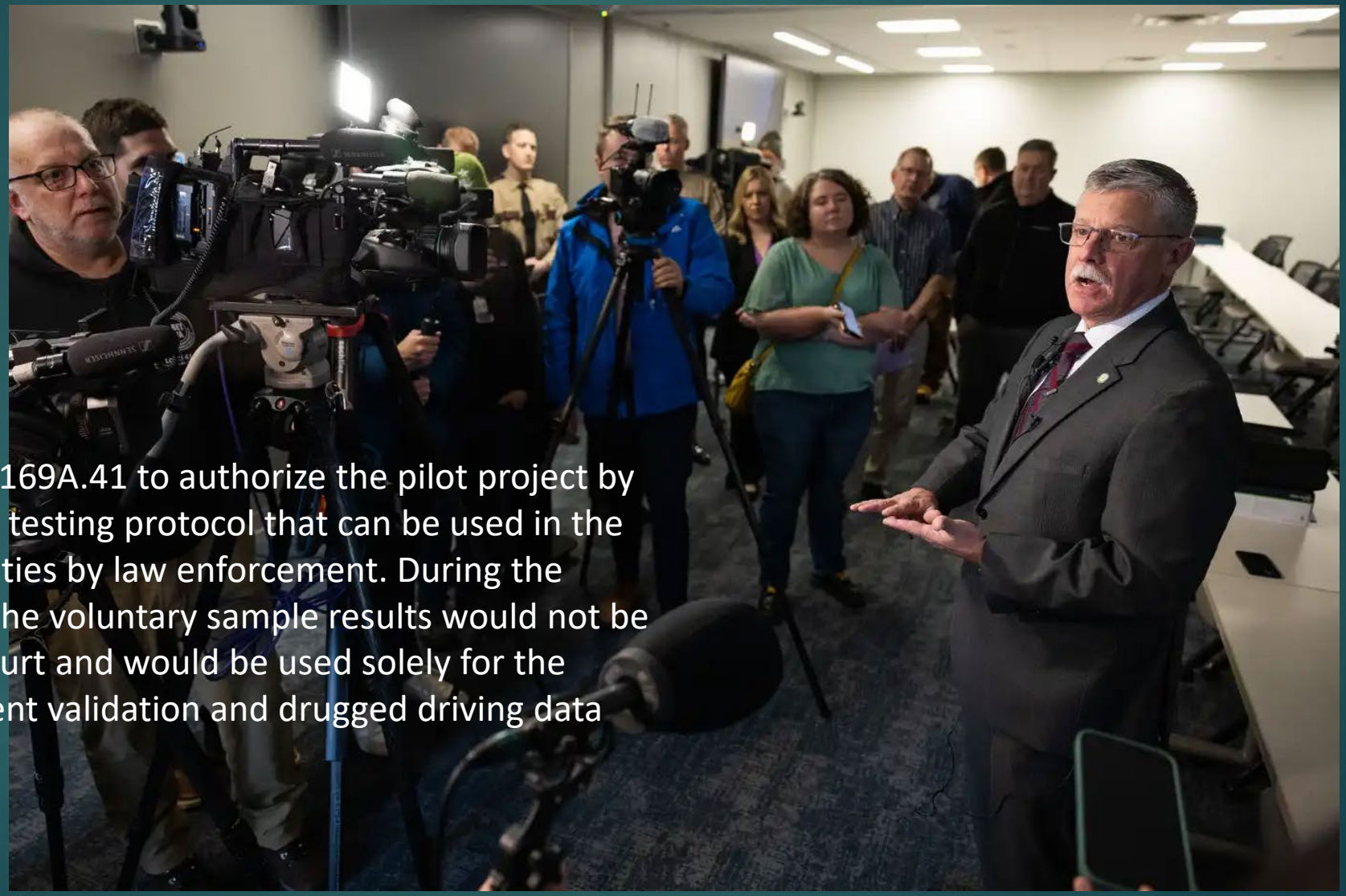
Minnesota's Oral Fluid Pilot Program

MICHAEL HANSON

GOVERNOR'S REPRESENTATIVE & DIRECTOR

MINNESOTA OFFICE OF TRAFFIC SAFETY

Amend Minn. Stat. 169A.41 to authorize the pilot project by adding an Oral Fluid testing protocol that can be used in the normal course of duties by law enforcement. During the assessment phase, the voluntary sample results would not be admissible in any court and would be used solely for the purpose of instrument validation and drugged driving data collection.

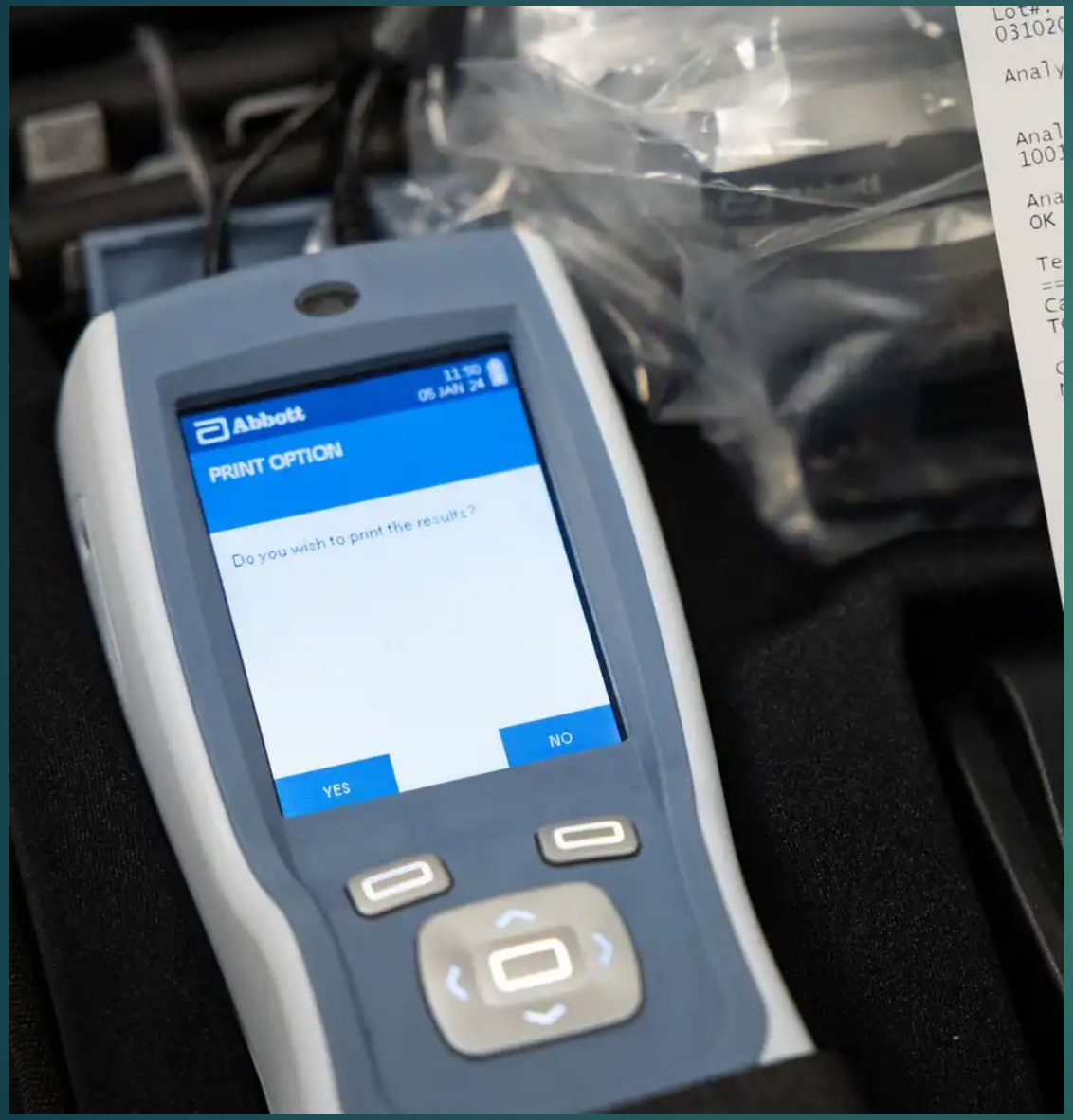


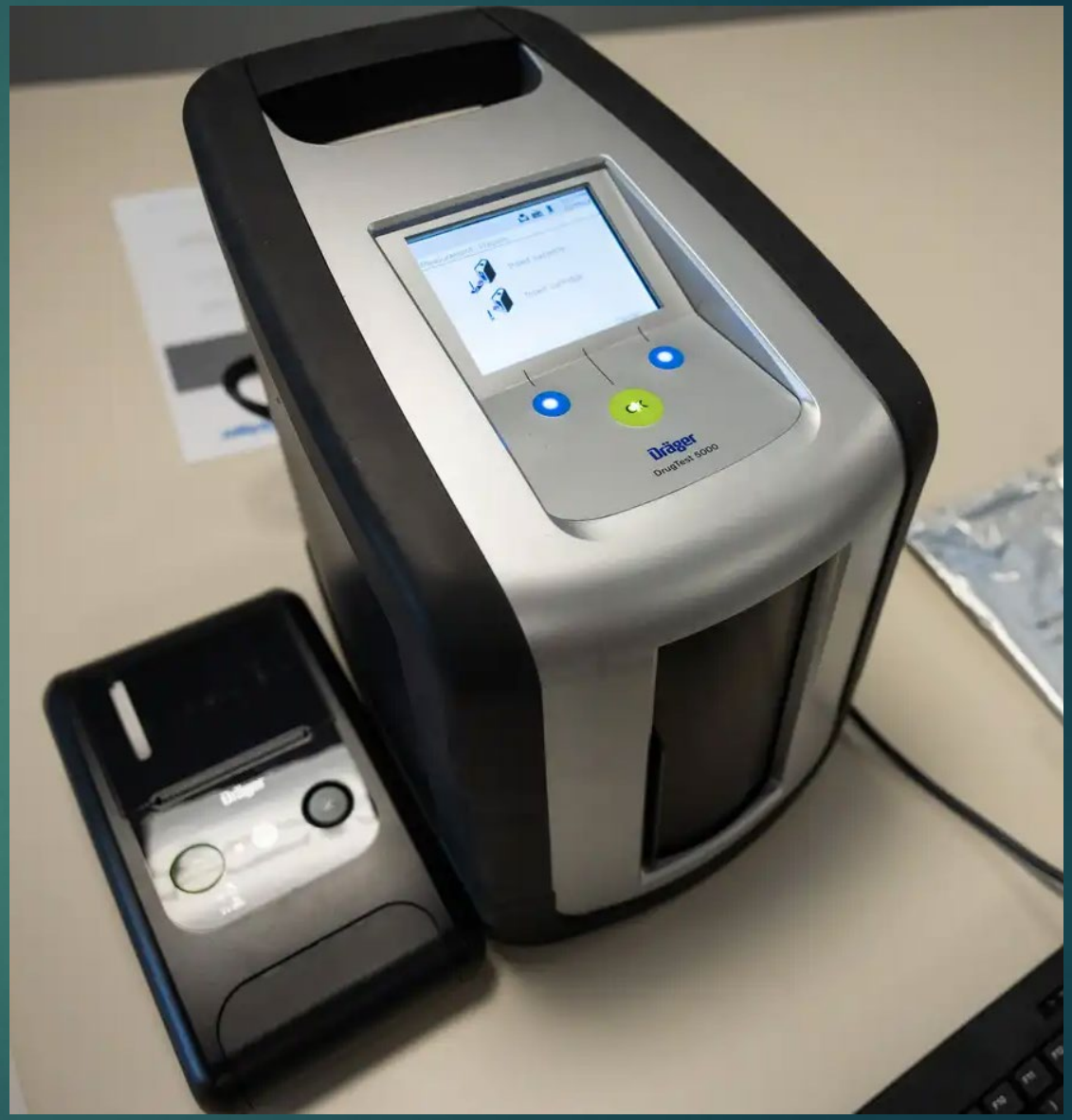
Pilot Goal

- To test and certify oral fluid roadside testing instruments that can assist law enforcement in determining impairment by substances other than alcohol.

- Once certified, these devices could be used in the same way that the currently authorized preliminary breath testing instruments are used to determine alcohol impairment.

https://www.cbsnews.com/minnesota/news/roadside-drug-test-pilot-program-is-seeing-high-participation-so-far-state-officials-say/


Abbott
11:50
05 JAN 24
PRINT OPTION
Do you wish to print the results?
YES
NO


Dräger
Drugtest 5000

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