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TRANSPORTATION RESEARCH BOARD

Understanding Polydrug Use and Its Role in Drug-Impaired Driving

Monday, July 1, 2019
2:00-3:30 PM ET

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

Purpose

Discuss recent findings on polydrug use in the general population and among drivers arrested for driving under the influence

Learning Objectives

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

- Discuss the different ways that drugs may interact to impair driving performance
- Describe national drug use trends, including polydrug use
- Determine how standard toxicological practices in many jurisdictions may underestimate drugs used
- Identify how law enforcement officers may assess drug use through the drug evaluation and classification system or through oral fluid testing

Polydrug Use

Regulated and Non-Regulated Testing

Presented by

Ron R. Flegel, B.S., MT(ASCP), MS. , Director

Division of Workplace Programs

Center for Substance Abuse Prevention

Substance Abuse and Mental Health Services Administration

Objectives

- Discuss Federal Drug Free Workplace Program
- Review poly drug use data from the Federal Drug Free Workplace Program
- Review National Polydrug Use Data
- Dangerous Drug Combinations
- Michigan Oral Fluid Pilot Program: DUID

Drug Free Workplace Programs (DFWP)

Governing Authorities

- Executive Order 12564
- Public Law 100-71
- Mandatory Guidelines

Guidance Documents

- Model Plan for a Comprehensive Drug-Free Workplace Program
- 2013 Guidance for Selection of Testing Designated Positions

Executive Order 12564

Directed Agency Heads to develop a plan to include:

"*The mark of a successful drug-free workplace program also depends on how well the [Agency] can inform its employees of the hazards of drug use, and on how much assistance it can provide drug users.*"

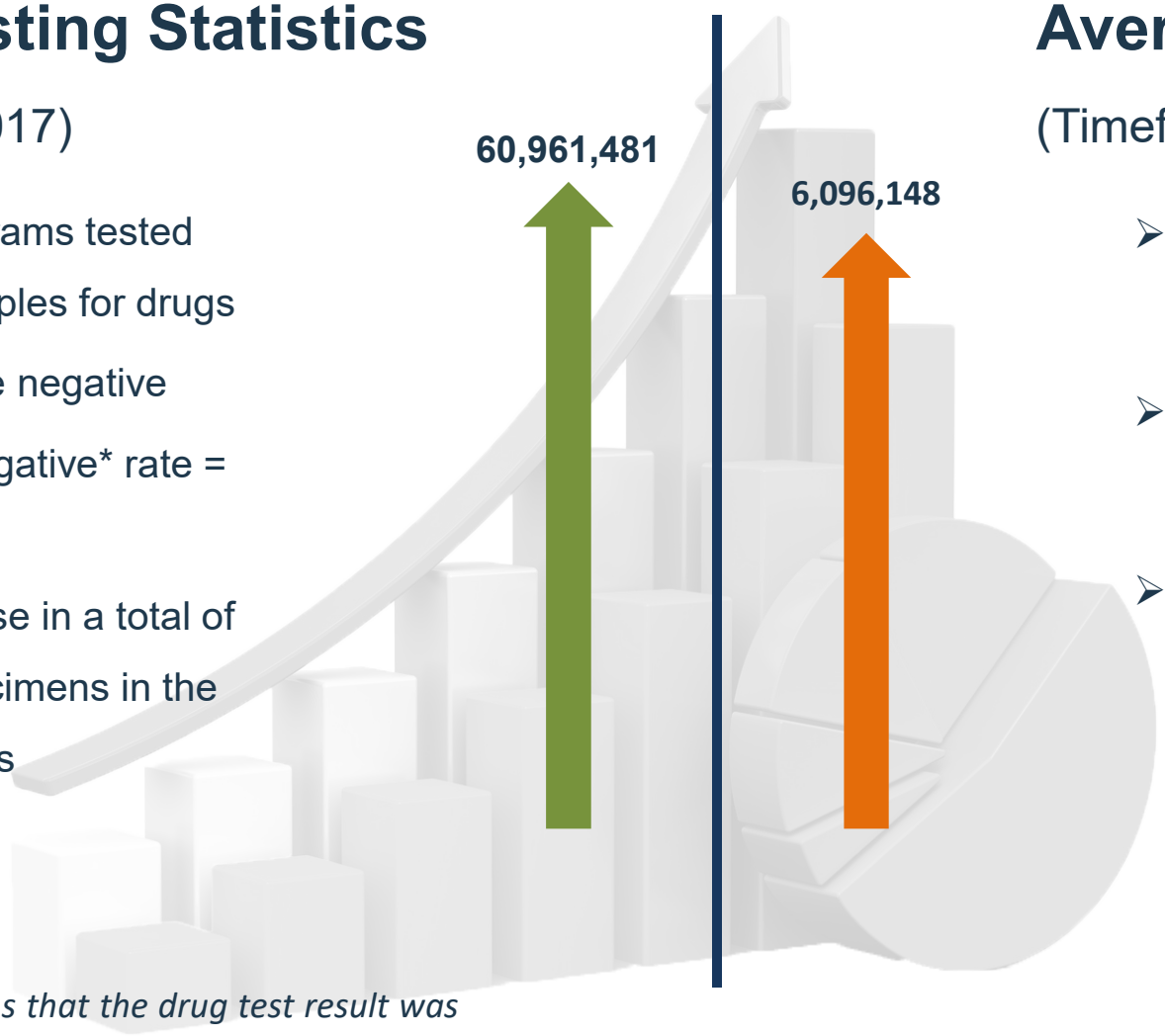
- Policies/procedures for a drug free workplace
- Employee Assistance Program
- Supervisory Training
- Employee Training
- Self Referrals to Treatment
- Drug Testing Program – Safety Sensitive Positions

DFWP Statistical Impact

Total Drug Testing Statistics

(Timeframe 2008-2017)

- Regulated Programs tested 60,961,481 samples for drugs
- 59,772,750 were negative
- Average non-negative* rate = 1.944%
- Deterred drug use in a total of 59,772,750 specimens in the regulated sectors



Average Per Year

(Timeframe 2008-2017)

- Average specimens per year = 6,096,148
- Deterred drug use for an average of 5,977,638 specimens per year
- Prevention (DFWP) deterred 98.056% of donors submitting specimens for testing from using drugs

**A non-negative result means that the drug test result was either positive, invalid, adulterated or substituted.*

Polydrug Use

- Polydrug use (or polysubstance use) is the mixing or taking more than one type of drug, at the same time or at different times.
- It can lead to increased probability of overdose, mental health problems, risky behavior, and accidents.
- It can include alcohol, illegal drugs, prescription drugs, over-the-counter medicines, and other substances such as petrol, paint and inhalants.
- Effects of polydrug use depends varies from person to person and depends on which drugs are mixed together; purity/amount of drugs; frequency of use and how the drug(s) are used.

Polydrug Use (Cont.)

- In 2016, approximately 80% of synthetic opioid–related overdose deaths involved another drug/alcohol including opioids, heroin, cocaine, prescription opioids, benzodiazepines, alcohol, psychostimulants, and antidepressants.
- In 2015, % cocaine-related overdose deaths involving any opioid > from 29.4% in 2000 to 63.0% in 2015, with heroin or synthetic opioids contributing > 81% of these deaths.
- In 2013, most heroin users also used 1 – 3 other drugs.

https://www.cdc.gov/drugoverdose/data/otherdrugs.html

Division Of Workplace Programs Polydrug Use Summary

Drug	6AM	BZE	THCA	MDMA	MDEA	MDA
6AM	639	108	87	0	0	0
BZE	108	3441	2419	33	2	1
THCA	87	2419	6036	43	42	1
MDMA	0	33	43	75	71	4
AMP	111	593	2420	14	12	3
OPI	583	220	295	2	2	0
HYC	133	229	618	2	1	1
OXYC	45	260	700	1	1	0

Division Of Workplace Programs Polydrug Use Summary (Cont.)

Drug	AMPS	AMP	MAMP	OPI	COD
6AM	111	14	97	583	1
BZE	593	175	418	220	36
THCA	2420	765	1655	295	83
MDMA	14	9	5	2	0
AMP	5200	2723	2477	431	125
OPI	431	236	195	3645	506
HYC	1277	1023	254	2143	208
OXYC	962	773	189	1064	87

Division Of Workplace Programs Polydrug Use Summary (Cont.)

Drug	MOR	HYDROS	HYC	HYM	OXY
6AM	363	133	23	110	45
BZE	150	229	176	53	260
THCA	154	618	531	87	700
MDMA	2	2	1	1	1
AMP	245	1277	1139	138	962
OPI	2403	2143	1019	1124	1064
HYC	1437	5885	4337	1548	2542
OXYC	809	2542	1936	606	4685

National Survey on Drug Use and Health (NSDUH)

- NSDUH is a comprehensive household interview survey of substance use, substance use disorders, mental health, and the receipt of treatment services for these disorders in the United States.
- NSDUH is collected face-to-face by field interviewers who read less sensitive questions to respondents and transition respondents to audio computer assisted self-interviewing for sensitive items.
- NSDUH covers the civilian, noninstitutionalized population, aged 12 or older:
  - Includes: Households, college dorms, homeless in shelters, civilians on military bases
  - Excludes: Active military, long-term hospital residents, prison populations, homeless not in shelters
- Sample includes all 50 states and DC
- Approximately 67,500 persons are interviewed annually
- Data collected from January to December

Mental and Substance Use Disorders in America

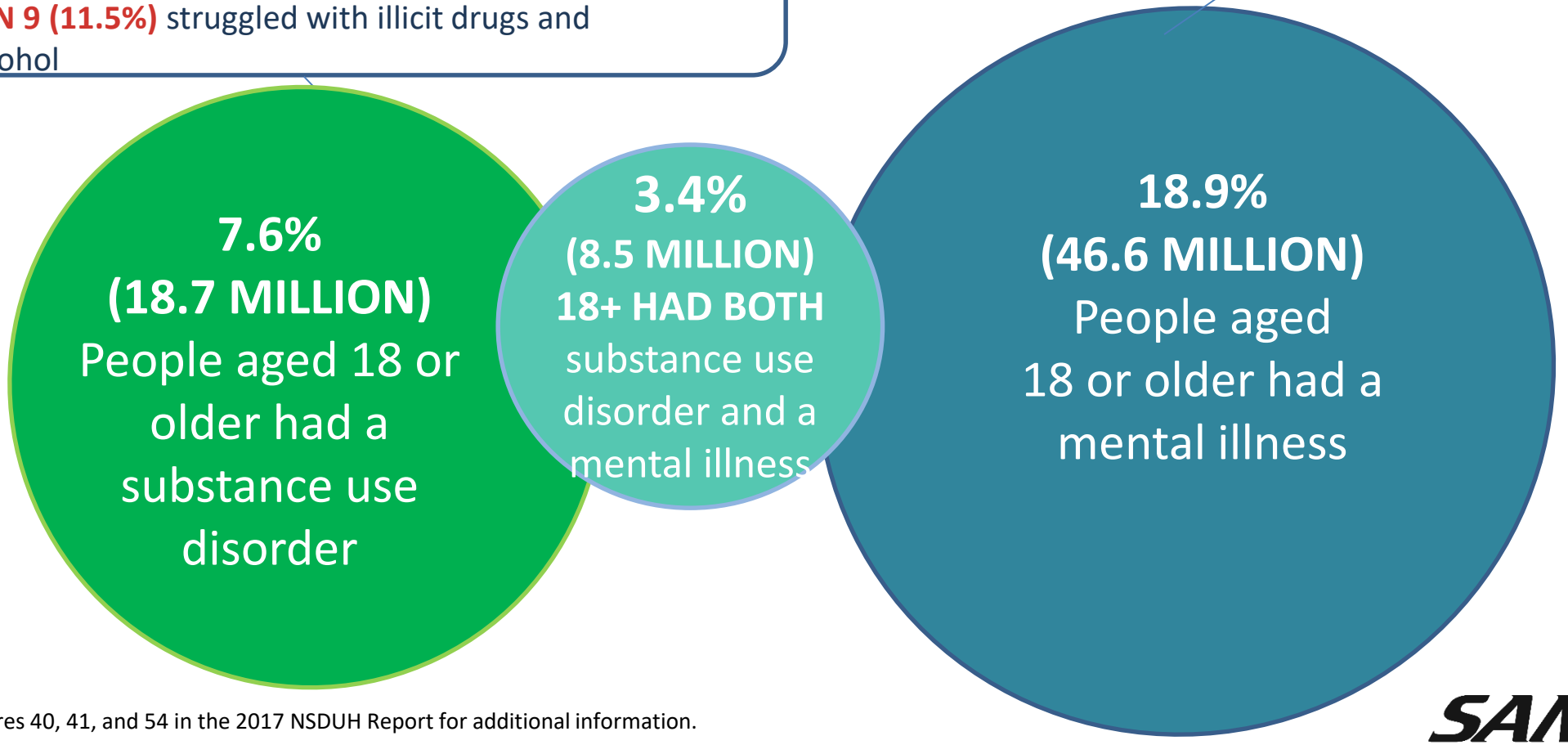
PAST YEAR, 2017, 18+

Among those with a substance use disorder:

- **3 IN 8 (36.4%)** struggled with illicit drugs
- **3 IN 4 (75.2%)** struggled with alcohol use
- **1 IN 9 (11.5%)** struggled with illicit drugs and alcohol

Among those with a mental illness:

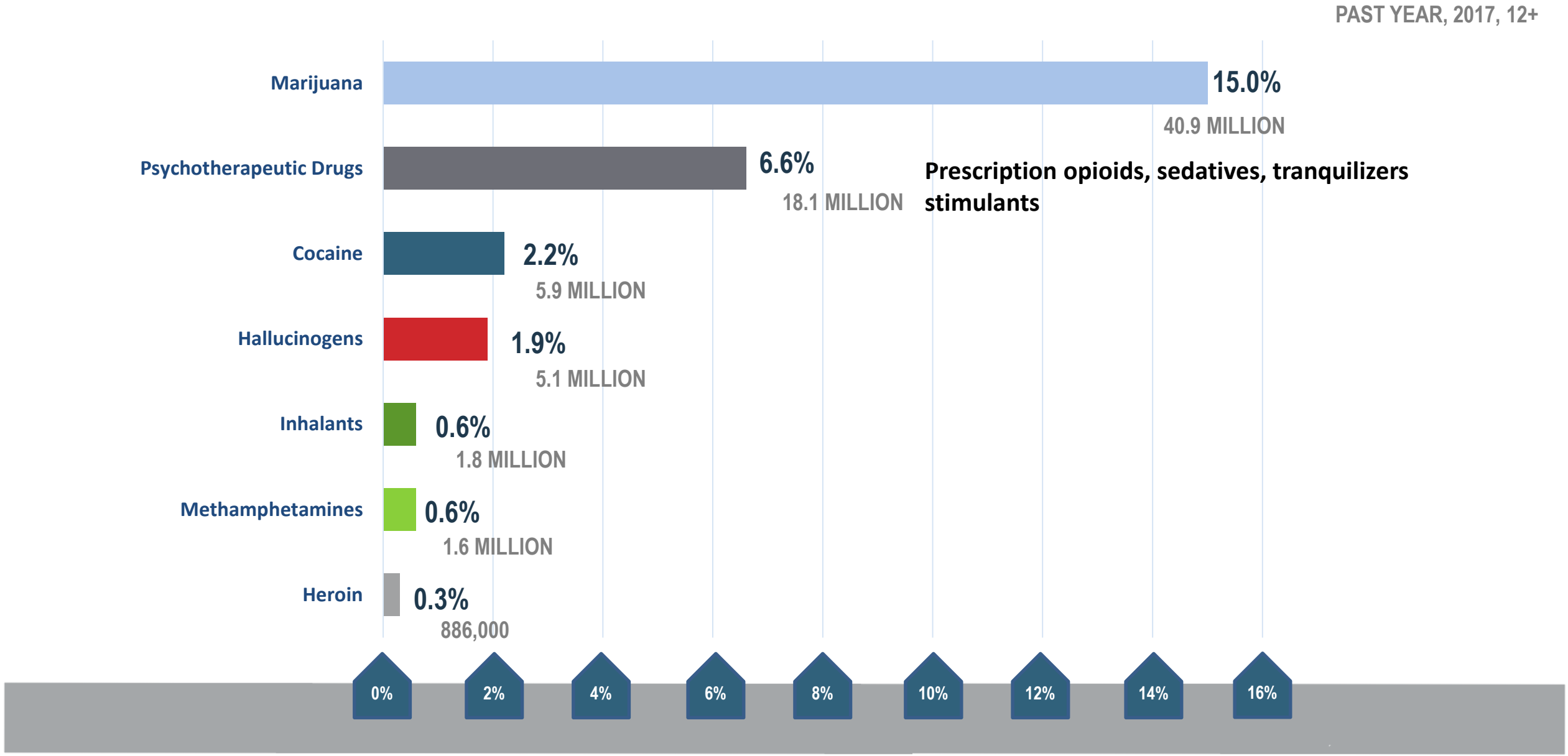
- **1 IN 4 (24.0%)** had a serious mental illness



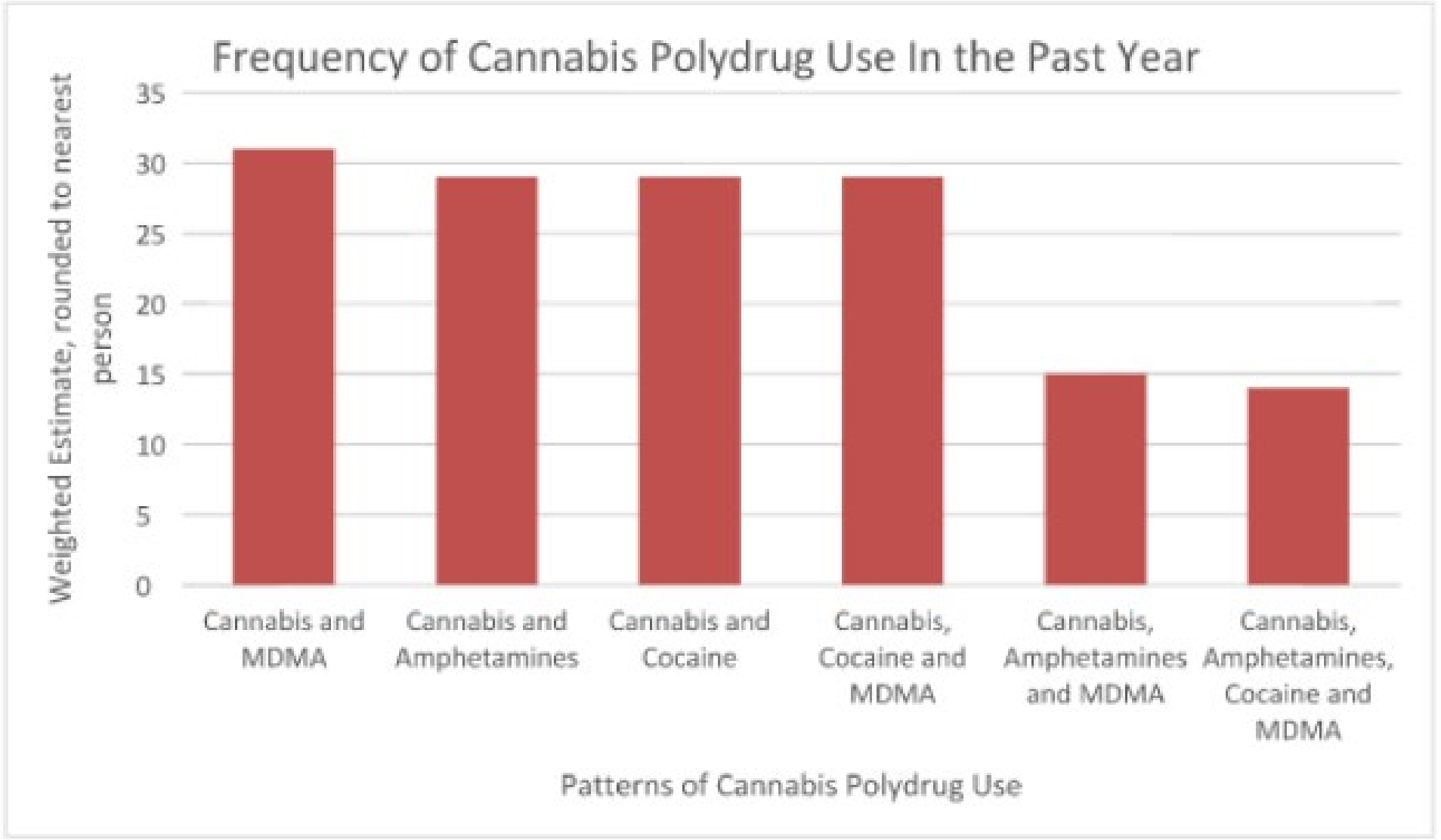
See figures 40, 41, and 54 in the 2017 NSDUH Report for additional information.

SAMHSA
Substance Abuse and Mental Health Services Administration

Illicit Drug Use Impacts Millions: Marijuana Most Widely Used Drug

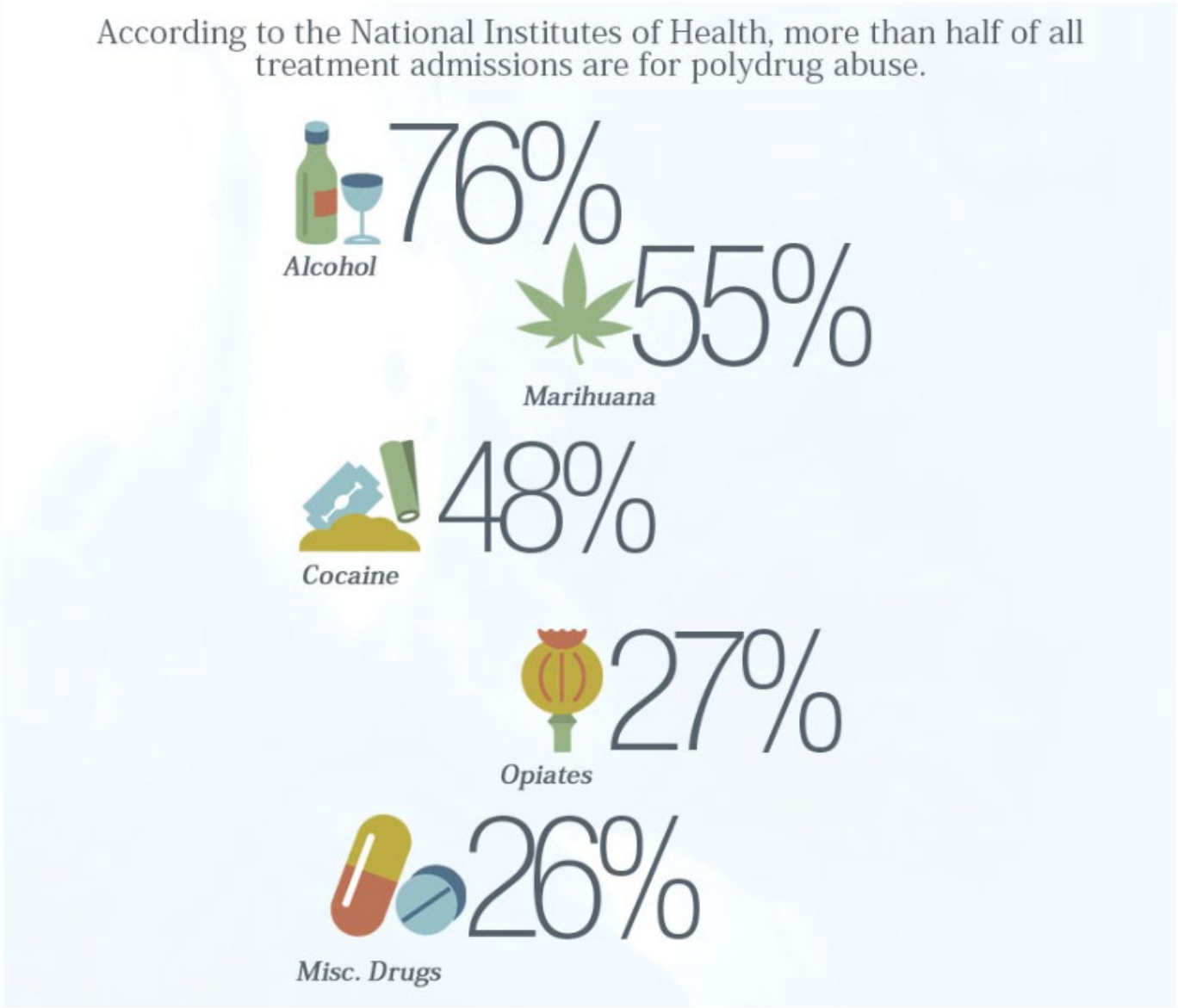


Cannabis Polydrug Use / Abuse



https://cpb-us-w2.wpmucdn.com/campuspress.yale.edu/dist/a/1215/files/2017/06/Ryan-1f5d8np.pdf

How Big Of A Problem Is Polydrug Abuse

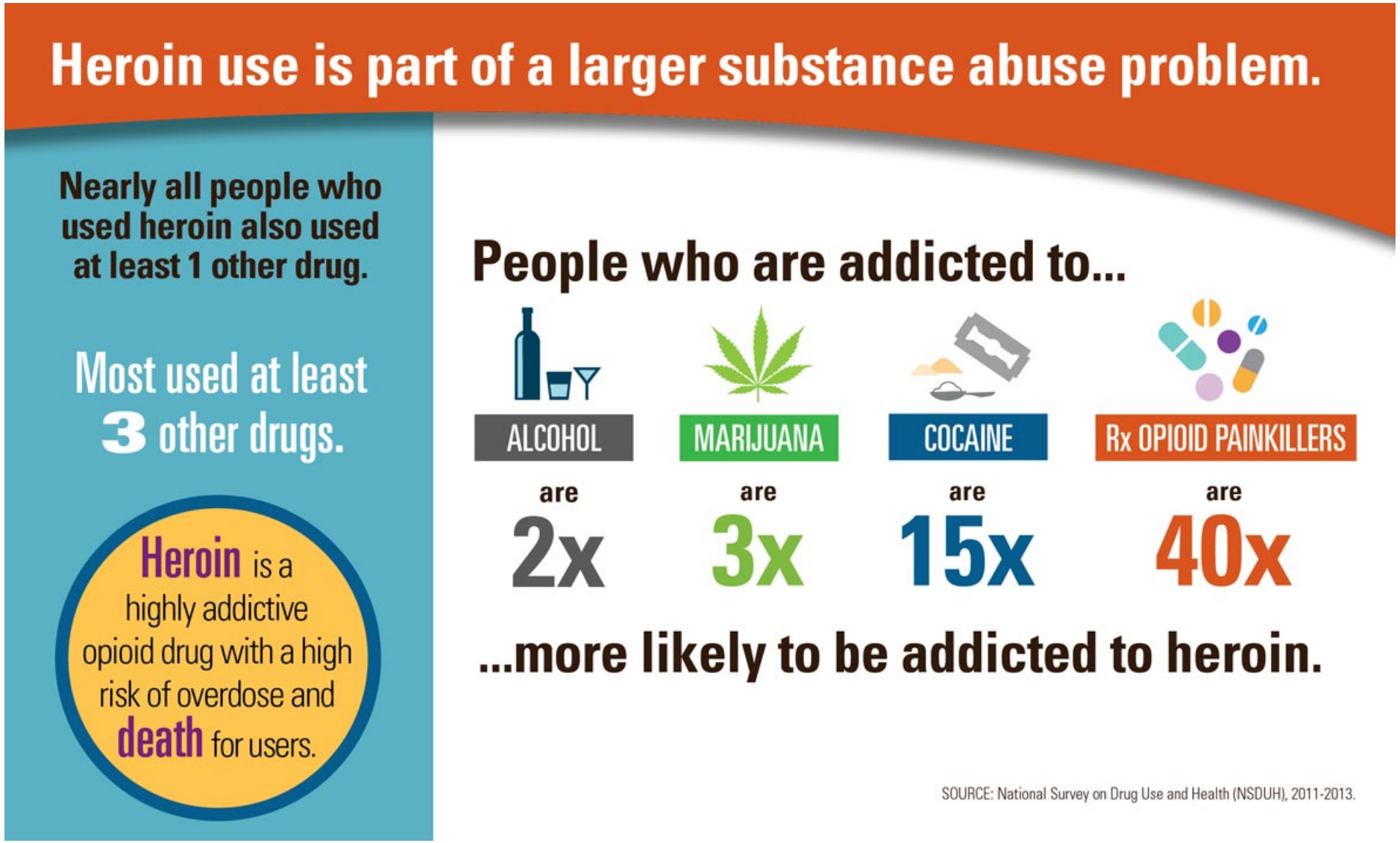


https://www.northpointwashington.com/blog/polydrug-abuse-need-know/

How Big Of A Problem Is Polydrug Abuse (Cont.)

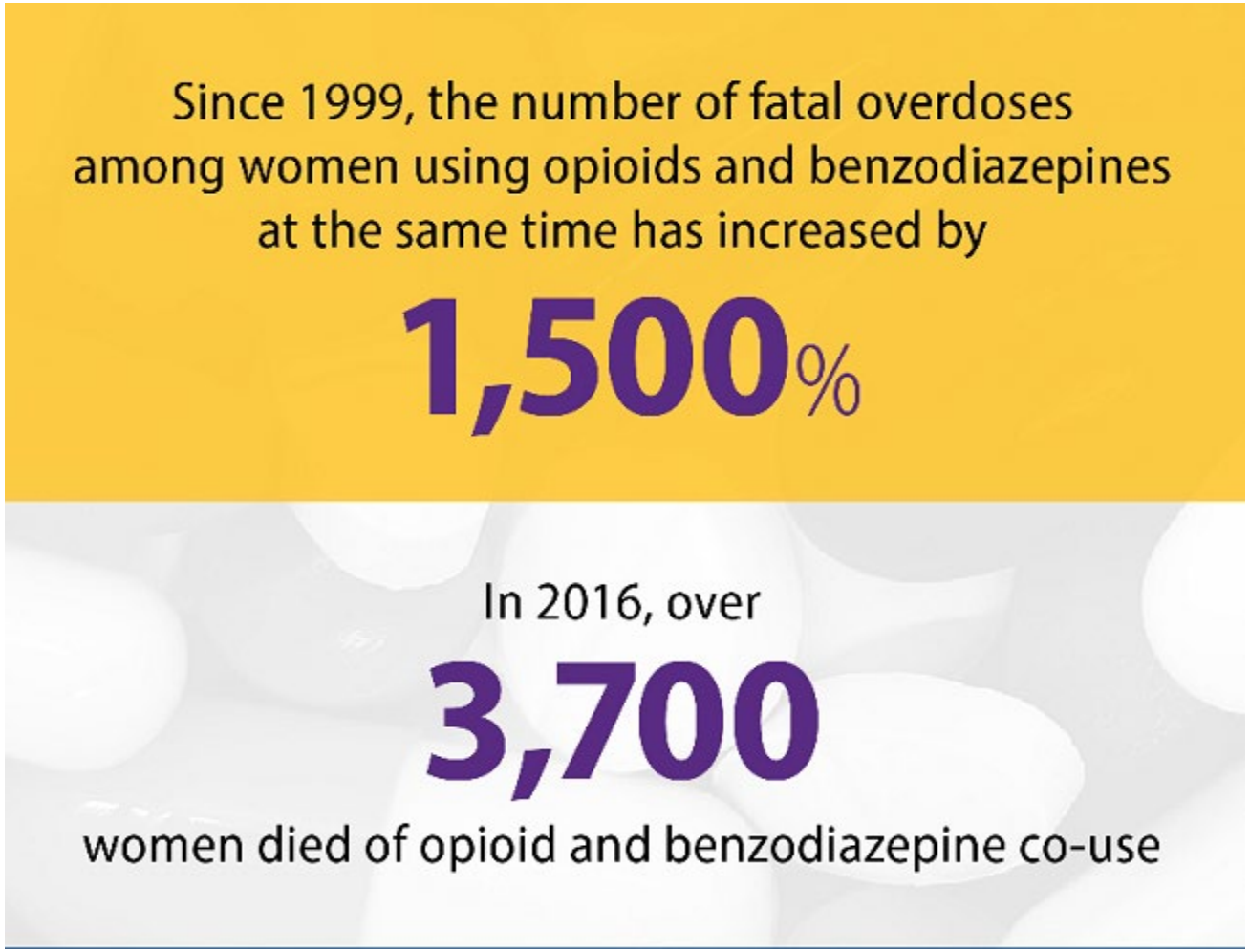
https://www.northpointwashington.com/blog/polydrug-abuse-need-know/

Polydrug Use (Cont.)



https://www.cdc.gov/vitalsigns/heroin/infographic.html#use

Women and Polydrug Fatal Overdoses



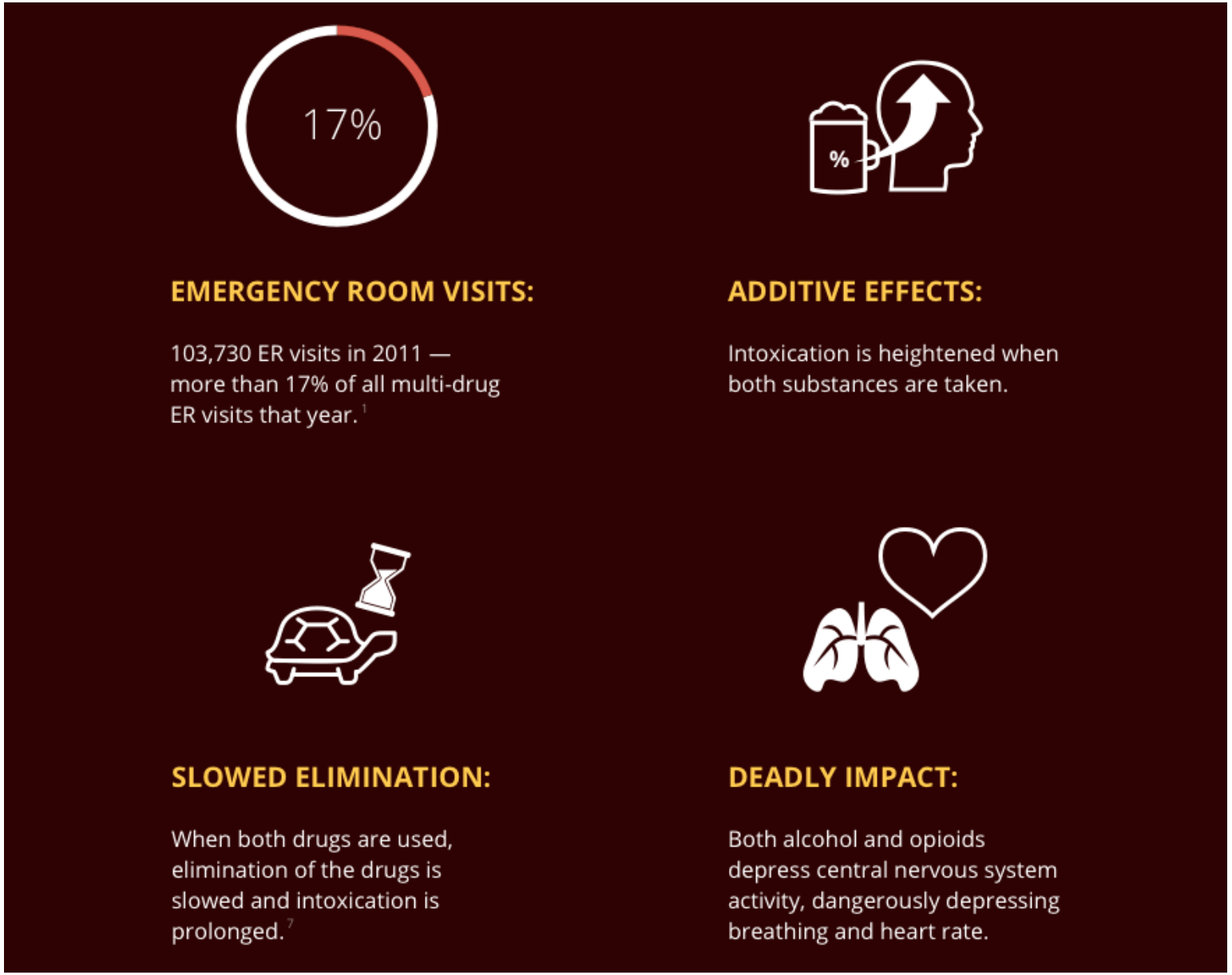
www.rti.org/opioids
For more information about data in this infographic, see https://www.drugabuse.gov/related-topics/trends-statistics/overdose-death-rates and https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5508143

Gender And Sexual Orientation Differences In Polydrug Use

	Total Sample		Women				Men				
			Lesbian & Bisexual		Heterosexual		Gay & Bisexual		Heterosexual		
Combined …[drug name].. with other drug(s)	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	**χ^2 (3)**
MDMA/ecstasy	304	86.6	73	83.0	69	84.1	76	85.4	86	93.5	5.30
Ketamine	147	71.4	30	65.2	33	66.0	43	75.4	41	77.4	2.95
GHB	47	54.7	5	38.5	6	37.5	23	67.6	13	56.5	5.62
Methamphetamine	112	66.3	30	66.7	23	74.2	37	62.7	22	64.7	1.25
Cocaine	324	85.7	78	81.3	81	84.4	81	84.4	84	93.3	6.11
LSD/acid	164	69.2	42	64.6	33	64.7	29	58.0	60	84.5	11.87

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2683356/

Dangerous Drugs Combinations (Alcohol & Opioids)



https://drugabuse.com/lethal-drug-combinations/most-dangerous/

Dangerous Drugs Combinations (Alcohol & Heroin)

Dangerous Drugs Combinations (Alcohol & Cocaine)

Oral Fluid Pilot Program (Michigan)

- In 2014, 10.1 million people 16 years of age and older reported driving under the influence of drugs within the past year in the United States (Veitenheimer & Wagner, 2017).

- Preliminary oral fluid drug screening on the roadside has many benefits. Studies have shown that drugs accumulate in the oral fluid by passive diffusion from the blood. Certain drugs tested in oral fluid are well correlated with positive results from the same drug when tested in the blood.

- Collecting oral fluid from a driver on the roadside can be easy, quick, and non-invasive. There is limited risk of adulteration with the oral fluid sample and the collection is painless. Oral fluid collection can occur at the scene, close to the time the driver was operating a vehicle. The oral fluid test instrument provides the investigating police officer positive or negative test results, within five minutes, on recent drug intake.

https://www.michigan.gov/documents/msp/Oral_Fluid_Report_646833_7.pdf

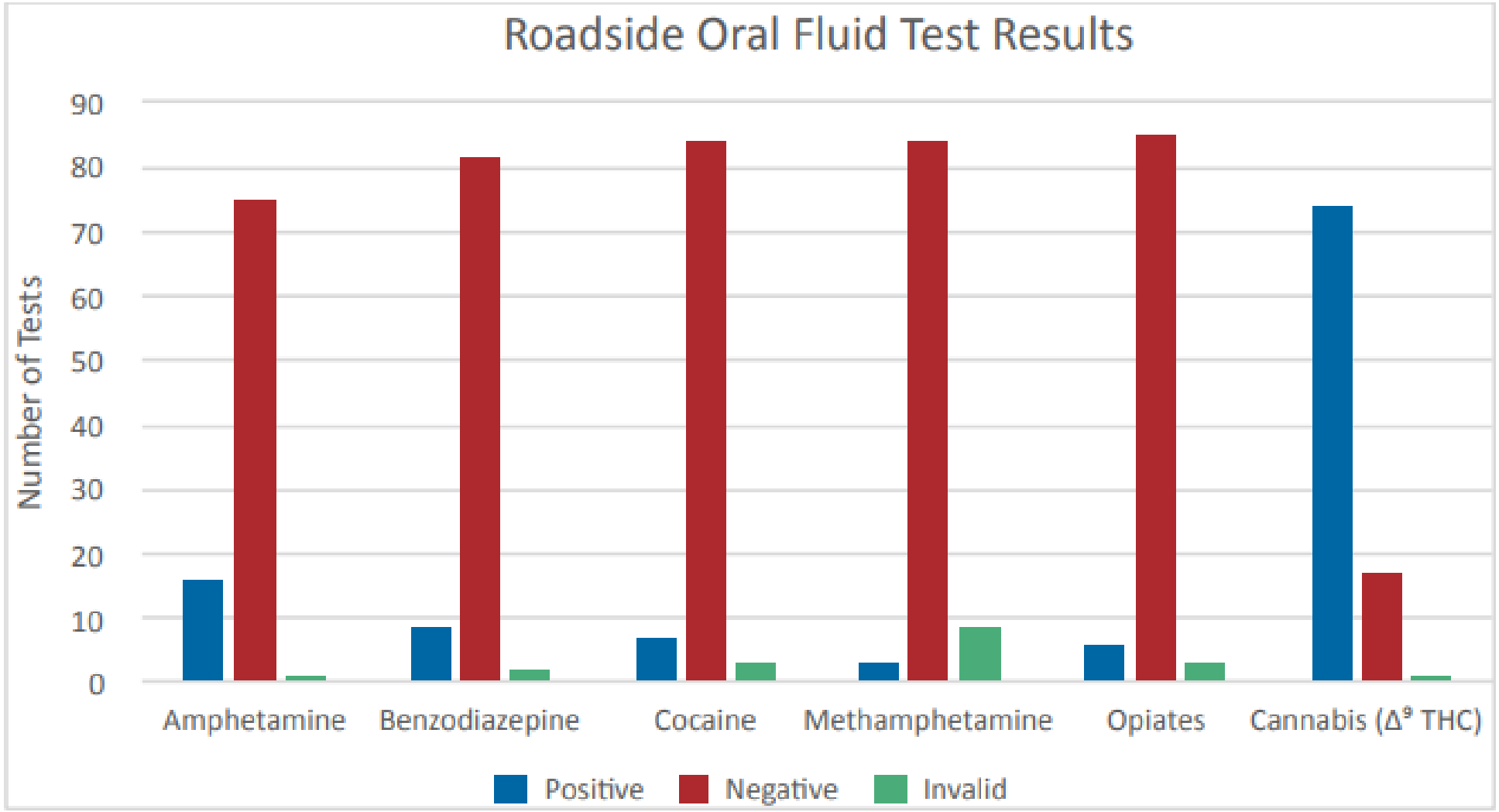
Oral Fluid Pilot Program (Michigan)

- Blood is considered the “gold standard” for drug analysis in driving under the influence of drugs (DUID) cases. However, there are some drawbacks to utilizing blood for evidentiary purposes. Obtaining a blood sample from a driver requires transporting a driver to a hospital to have blood drawn by a medical professional, which can take several hours.

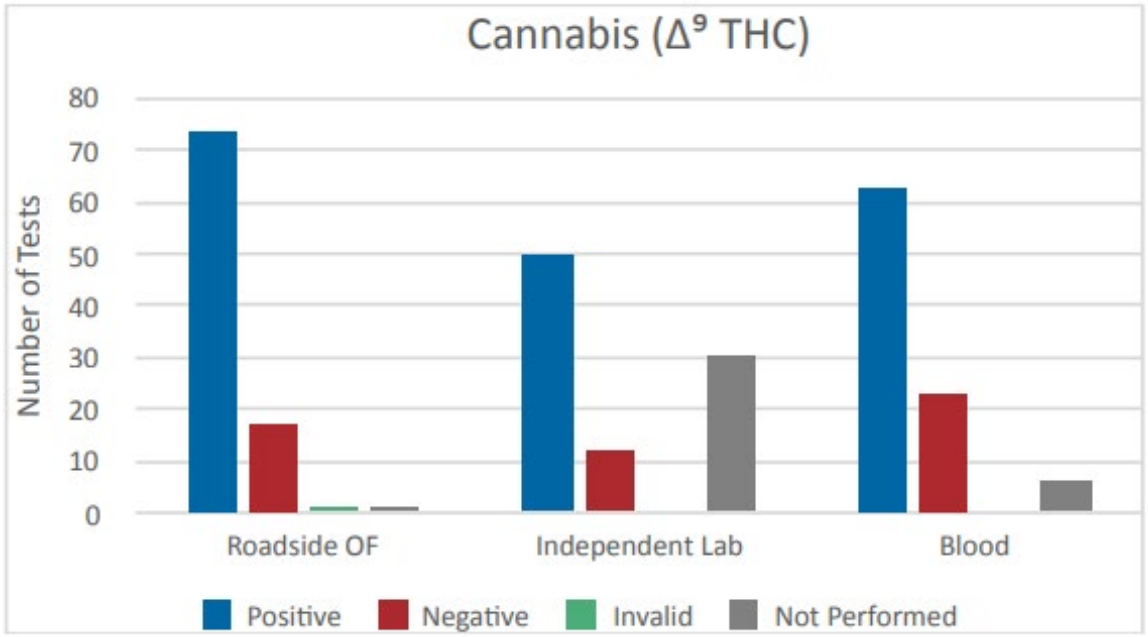
- Some drugs, such as Δ^9-tetrahydrocannabinol (THC) the most psychoactive of the principal constituents of marijuana, metabolize quickly within the body. The loss of THC in-vitro must be taken into consideration when analysis of cannabinoid positive blood samples is not immediate.

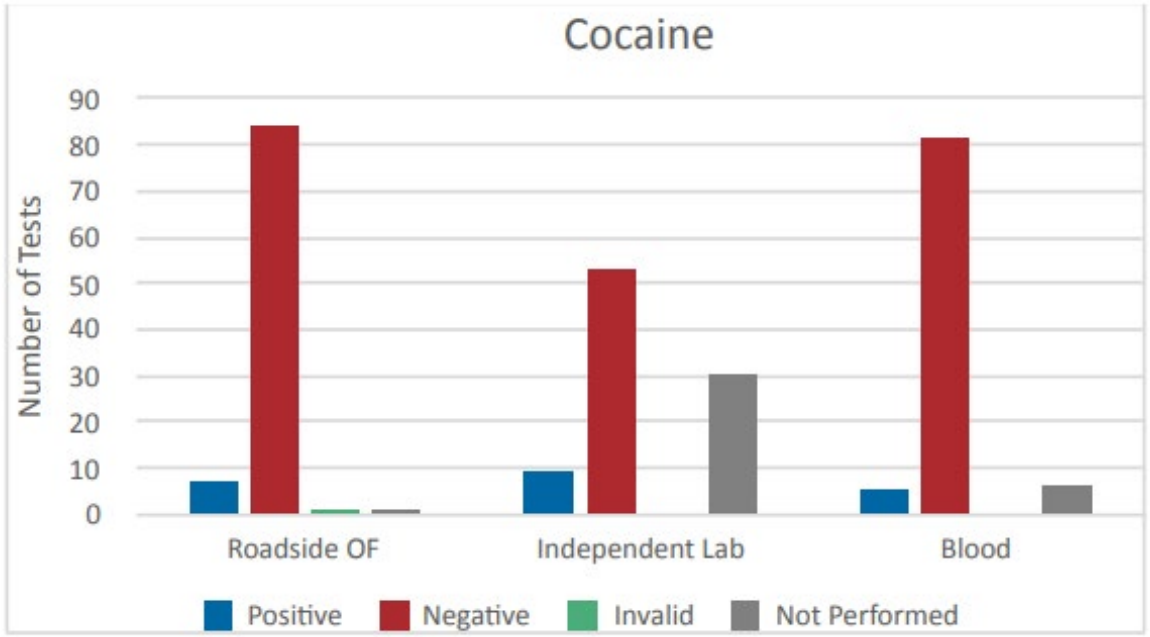
- Utilizing oral fluid for preliminary drug screening has the potential to expedite the drug-impaired driving investigation process. Since oral fluid has a short drug detection window, it makes an ideal specimen to collect. Oral fluid is collected very close to the time the driver was operating a vehicle, lending additional credibility to the test results and drivers may be more inclined to consent to a non-invasive oral fluid swab versus a blood draw.

Comparison Between Tests In Michigan

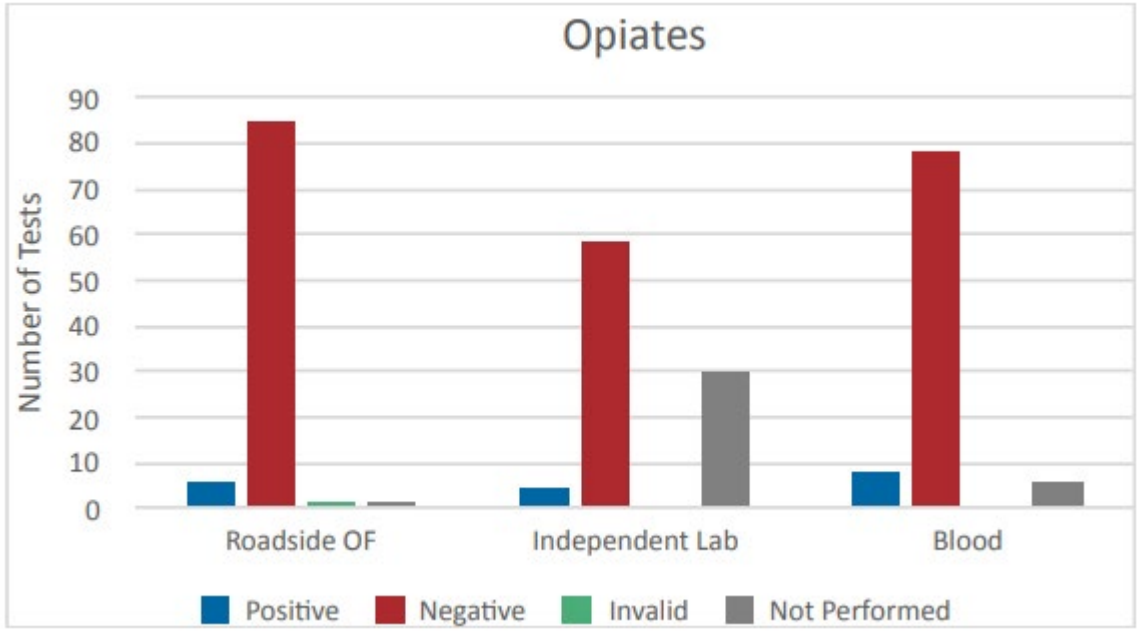


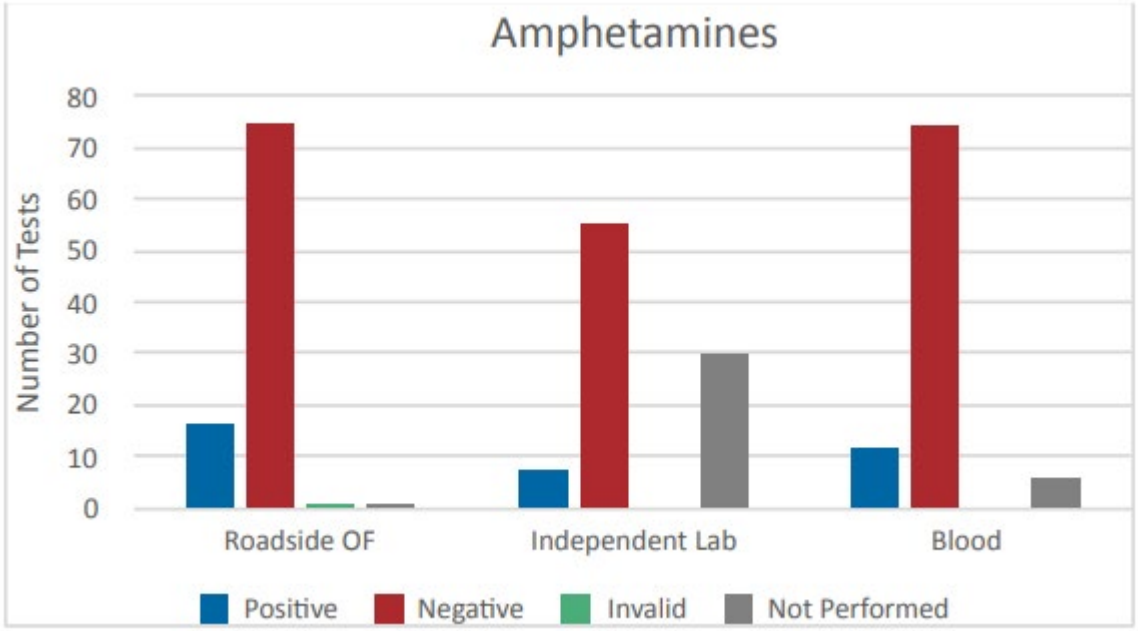
Comparison Between Tests In Michigan (Cont.)





Comparison Between Tests In Michigan (Cont.)





Thank You
Division of Workplace Programs

Please Visit our Website
https://www.samhsa.gov/workplace

Drug and Poly-drug Use Among Drivers: A Toxicology Perspective

JENNIFER HARMON
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Current Toxicology Practices

Antemortem (DUI/DWI)

- Breath
  - Exclusive in some state statutes
  - Tested by roadside or stationary device at jail/agency
- Blood
  - Collected by hospitals
  - Contracted phlebotomists
  - Specially trained law enforcement/EMTs
  - Tested by public crime labs or fee-for-service private labs
- Oral Fluid
  - Emerging matrix
  - Roadside and in laboratory testing
  - Very few labs have current testing capabilities

Postmortem (Vehicular Deaths)

- Blood and, or Vitreous Humor
  - Scope of testing based on state statute if one exists
  - Scope of testing determined by Coroner or Medical Examiner
  - Many states use private labs to conduct testing; fee-for-service

Current Toxicology Practices

Antemortem (DUI/DWI)

- Breath
  - Tests for Ethanol (Alcohol) exclusively
- Blood
  - Tests for Ethanol (Alcohol) due to Per Se Laws (0.08% BAC)
  - Drug testing by request or if below Per Se
    - Many labs have “Stop Limit Testing” due to lack of resources
    - ~25% of DUI cases are below Per Se limit
  - ~75% of cases are NOT tested for drugs

Postmortem (Vehicular Deaths)

- Coroner/ME role is to determine manner and mode of death, not whether drugs were involved in the traffic collision.
- Testing is jurisdictionally dependent primarily due to resources.

Orange County Testing & Statistics

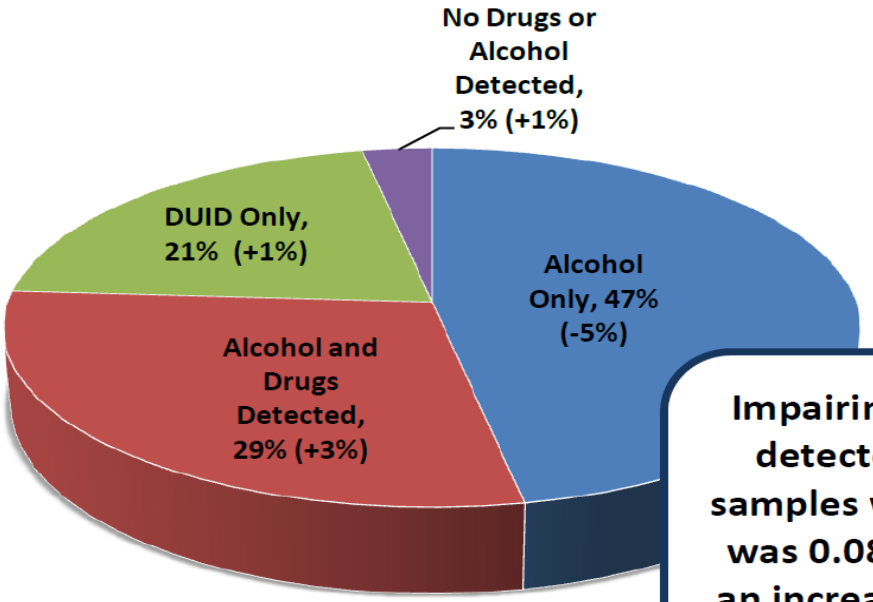
- County Population 3.2 million
  - 6th most populous county in the U.S.
  - 3rd most populous in California
- Started testing every DUI blood sample for drugs since August 2017 regardless of BAC
  - Since August 2018, tests every DUI blood sample for 325+ drugs & determines drug blood concentration when applicable
  - Provides blood and breath alcohol testing by public crime lab free of charge by mandated county MOU
  - Contracted phlebotomists for more than 30+ years, every LEA uses a single contractor
- Tests every fatally-injured driver/operator for alcohol & drugs for more than 15 years
  - Testing determined by toxicologist and crime lab, not pathologists/coroner
  - State statute obligates testing for alcohol exclusively, suggests testing for amphetamine related derivatives and barbiturates; 25+ years since last statute update

Orange County Fatally-Injured Operators

Year	Case Count	THC	Cannabis Use	THC Only	Ethanol	At least one drug
2016 operators tested (81%)	101	21%	23%	5%	29%	*50%*
2017 operators tested (80%)	118	17%	18%	9%	32%	*56%*
2018 operators tested (76%)	99	25%	28%	11%	36%	*62%*

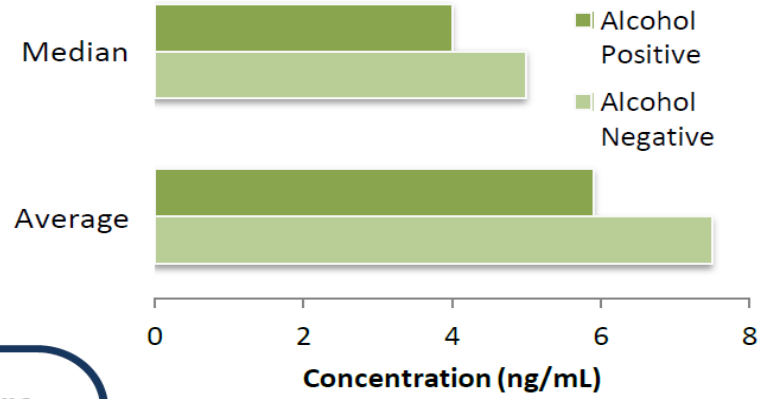
Orange County Arrested (DUI) Drivers

DUI/DUID

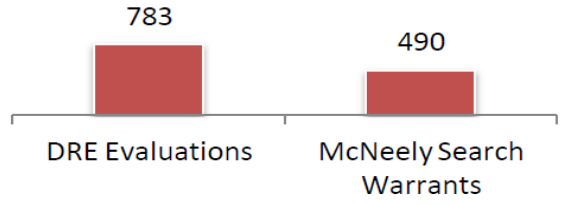


Impairing drugs were detected in 36% of samples where the BAC was 0.08% or greater, an increase of 5% from the previous year.

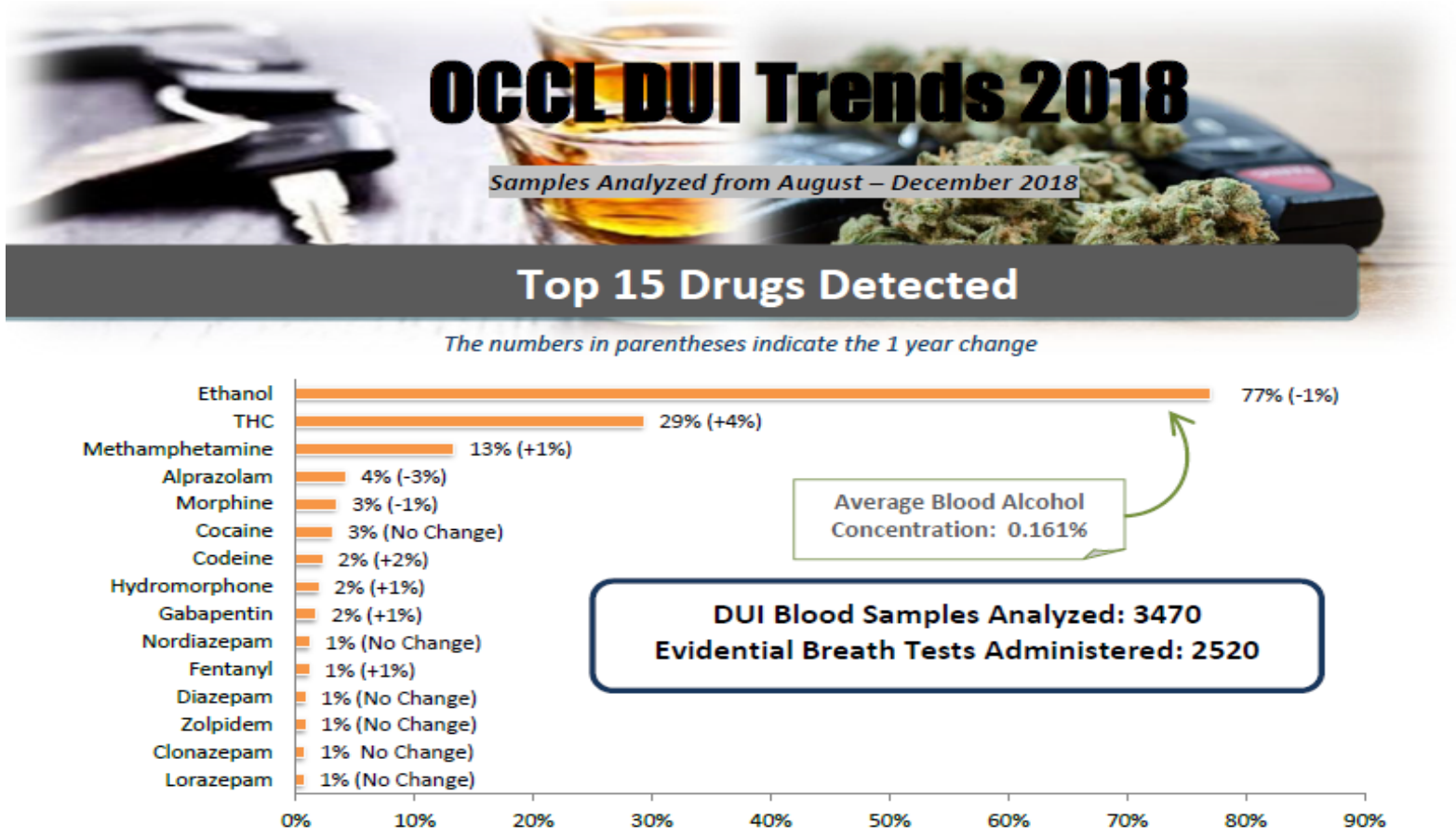
THC



DRE and McNeely



Orange County Arrested (DUI) Drivers



Why the Data Matters…

- Data used to make policy
- BAC stop level testing underestimates prevalence
  - Impacts quality treatment options and increases recidivism
  - Continued public safety impacts and normalization of drug use
- Goal of DUI enforcement is to prevent felony cases including vehicular homicide
- The data is needed to continue to ensure and improve the training tools used by law enforcement

Path Forward

- State and National efforts to Standardize Toxicology Testing
  - “Recommendations for Toxicological Investigation of Drug-Impaired Driving and Motor Vehicle Fatalities – 2017 Update” (Journal of Analytical Toxicology, 2018; 42:63-68)
  - Provide funding/resources for government labs to test all drivers (deceased or DUI) for drugs regardless of BAC and ensure scope of testing is consistent with emerging and current trends.
- Evaluate state statutes related to chemical testing of fatally-injured drivers/operators
  - Are drugs included in the statutes?

Understanding Polydrug Use and Its Role in Drug-Impaired Driving

THE DRUG EVALUATION AND CLASSIFICATION (DEC) PROGRAM APPROACH TO IDENTIFYING POLYDRUG IMPAIRMENT

CHUCK HAYES, INTERNATIONAL ASSOCIATION OF CHIEFS OF POLICE DEC PROGRAM WESTERN REGION PROJECT MANAGER

The Impaired Driving Landscape Is Changing

- ✓ Drugged driving incidents increasing
- ✓ Drugs, other than alcohol, more prevalent in DWI and MV crashes
- ✓ Poly-drug impairment a growing concern
- ✓ Increasing need for officers skilled in drug impairment identification

Bend, OR Driver Kills Cyclist – 9 Drugs Detected in Driver's Blood

- December 2017 crash
- Driver crossed roadway, struck and killed bicyclist
- *Suspect driver examined by DRE at roadside*, impairment suspected
- Blood test confirmed presence of 9 drugs plus 2 drug metabolites:
  Hydrocodone, Carisoprodol, Meprobamate, Clonazepam, Alprazolam, Cyclobenzaprine, Amitriptyline, Trazadone, and Paroxetine
- All drugs prescribed to suspect, except Alprazolam (prescribed for her dog)
- Guilty of 1st Degree Manslaughter, DUI and Recklessly Endangering

Drug Recognition Expert (DRE)

Specially trained officer that provides expertise and assistance in impaired driving investigations

Provides “Post-Arrest” investigation

Requested when impairment is not consistent with the arrestee’s BAC or when drugs are suspected

DRE Training Stages

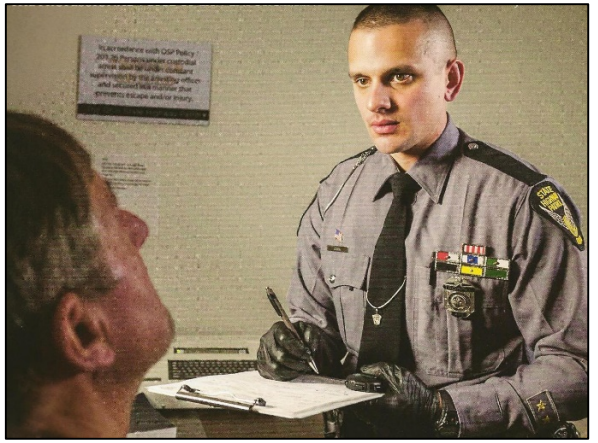
DRE Pre-School

DRE Field Certification

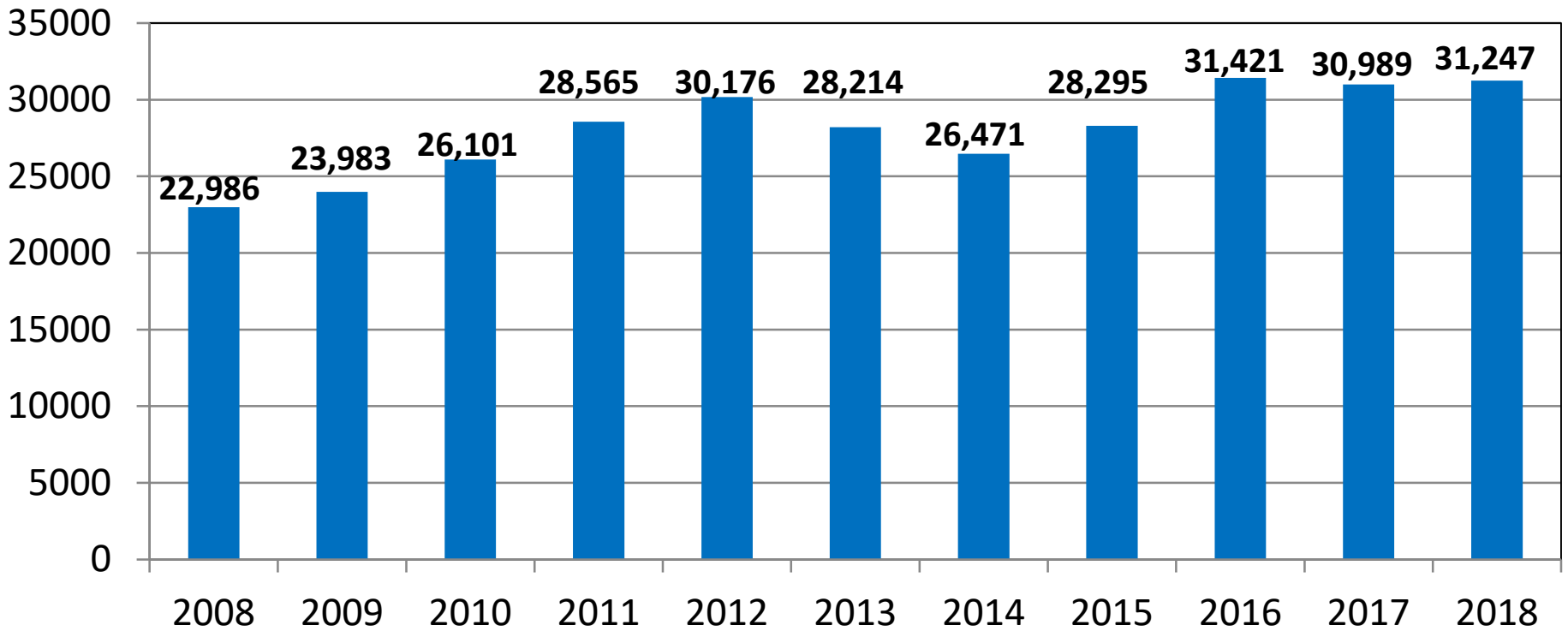
DRE 7-Day School

National / International DRE Totals

- ✓ Approximately 9,000 U.S. credentialed DREs (June 2019)
- ✓ Over 1,000 international credentialed DREs
- ✓ Over 28,000 U.S. law enforcement agencies with DREs



DRE Enforcement Evaluations



Source: NHTSA National Sobriety Testing Resource Center (NSTRC) and DRE Annual Reports

2018 DRE Enforcement Evaluations

Approximately 31,250 Evaluations

- California – 7,585
- New York – 2,400
- New Jersey – 1,791
- Pennsylvania – 1,650
- Oregon – 1,501
- Wisconsin – 929
- Iowa – 910

Source: 2018 DEC Program State Coordinator Annual Reports

Drug Categories Predicted by DREs

(2018 National Enforcement Evaluations)

1. Cannabis – 13,215
2. CNS Stimulants – 11,716
3. Narcotic Analgesics – 9,502
4. CNS Depressants – 8,730

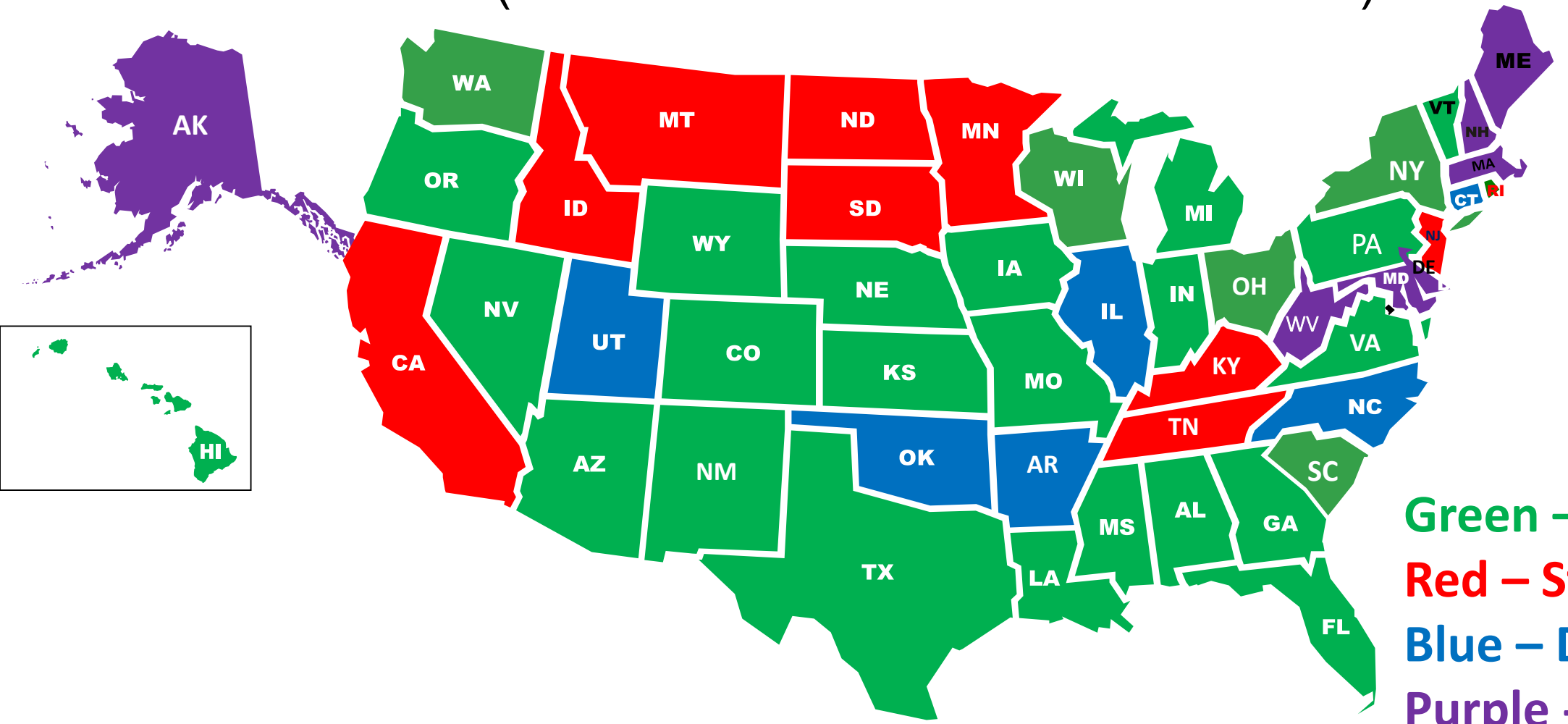
13,230 (42%) of all DRE enforcement evaluations, a DRE predicted poly-drugs

36% of all evaluations with toxicology results were positive for poly-drugs

Source: 2018 DEC Program State Coordinator Annual Reports

Top Detected Drug Category by State 2018

(DRE DUID Enforcement Evaluations)



Green – Cannabis

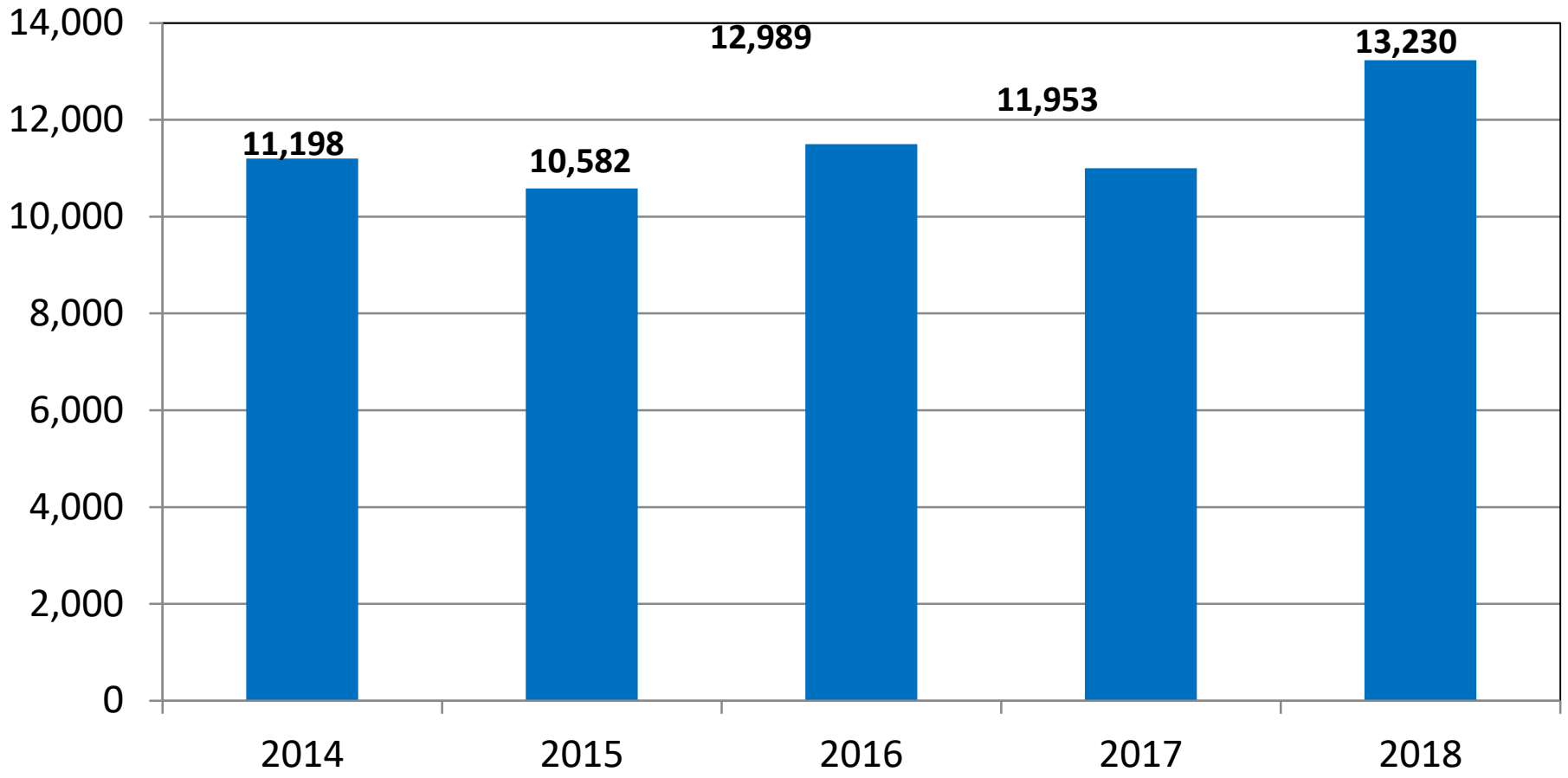
Red – Stimulants

Blue – Depressants

Purple - Narcotics

Source: NHTSA

National DRE Poly-Drug Positive Toxicology



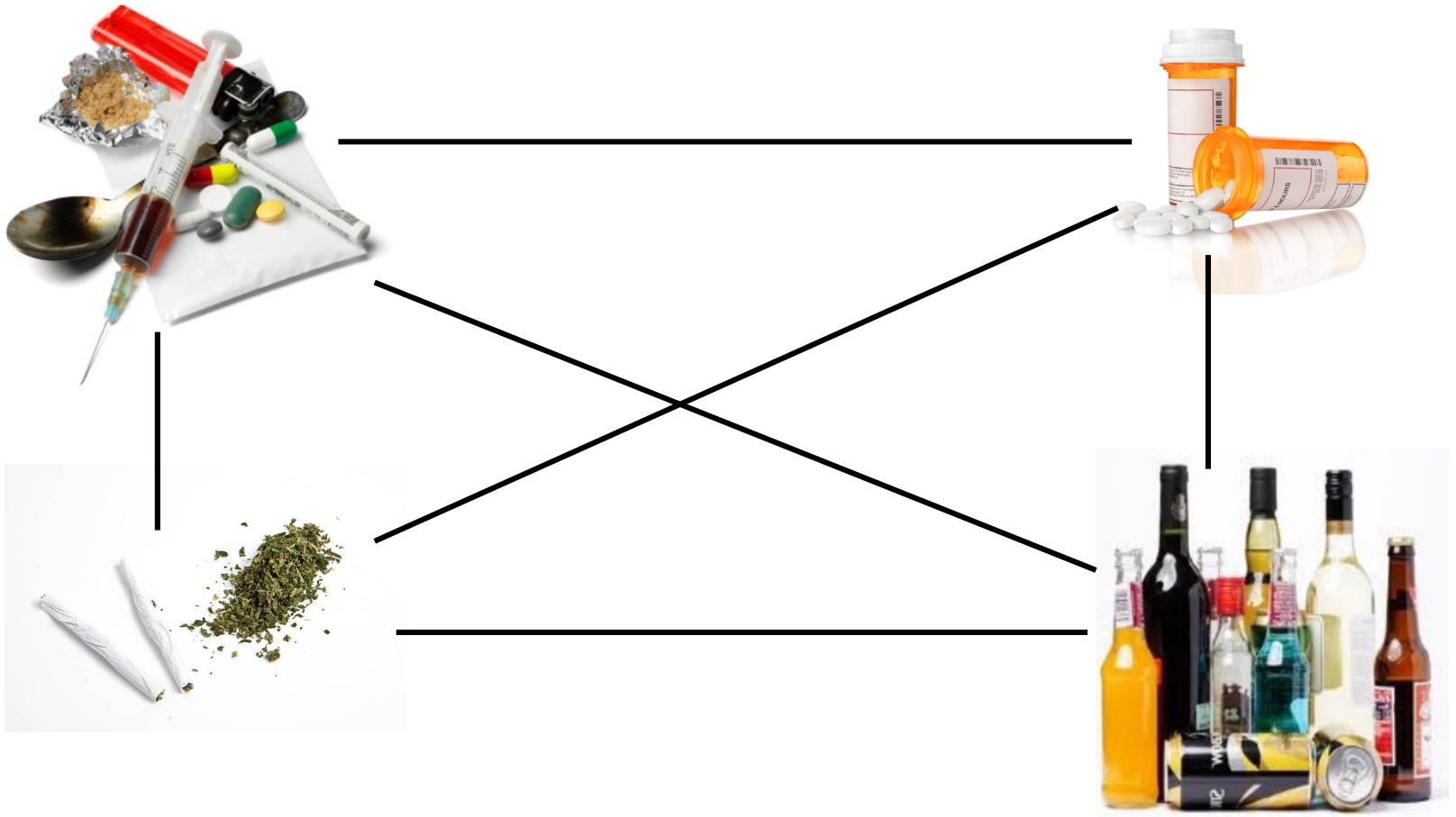
Source: NHTSA National Sobriety Testing Resource Center (NSTRC) and DRE Annual Reports

Top Detected Drug Combos – DRE Toxicology
(2017 & 2018)

1. CNS Stimulants & Cannabis
2. CNS Stimulants & Narcotic Analgesics
3. CNS Depressants & Narcotic Analgesics

DRE Poly-Drug Use

(Ingesting two or more drugs)



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DRE Poly-Category Use
(Ingesting drugs from two or more DRE drug categories)

(CNS Depressants)

DRE Drug Combination Effects

1. Null: No action + No action = No action (0 + 0 = 0)

2. Overlapping: Action + No Action = Action

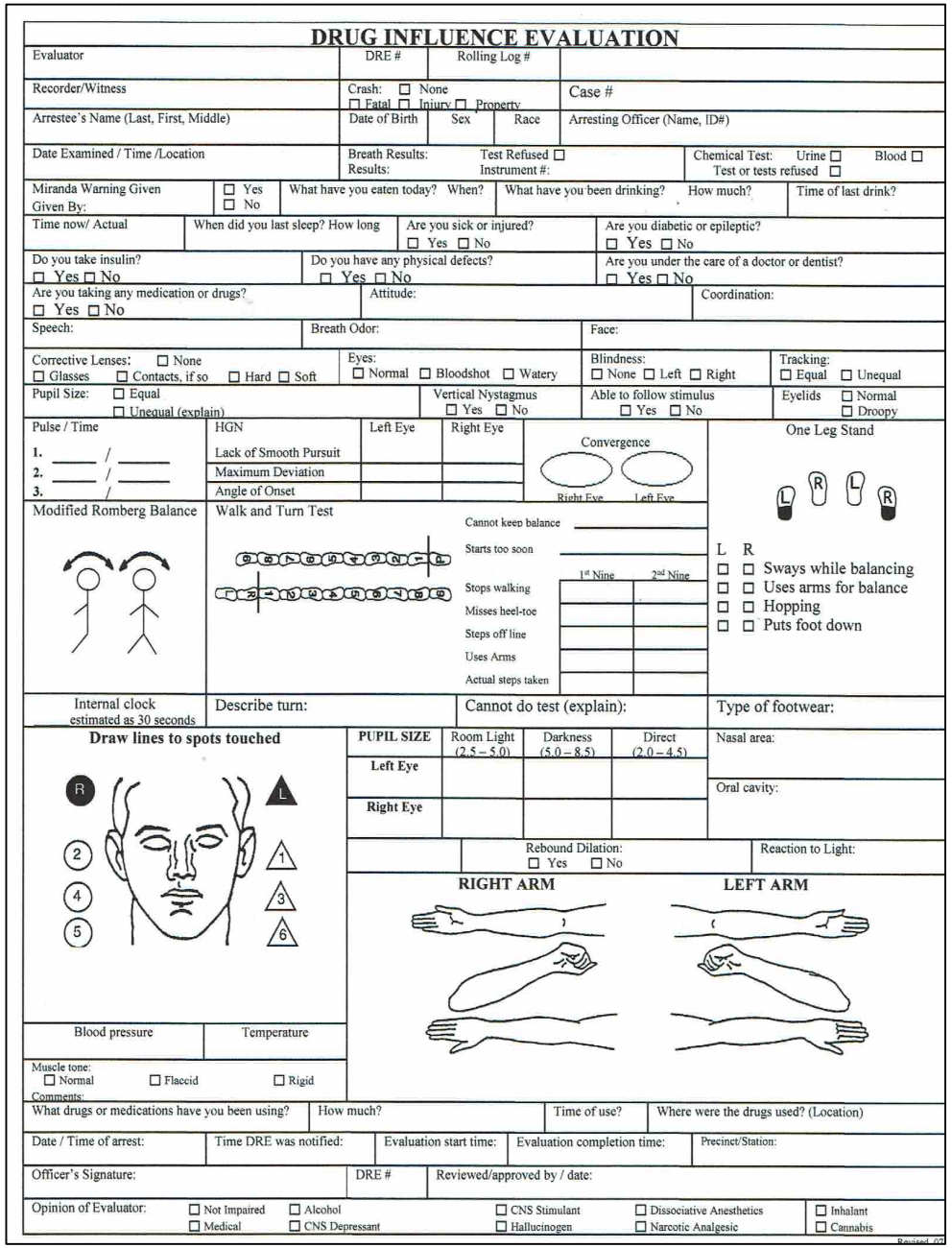
3. Additive: Action + Action = Greater Action (Effects may be exaggerated or reinforced)

4. Antagonistic: Action + Opposite Action = Unpredictable Action

(Actual effects can depend a number of things; dosage, time of ingestion, type of ingestion method, subjects metabolism, etc.)

DRE Drug Influence Evaluation Facesheet

Over 100 observation/data collection points used in forming an opinion



DRUG INFLUENCE EVALUATION

Evaluator | DRE # | Rolling Log #

Recorder/Witness | Crash: ☐ None ☐ Fatal ☐ Injury ☐ Property | Case #

Arrestee's Name (Last, First, Middle) | Date of Birth | Sex | Race | Arresting Officer (Name, ID#)

Date Examined / Time /Location | Breath Results: Test Refused ☐ Results: Instrument #: | Chemical Test: Urine ☐ Blood ☐ Test or tests refused ☐

Miranda Warning Given Given By: ☐ Yes ☐ No | What have you eaten today? When? | What have you been drinking? How much? | Time of last drink?

Time now/ Actual | When did you last sleep? How long | Are you sick or injured? ☐ Yes ☐ No | Are you diabetic or epileptic? ☐ Yes ☐ No

Do you take insulin? ☐ Yes ☐ No | Do you have any physical defects? ☐ Yes ☐ No | Are you under the care of a doctor or dentist? ☐ Yes ☐ No

Are you taking any medication or drugs? ☐ Yes ☐ No | Attitude: | Coordination:

Speech: | Breath Odor: | Face:

Corrective Lenses: ☐ None ☐ Glasses ☐ Contacts, if so ☐ Hard ☐ Soft | Eyes: ☐ Normal ☐ Bloodshot ☐ Watery | Blindness: ☐ None ☐ Left ☐ Right | Tracking: ☐ Equal ☐ Unequal

Pupil Size: ☐ Equal ☐ Unequal (explain) | Vertical Nystagmus ☐ Yes ☐ No | Able to follow stimulus ☐ Yes ☐ No | Eyelids ☐ Normal ☐ Droopy

Pulse / Time
1. ____ / ____
2. ____ / ____
3. ____ / ____

HGN | Left Eye | Right Eye
Lack of Smooth Pursuit
Maximum Deviation
Angle of Onset

Convergence (Right Eye, Left Eye)

One Leg Stand (L R L R)

L R
☐ ☐ Sways while balancing
☐ ☐ Uses arms for balance
☐ ☐ Hopping
☐ ☐ Puts foot down

Modified Romberg Balance

Walk and Turn Test

Cannot keep balance
Starts too soon

	1st Nine	2nd Nine
Stops walking		
Misses heel-toe		
Steps off line		
Uses Arms		
Actual steps taken		

Internal clock estimated as 30 seconds | Describe turn: | Cannot do test (explain): | Type of footwear:

Draw lines to spots touched (R, L, 1, 2, 3, 4, 5, 6)

PUPIL SIZE	Room Light (2.5 – 5.0)	Darkness (5.0 – 8.5)	Direct (2.0 – 4.5)
Left Eye			
Right Eye			

Nasal area:

Oral cavity:

Rebound Dilation: ☐ Yes ☐ No | Reaction to Light:

RIGHT ARM | LEFT ARM

Blood pressure | Temperature

Muscle tone: ☐ Normal ☐ Flaccid ☐ Rigid
Comments:

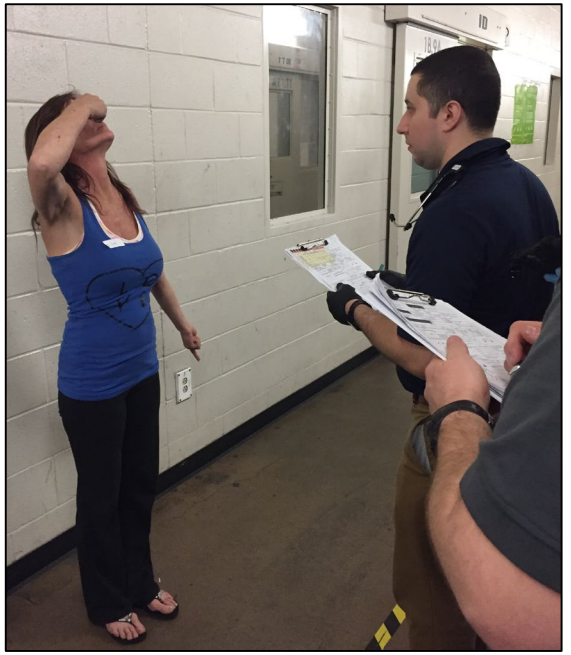
What drugs or medications have you been using? | How much? | Time of use? | Where were the drugs used? (Location)

Date / Time of arrest: | Time DRE was notified: | Evaluation start time: | Evaluation completion time: | Precinct/Station:

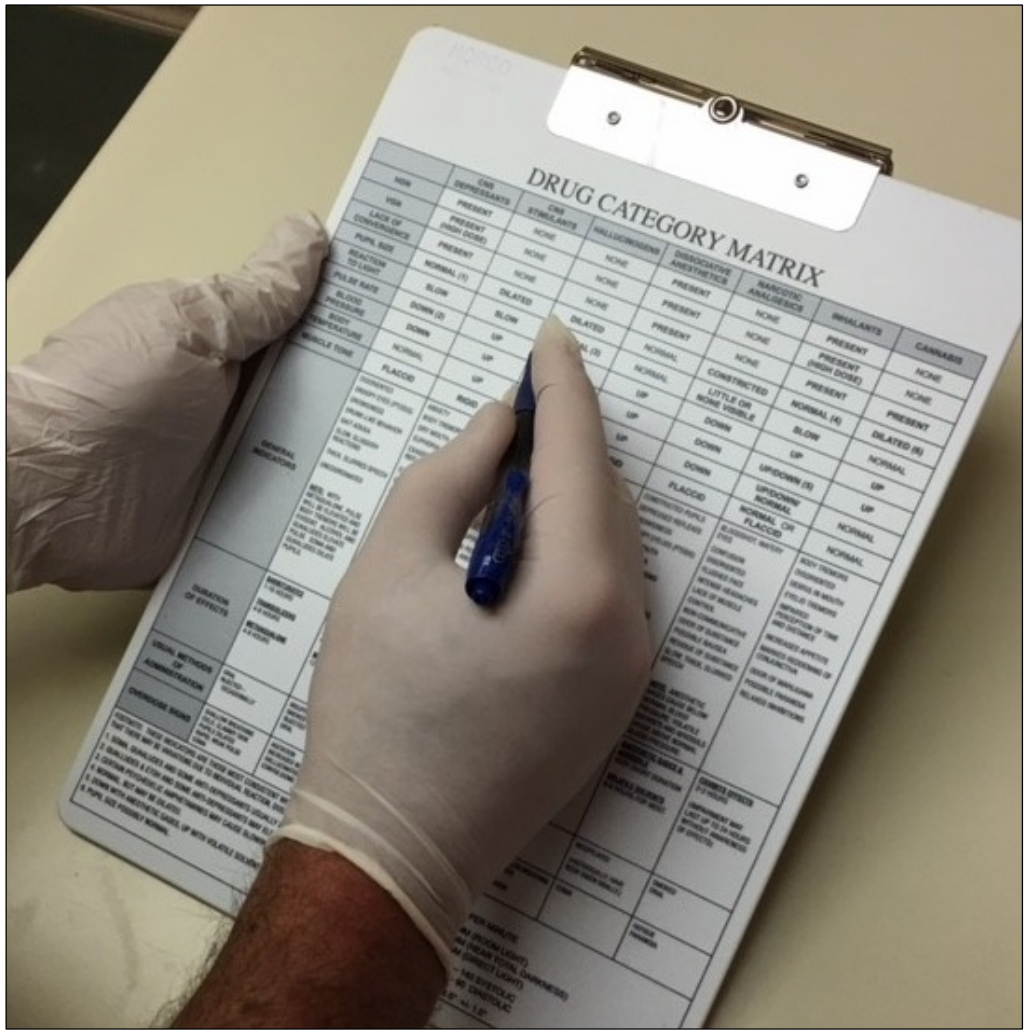
Officer's Signature: | DRE # | Reviewed/approved by / date:

Opinion of Evaluator: ☐ Not Impaired ☐ Alcohol ☐ CNS Stimulant ☐ Dissociative Anesthetics ☐ Inhalant ☐ Medical ☐ CNS Depressant ☐ Hallucinogen ☐ Narcotic Analgesic ☐ Cannabis

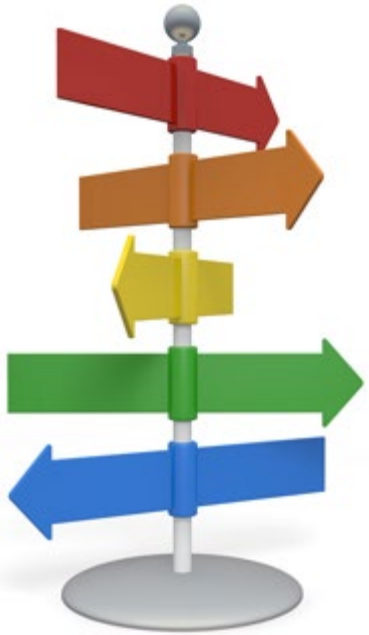
Revised .02



DRE Drug Category Matrix - Impairment Indicators



DRE Drug Category Matrix – Impairment Indicators



	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
HGN	Present	None	None	Present	None	Present	None
Vertical Gaze Nystagmus	Present (High Dose)	None	None	Present	None	Present (High Dose)	None
Lack of Convergence	Present	None	None	Present	None	Present	Present
Pupil Size	Normal (1)	Dilated	Dilated	Normal	Constricted	Normal (4)	Dilated (6)
Reaction to Light	Slow	Slow	Normal (3)	Normal	Little or None Visible	Slow	Normal
Pulse Rate	Down (2)	Up	Up	Up	Down	Up	Up
Blood Pressure	Down	Up	Up	Up	Down	Up/Down (5)	Up
Body Temperature	Normal	Up	Up	Up	Down	Up/Down/ Normal	Normal
Muscle Tone	Flaccid	Rigid	Rigid	Rigid	Flaccid	Normal or Flaccid	Normal
General Indicators	Disorientation Droopy eyelids Drowsiness Drunk-like behavior Slow, sluggish reactions Thick, slurred speech Uncoordinated Unsteady walk	Anxiety Body tremors Dry mouth Euphoria Exaggerated reflexes Excited Eyelid tremors Grinding teeth Increased alertness Insomnia Irritability Redness to the nasal area Restlessness Runny nose Talkative	Body tremors Dazed appearance Difficulty with speech Flashbacks Hallucinations Memory loss Nausea Paranoia Perspiring Poor perception of time and distance Synesthesia Uncoordinated NOTE: With LSD, Piloerection may be observed (goose bumps, hair standing on end)	Blank stare Confusion Chemical odor (PCP) Cyclic behavior Difficulty with speech Disoriented Early HGN Onset Hallucinations Incomplete verbal responses Increased pain threshold "Moon Walking" Non-communicative Perspiring (PCP) Possibly violent Sensory distortions Slow, slurred speech Slowed responses Warm to touch (PCP)	Depressed reflexes Droopy eyelids Drowsiness Dry mouth Euphoria Facial itching Inability to concentrate Nausea "On the Nod" Puncture marks Slow, low, raspy speech Slow breathing Slow deliberate movements NOTE: Tolerant users exhibit relatively little psychomotor impairment.	Bloodshot eyes Confusion Disoriented Flushed face Intense headaches Lack of muscle control Non-communicative Odor of substance Possible nausea Residue of substance Slow, thick, slurred speech Watery eyes	Altered time/distance perception Alteration in thought formation Body tremors Bloodshot eyes Disoriented Drowsiness Eyelid tremors Euphoria Impaired memory Increased appetite Lack of concentration Mood changes Odor of Marijuana Rebound Dilation Relaxed inhibitions Sedation

IACP DEC Program Website

www.decp.org

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