



# RAPID TOXICOLOGY TESTING USING RANDOX EVIDENCE MULTISTAT

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# RANDOX EVIDENCE MULTISTAT

- The analyzer allows for extremely quick testing of a variety of different types of drugs. Sample can be analyzed in about 30 minutes and requires very little preparation by the analyst.



# SAMPLE PROCESSING

- Perform Batch QC or ensure batch QC has been done (Batch QC's are good for 30 days)
- Pipette 150 $\mu$ l of sample into microcentrifuge tube containing 450 $\mu$ l of sample diluent
- Centrifuge at 13,000rpm for 10 minutes



# SAMPLE PROCESSING

- Insert tip cartridge into instrument
- Pipette 200 $\mu$ l of cutoff into the left well of the cartridge
- Pipette 200 $\mu$ l of sample into the right well of the cartridge
- Insert the cartridge into the instrument and follow the instructions on the screen



## Drugs Of Abuse MultiSTAT Panel – Blood

Assay		
α-PVP (Flakka)	Ethyl Glucuronide (EtG)	Pregabalin
Amphetamine	Fentanyl	Synthetic Cannabinoids (AB-CHMINACA)
Barbiturates	Methadone	Synthetic Cannabinoids (AB-PINACA)
Benzodiazepines	Methamphetamine	Tramadol
Benzoyllecgonine (Cocaine Metabolite)	Opiate	Tricyclic Antidepressants (TCA)
Buprenorphine	Oxycodone	6-MAM
Cannabinoids (THC)	Phencyclidine (PCP)	-

# VALIDATION

- Five different runs were done over the course of 5 days. Each run included the following:
  - Negative (blank blood)
  - Positive control (2x cutoff)
  - Negative control (1/2x cutoff)
  - 2 previously analyzed case samples

## VALIDATION RESULTS

- Overall, most of the results were consistent with what was expected.
- There were some discrepancies in some of the case sample results, which is why presumptive testing should never be given the same weight as confirmatory testing.
- A note is added to all of our Randox reports that states: The results reported are from a preliminary screen, the screen results are merely an indication of drugs that may be present in the sample. The weight or confidence in screening results cannot be given the same as a confirmatory test.

# CORONER CASE SAMPLES

- We have processed samples for 9 different agencies.
- As of August 20<sup>th</sup>, 2024, 116 case samples have been analyzed on our Radox instrument
- Screen Results:
  - 250 Positive results
    - 15% Amphetamine
    - 3% Benzodiazepines
    - 11% BZE/Cocaine
    - 23% Fentanyl
    - 18% Methamphetamine
    - 5% Oxycodone
    - 2% Tramadol



# CORONER CASE COMPARISONS

- Confirmations have been done for all 116 samples screened with the Randox instrument
  - 67% of the positive BZE/Cocaine Randox results have been determined to be true positives (33% false positives) (9 out of 27 cases were apparent false positives)
  - 97% of the positive Amphetamine Randox results have been determined to be true positives
  - 97% of the positive Cannabinoids Randox results have been determined to be true positives
  - 98% of the positive Methamphetamine Randox results have been determined to be true positives

# CORONER CASE COMPARISONS

- 100% of the positive Fentanyl, alpha-PVP, Barbiturates, Benzodiazepines, Buprenorphine, Methadone, Opiates, TCA's, and Tramadol Randox results have been determined to be true positives
- There have been 2 instances of false negatives (0.8%) (amphetamine confirmed at 62ng/mL and 74ng/mL, Randox cutoff is 50ng/mL)
- We will continue to compare the screen results to confirmatory results

# BENEFITS OF ISPFS RANDOX TESTING

- 24-48 hour turnaround time (excluding weekends)
- Staff is fully trained in how to operate the necessary equipment as well as the instrument, and we have a validated method in place
- ISPFS staff can perform confirmation testing
- Both Randox testing and toxicology testing is done under our ISO 17025:2017 accreditation
- Staff can provide expert testimony in operation and theory of instruments and testing processes
- Staff has expertise in data interpretation and can evaluate any potential issues in result discrepancies.

# QUESTIONS?

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Thank you to:

- NMS Labs for providing confirmation data
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