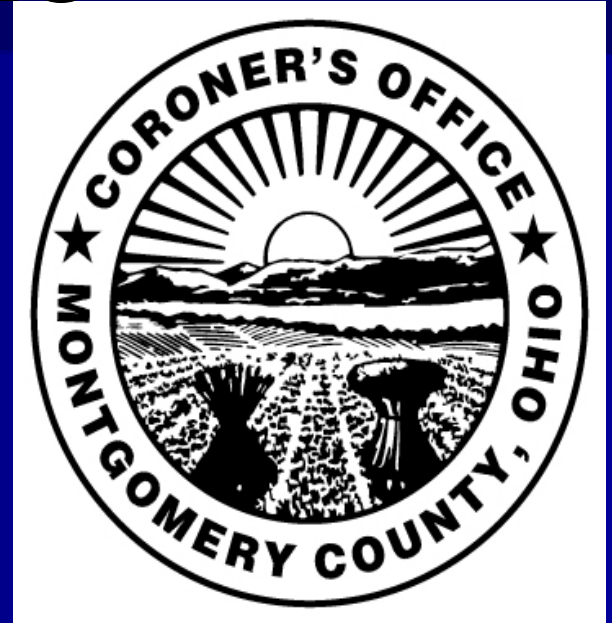


# DUI in Southern Ohio

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## Region

- The MVRCL is a regional facility that provides toxicology services to over 100 police agencies throughout the southern portion of the state of Ohio.
- Agencies become “members” and as such can use any of the crime labs services – latent prints, firearms, tool marks, DNA, trace evidence, computers, crime science, photography, chemistry, documents and tox.

# Toxicology Cases for 2005

- 817 Alcohol requests (all cases)
- 650 Drug screen requests (80%)
- 37 DFSA requests
- Processing of the cases tends to skew the results somewhat
- role of drugs in DUI

# Process of a Case

- History
- Requested Service
- Results of ethanol screen
- Results of ELISA drug screen
- Confirmation of ELISA drug screen
- May move on to more testing depending upon the results of above analysis

# DUI Per Se Ethanol Levels Ohio

- Blood – 0.08 gm%
- Serum – 0.096 gm%
- Urine – 0.11 gm %
- If result is 0.02 over any of these limits then analysis may be complete – depending upon case history and request made by submitting agency

# Toxicology Screening

- If analysis continues – ELISA immunoassay is next. Cut-offs in ng/mL ( )
- Kits used routinely are: amphetamine (50), methamphetamine (50), THC metab. (20), barbiturates (1000), cocaine metab (50)., carisoprodol (1000), opiates (25), benzodiazepines (10), methadone (50).
- Other options are; PCP (10), oxycodone (25) and fentanyl (1)

# Toxicology Screening Con't

- (GC/MS) screen for basic, acidic and neutral drugs in either blood, urine or serum.
- Targeted Assays; HPLC for gabapentin and baclofen, GC/MS for GHB and 4-methyl GHB, GC/MS for methylphenidate, GC/EC clonazepam, triazolam, flunitrazepam and lorazepam (do not cross react in ELISA)

# Toxicology Confirmation

- Either by GC/MS, GC/FID, GC/EC, GC/NPD, HPLC, And very soon LC/MS
- Drug concentrations are reported in blood and serum. Urine is either positive or not detected except for 11-carboxy-THC <15 ng/mL, cocaine <150ng/mL, BE <150 ng/mL. Due to an Ohio law stating the value must be at least this amount.



## What did MVRCL see in 2005

- #1 was ethanol with 446 Occurrences
- #2 was THC and 11-carboxy-THC with 230 Occurrences
- Urine was reported as positive for 11-carboxy-THC or  $< 15$  ng/mL and not analyzed for THC.
- Blood values for THC ranged from 1-7 ng/mL with an average of 3.5 ng/mL,  $n=13$ . 11-carboxy-THC not analyzed in blood.

# What did MVRCL see in 2005

- #3 was cocaine and metab. with 111 occurrences.
- Urine was reported as positive for or < 150ng/mL for cocaine and Be. Positive for cocaethylene and EME.
- Blood values for cocaine ranged from 50 - 2500 ng/mL with an average of 41 ng/mL, n=81.

# Cocaine and Metabs. Con't

- #3 was cocaine and metabs. with 111 occurrences.
- Blood values for benzoylecgonine ranged from 100 - 5000 ng/mL with an average of 2400 ng/mL, n=111.
- Only one blood value for cocaethylene 80ng/mL and 16 positive urines
- Ecgonine methyl ester – 110 positives

# DUI Case 1 - History

- Vehicle pulled over for fictitious plates
- Strong smell of marijuana coming from vehicle
- Driver admitted to smoking marijuana approx. 1/2 hour prior to stop.
- Blood collected at 2256 hours

# Toxicology Results– Case 1

## Blood - ng/mL

- THC – 7
- Cocaine - > 2500
- Benzoylecgonine > 5000
- Ecgonine methyl ester - positive

## What did MVRCL see in 2005

- #4 was alprazolam with 110 occurrences.
- Blood values for alprazolam ranged from 30 - 260 ng/mL with an average of 90 ng/mL, n=17.

## **DUI Case 2 - History**

- Subject was involved in a crash
- Believed to have been attempting suicide with meds and alcohol
- Blood and urine collected at 1955 hours

## Toxicology Results– Case 2

### Blood - ng/mL

- Alprazolam – 220
- Venlafaxine - < 100
- Norvenlafaxine - positive
- Ethanol 0.12 gm%

### Urine

- Alprazolam – positive
- Venlafaxine - positive
- Norvenlafaxine - positive
- Ethanol 0.18 gm%



## What did MVRCL see in 2005

- #5 was hydrocodone with 67 occurrences.
- Blood values for hydrocodone ranged from 30 - 70 ng/mL with an average of 50 ng/mL, n=4.

## **DUI Case 3 - History**

- Vehicle involved in head on traffic crash
- Driver admitted to taking vicodin earlier in the day
- Pupils dilated and speech slurred
- Blood collected at 1352 hours

## **Toxicology Results– Case 3**

### **Blood - ng/mL**

- Alprazolam – 70
- Clonazepam - 30
- 7 – aminoclonazepam - 80
- Diazepam – 190
- Nordiazepam – 270
- Oxazepam – 50
- Hydrocodone - 50

## What did MVRCL see in 2005

- #6 was oxycodone with 59 occurrences.
- Only 3 blood values for oxycodone 70, 80 and 450 ng/mL.

## What did MVRCL see in 2005

- #7 was pseudoephedrine and ephedrine with 53 and 32 occurrences respectively.
- Blood values for pseudoephedrine ranged from 240 - 670 ng/mL with an average of 460 ng/mL, n=4.

## What did MVRCL see in 2005

- #8 was morphine with 49 occurrences.
- Blood values for free morphine ranged from 20 - 120 ng/mL with an average of 45 ng/mL, n=13.
- 6-monoacetylmorphine – 19 occurrences with 2 blood values, < 20 and < 30 ng/mL.

## **DUI Case 4 - History**

- Driver involved in a traffic accident
- A lump of suspected heroin is recovered from Driver's rectum by hospital staff
- Blood collected at 1805 hours

## Toxicology Results– Case 4

### Blood - ng/mL

- 6-monoacetylmorphine – < 20
- Morphine - 40
- Codeine - < 20
- Oxycodone - 80



# Suspected Overdose Case 5 - History

- Subject was incoherent and unresponsive
- Taken to ER where blood was drawn at 0032 hours

## **Toxicology Results– Case 5**

### **Blood - ng/mL**

- 6-monoacetylmorphine – < 30
- Morphine - 120
- Codeine - < 30
- Cocaine – 60
- Benzoyllecgonine – 1200
- Ecgonine methyl ester - positive

## What did MVRCL see in 2005

- #9 was clonazepam and 7-amino clonazepam with 27 and 33 occurrences respectively.
- One case with a blood value for clonazepam and 7-AMC - 30 and 80ng/mL respectively. (Case 2)

# What did MVRCL see in 2005

- #10 was carisoprodol and meprobamate with 27 and 29 occurrences respectively.
- Blood values for carisoprodol ranged from 7.9 - 17 mcg/mL with an average of 11 mcg/mL, n=5.
- Blood values for meprobamate ranged from 3 - 50 mcg/mL with an average of 19 mcg/mL, n=6.

## What did MVRCL see in 2005

- Also #10 was diazepam and nordiazepam with 21 and 29 occurrences respectively.
- Blood values for diazepam ranged from 50 - 300 ng/mL with an average of 220 ng/mL, n=6.
- Blood values for nordiazepam ranged from 50 - 270 ng/mL with an average of 150 ng/mL, n=7.

## What did MVRCL see in 2005

- #11 was codeine with 28 occurrences.
- Blood values for codeine ranged from 10 - 30 ng/mL with an average of 20 ng/mL, n=6.

## **DUI Case 6 - History**

- Reckless operation of motor vehicle
- Blood collected at 2030 hours

# Toxicology Results– Case 6

## Blood - ng/mL

- Meprobamate – 1500
- Carisoprodol - 12000
- Oxycodone - 70
- Diazepam – 220
- Nordiazepam – 190
- Oxazepam - < 100



## What did MVRCL see in 2005

- #12 was methadone with 24 occurrences.
- Blood values for methadone ranged from 50 - 380 ng/mL with an average of 180 ng/mL, n=4.

## What did MVRCL see in 2005

- #13 was methamphetamine and amphetamine with 19 and 21 occurrences respectively.
- Blood values for one case with both methamphetamine and amphetamine was 280 and 90 ng/mL respectively.
- Two other blood values for methamphetamine and amphetamine were 360 and 120 ng/mL respectively but these were not from the same case.

## What did MVRCL see in 2005

- #14 was butalbital with 11 occurrences.
- Two blood values for butalbital were 4.7 and 12 mcg/mL.

## **DUI Case 7 - History**

- Driver struck a parked vehicle
- Small bag of suspected marijuana was found outside his vehicle underneath where he was sitting
- Blood collected at 0850 hours

# Toxicology Results– Case 7

## Blood - ng/mL

- Amphetamine – 120
- ELISA THC metab. Not detected

## **DUI Case 8 - History**

- Driver involved in a traffic accident
- Arrested for operating a vehicle while intoxicated (OVI)
- Blood collected at 1525 hours

# Toxicology Results– Case 8

## Blood - ng/mL

- Butalbital – 12000
- Alprazolam – 50
- Nordiazepam – 130
- Promethazine – 80
- Dextromethorphan – 70
- Pseudoephedrine - 640

## **DUI Case 9 - History**

- Driver involved in a traffic accident
- Arrested for operating a vehicle while intoxicated (OVI)
- Odor of marijuana, behavior was erratic and eyes were both constricted
- Blood collected at 1555 hours



## Toxicology Results– Case 9

### Blood - ng/mL

- Methamphetamine – 360
- MDMA – > 1000
- MDA - 110
- Methadone – 380
- Diphenhydramine – 780

## Other drugs with 10 occurrences or less (Blood values)

- Temazepam – 9
- Zolpidem – 8 (120 and 250 ng/mL)
- Promethazine – 7 (80 ng/mL)
- Dextromethorphan – 7 (70 ng/mL)
- Norpropoxyphene – 7
- Gabapentin - 6
- Oxazepam – 5
- Chlorpheniramine – 4
- Citalopram - 4
- Propoxyphene – 4
- Amitriptyline/Nortriptyline – 4

## **DUI Case 10 - History**

- Driver was found passed out behind the wheel of a running motor vehicle
- Arrested for operating a vehicle while intoxicated (OVI)
- Blood collected at 0926 hours

# Toxicology Results– Case 10

## Blood - ng/mL

- Zolpidem – 120

## Other drugs with 10 occurrences or less

- Fentanyl – 4
- Diphenhydramine – 4
- Fluoxetine – 4
- Lorazepam – 4
- Tramadol – 4
- Hydromorphone - 4
- Doxylamine – 3
- Cyclobenzaprine - 3
- Sertraline – 3
- Orphenadrine - 3
- Bupropion – 3
- Venlafaxine - 3

## DUI Case 11 - History

- Vehicle stopped for "marked lanes"
- Detected odor of marijuana
- Arrested for operating a vehicle while intoxicated (OVI)
- Vehicle search located 2 white oblong pills and green leafy vegetable substance – chemistry identified these as ibuprofen and marijuana
- Urine collected at 2100 hours

# Toxicology Results– Case 11

## Urine

- 11-carboxy-THC – positive
- Hydromorphone - positive

## Other drugs with 10 occurrences or less – (Blood Values)

- MDMA/MDA – 2 (>1 / 0.11 mcg/mL one case)
- Midazolam – 2
- Phenytoin – 2
- Trazodone - 2
- Phentermine - 1
- Metaxalone – 1
- Meperidine – 1
- Methocarbamol – 1
- Mirtazepine – 1
- Triazolam – 1
- Topiramate – 1



## **DUI Case 12 - History**

- Driver caused traffic accident
- Failed sobriety tests
- Admitted to taking 4 prescription meds before accident
- Arrested for operating a vehicle while intoxicated (OVI)
- Blood collected at 2254 hours

# Toxicology Results– Case 12

## Blood – ng/mL

- Alprazolam – 30
- Tramadol – 350
- Metaxalone – 5600
- Pseudoephedrine - 240

## Discussion

- The majority of Ohio DUI cases are multi drug.
- Trying to encourage submittal of more blood specimens and more information.
- Wide variety of drugs - Rx, illicit and OTC.
- Methadone and amphetamine class is on the rise for 2006

# Questions??

