Choosing the Best Drug Screening Specimen - An MRO’s Perspective

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Agenda
- Drug Testing Specimen
  - What is the ideal specimen?
  - Why was urine originally chosen?
- Urine Positive Rates
  - What is the trending over time?
  - Why is there a difference?
- Alternate Specimens
  - Why oral fluid or hair?
- Specimen Selection
  - Which specimen is best for my company?
Drug Screening Specimen

• The ideal specimen characteristics
  » Easy to collect/transport
  » Cheap to test
  » Accurate
  » Adequate detection window
  » Impossible to subvert

In the late 1980’s, this was urine.

Urine Positive Rates

• Quest Diagnostics data (Drug Testing Index)

Urine Positive Rates

• Quest Diagnostics data with NIDA self reported drug use data

[Charts and graphs showing data]
What has changed over the past 20+ years?

Deterrence vs. Subversion

- Certainty is a factor
- Empowers people to make better choices
- Drug users seek employment with employers who do not have drug-free workplace programs

- Literally MILLIONS of web sites devoted to "beating a drug test"

- Categories
  - Dilution
  - Substitution

Subversion

- The urine drug screen collection is not observed as a standard practice
  - There are some mandated observed collections in the federal program as well as some MRO recommended observed collections in the non-federally regulated arena
  - Without observation, the urine specimen is easily "manipulated"

- Adulteration - placing something in the urine to impact the specimen in a way that drugs will not be detected
- Substitution - using a fluid other than the donor's own urine as the tested substance
- Dilution - all drug testing is predicated on concentration; urine as a specimen can be diluted by simply drinking a lot of water over a short period of time.

Real world testing

- Washington State Study
  - Source: Washington State Toxicology Laboratory, University of Washington, Seattle 98134, USA.

- As a reference point
  - Quest Diagnostics lab positive rate in 2002 was 4.4%
Urine Positive Rates

"Operation Trucker Check"

A total of 1079 drivers and their vehicles were assessed for driver and equipment violations.

- Compliance with the drug-testing portion was voluntary, and there was a 19% refusal rate.
- 822 urine specimens were obtained.

- 9.5% were for CNS stimulants, such as methamphetamine, amphetamine, phentermine, ephedrine/pseudoephedrine, and cocaine.
- The second most frequently encountered drug class were the cannabinoids, with 4.3% of drivers testing positive for marijuana metabolites.

"The results indicate that in spite of comprehensive drug testing in the trucking industry, some tractor-trailer drivers are continuing to take illicit and other drugs with the potential of having a negative effect on their driving ability."

Alternate Specimens

Developed to compete with urine

As well as to combat known issues with the urine test:

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Oral Fluid</th>
<th>Hair</th>
</tr>
</thead>
<tbody>
<tr>
<td>Easy to collect/transport</td>
<td>Yes (with a caveat)</td>
<td>Yes</td>
</tr>
<tr>
<td>Cheap to test</td>
<td>Yes (with a caveat)</td>
<td>No, relatively higher cost to test compared to urine and oral fluid</td>
</tr>
<tr>
<td>Accurate</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Adequate detection window</td>
<td>Yes and No, oral fluid is an ideal matrix to discover recent use, but the window of detection is less than urine</td>
<td>Yes and No, hair testing has a long detection window (up to 90 days from collection); however, there is no temporal relation to use</td>
</tr>
<tr>
<td>Impossible to subvert</td>
<td>Yes (with a caveat)</td>
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</tr>
</tbody>
</table>

Saliva (Oral Fluid) Drug Testing

Strengths

- Outstanding temporal relationship to use – oral fluid is an analogue to serum
- Not easily subverted
- Can be collected by employers without a substantial "icky factor"

Weaknesses

- Higher cost if a collection site is needed (network is small)
- Smallest detection window – less than 24 hours for THC
Hair Drug Testing

**Strengths**
- Long detection window
- Arguably the best test for cocaine
- Highest donor “FEAR FACTOR”
- Not easily subverted

**Weaknesses**
- Small collection site network
- Relatively high cost
- No temporal relationship to use
- Poor specimen to detect sporadic marijuana use
- Follically challenged issue

Specimen Differences

- Approximated average client cost per test
  - Urine: $35.00
  - Oral fluid: $29.00
  - Hair: $65.00

Specimen Differences

- MRO verified positive rates (HireRight data from FY2015)
  - NREG UDS: 2.2%
  - Oral fluid: 4.0%
  - Hair: 5.6%
Specimen Selection
Your Drug Free Workplace

Challenges

- Acknowledge
  - Drug Free Workplace programs are structured for
    - Deterrence
    - Not detection

- Even though deterrence is the Goal, detection is Key
  - If donors can "study" for the test, the effectiveness of its deterrence is minimal.
    - Methods of "studying"
      - Delay collection
        - Applicable for oral fluid and urine
      - Specimen dilution
        - Applicable for oral fluid and urine
      - Specimen substitution (substitution, adulteration, or tempering)
        - Applicable for urine and hair
      - No specimen
        - Applicable for urine and hair
        - Need to address with policy
Delayed Collection

• Windows of detection

Urine
- Onset: a few hours
- Rests: 2 days
- Marijuana: less than 24 hours
- Onset: almost immediately

Oral fluid
- Onset: 7 days
- Rests: 90 days

Hair
- Onset: 3 days
- Marijuana: 7 days
- Opiates: 7 days
- Cocaine: 3 days
- Amphetamines: 3 days

Specimen Dilution

• Urine
  - Increasing free water in the urine specimen
    - Accomplished by:
      - Increased water/fluid ingestion that day of the screen
      - Diuretic medications
    - Real world example:
      - Positive analyte quantitative level dropped by nearly 300% within one hour of hydration

• Oral fluid
  - Diluting out the oral fluid specimen with water
  - Accomplished by:
    - Drinking water/fluid immediately prior to the drug screen
    - Often leads to invalid results

Specimen Subversion

• Urine
  - Subversion products are too numerous to count
    - Searched on Google, "beat the drug test" on 3/15/2016
    - Returned: About 3,550,000 results (0.51 seconds)
  - Two basic categories
    - Substitution
      - Using another fluid as the donor’s urine (some even offer delivery devices and warming pouches)
    - Adulteration
      - Using a substance that interferes with the testing process
Specimen Subversion

- **Hair**
  - Subversion technique – primarily specimen adulteration
  - Washing the hair with a product that either breaks down the integrity of the hair itself or a substance that coats the hair in a way to impact the testing of the specimen

  - **The Get Clean shampoo works by coating the hair with an organic film much like a conditioner. When the examiner removes the hair, the shampoo bound to the hair goes with it. Once the hair is dissolved, the residual left by the shampoo is free to interact with the nicotine metabolites, which had been trapped in the hair follicle, temporarily reducing the metabolites.**

No Specimen

- **Urine**
  - Shy bladder protocol
    - An evaluation to determine if the donor has a medical condition with a high degree of probability to prohibit someone from urinating

  - Alternate specimen
    - Some companies opt to hair if a donor cannot urinate

- **Hair**
  - Company policy must address the issue if a donor does not have hair sufficient to perform a hair test

Factors Affecting Specimen Choice

- Risk Tolerance
- Drug Free Workplace Program
- Drug Screening Specimen
- Coat
- On-boarding Practices
Risk Tolerance

- All companies are risk adverse to some degree
- A company's specimen selection should take into consideration the following:
  - How safety sensitive is your workforce?
    - Higher safety sensitive employers should have the most robust drug-free workplace program since illicit drug users are 500% more likely to have a worker's compensation claim
  - How much is your brand worth?
    - Bad publicity can horrifically impact some employers
  - Is medical cost containment a priority?
    - Illicit drug users have 300% higher medical costs

Drug Free Workplace Program

- All drug testing is based on deterrence
  - An effort to keep illicit drug users from being employees
- Specimen choice is impacted by a company's drug free program
  - Considerations
    - Do your company only drug test pre-placement candidates (no random program)?
      - This is very typical for white collar employers
      - Really only have one chance to detect and deter illicit drug use
    - Does your company have a robust random program?
    - Random programs are excellent deterrence measure
    - Does your management team know the signs of illicit drug use?

On-boarding Practices

- Specimen selection considerations based on how you on-board
  - Does your company dynamically on-board people?
    - Hiring decision is made when the candidate is remote
  - Does your company have “intimate” contact with the candidate during the hiring process?
    - Hiring decision is made while the candidate is in your building
  - How long does a candidate know about your company’s drug screening requirement prior to the collection date?
    - Remember 10 out of 10 people using drugs know it
Cost

- The almighty dollar
  - Cost is always a primary concern

- Cost vs. Value
  - If your current drug free workplace program is not yielding positive results, is it worth the cost?
  - Value is obtained by deterrence, and deterrence is obtained by detection
  - To figure out the value of your drug free workplace program, perform a return on investment analysis periodically
    - More to come on this concept

Where Do You Place Your Chips?

- Due to limited resources, organizations have to prioritize where they spend their screening dollars

Scenario #1 (Typical Transportation Client)

- Risk Tolerance: Medium
- Drug Free Workplace Program: Robust employee testing program
- Cost: Very sensitive
- On-boarding Practices: Minimal delay
Scenario #2 (Typical Manufacturing Client)

- Risk Tolerance: Medium
- Drug Free Workplace Program: Employee testing program in place
- Cost: Sensitive
- On-boarding Practices: No delay (candidate contact)

Scenario #3 (Typical White Collar Client)

- Risk Tolerance: VERY LOW
- Drug Free Workplace Program: No incumbent employee testing
- Cost: Neutral
- On-boarding Practices: Delayed

Employer Impact

- Direct Costs
  - Drug abusing employees acquire 300% higher medical costs and benefits which consequently increases health insurance rates
    - [U.S. Chamber of Commerce]
  - Illicit drug users are five times more likely to file a workers’ compensation claim
    - [U.S. Dept. of Labor]
  - Many illegal drugs are bought by money diverted from legitimate businesses and could be as much as 100 billion a year (2.5% of GNP and 8% of discretionary spending)
    - [U.S. Chamber of Commerce]
Indirect Costs

Credible studies show that a substance abuser will function at about 67% of his/her capacity

- [National Institute on Drug Addiction]

Employees using drugs are three times more likely to be late for work and 2.5 times more likely to have absences of eight or more days

- Collectively, substance abusers have an absentee rate of 30-35 days per year
  - [US Department of Labor]

38% - 50% of all Workers’ Compensation claims are related to substance abuse in the workplace

- [US Department of Labor]

Up to 40% of industrial fatalities and 47% of industrial injuries can be linked to alcohol abuse and alcoholism

- [Employee Assistance Society of North America]

Based on US Dept. of Labor data, having an illicit drug user on staff costs a company $14,000 per year

- Illicit drug use directly impacts employers to the tune of $198 Billion per year

- It is believed that there are 14 Million illicit drug users who are full-time employees

Return on Investment Calculator

ROI per 1000 drug screens

- Pos. detected
- Cost of testing ($K)
- Projected savings ($K)
- ROI ($K)

<table>
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<tr>
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<th>Cost of testing ($K)</th>
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<td>Urine</td>
<td>300</td>
<td>100</td>
<td>200</td>
<td>3</td>
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Final Recommendation

- If you have not evaluated alternate specimen testing, you may be stuck with a less effective drug free workplace program.
- Talk to a consultant in the drug free workplace arena.
- What to look for in a consultant?
  - Someone who:
    - Can broker or advise on all specimen.
    - Not someone who is vested in selling a certain specimen.
    - Can help you understand the regulatory environment you may be in.
    - Can help configure a program for you that meets your unique needs.