Interpreting UDT Results

What if result is positive for a non-prescribed drug?

Possibilities are:
1. False positive (on screen) -- order confirmatory test
2. Substance detected is a metabolite of a prescribed drug (see metabolic pathways)
3. Patient ingested the drug, or drug that metabolizes to it (see Opioid Metabolic Pathways)
4. Lab error or contamination

*Consider all the possibilities before acting on UDT results

What if result is negative for the prescribed drug?

Possibilities are:
1. Urine drug screen won’t reliably detect the prescribed drug (see Table) -- order confirmatory test
2. Drug present but concentration is below the cutoff for a positive result (on screen) -- order confirmatory test
3. Urine is diluted (physiologic or tampering)
4. Patient is a fast-metabolizer
5. Patient has not taken drug recently
6. Patient is diverting medication
7. Urine is adulterated or substituted

*Consider all the possibilities before acting on UDT results

Is the specimen valid?

A valid urine sample has the following:
• Temperature 90-100 F (within 4 minutes of voiding)
• pH 4.5 to 8.5
• Creatinine >20mg/dl
  • <20mg/dl is dilute
  • <5 is not consistent with human urine

Discussing UDT

Before requesting urine, always ask:
• When did you take your last dose? How much?
• In the past week, have you taken any other pain medicine?
• In the past week, have you used any drugs?

*Documentation of this is crucial for interpreting UDT results

Language for introducing drug testing

• “As part of treating [pain] with medications like [X], I order urine tests to get more information about how safe they are for patients.”
• “The test measures a number of medications and drugs that could interfere with your treatment.”
• “This is something I do with ALL patients on these medications.”
• “If I find something unexpected, we’ll talk about it and work together to address it.”

Opioid Metabolic Pathways

- Heroin
  - 6-MAM
  - Morphine
  - Morphine
  - Hydromorphone
  - Oxymorphone
  - Oxycodone

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Ordering Urine Drug Tests

When should I order urine drug tests?

1. Before prescribing controlled substances
2. Regularly throughout treatment
   - For all patients, at least every 6 months
   - More frequently for higher risk patients

Risk factors include: personal or family history of substance abuse, tobacco dependence, mental health disorders, young age (<45), caucasian race, and previous red flag behaviors like requesting early refills, losing prescriptions, obtaining opioids from other sources, or unexpected UDT results.

Which type of test should I order?

Screening Test

- **Method:** Enzyme-based immunoassay (EIA)
- **Logistics:** Inexpensive, Fast, Widely available
- **Results:** Susceptible to false positive & false negative results (see table). Opiate screen not sensitive for semi-synthetic (e.g., oxycodone) or synthetic opioids (e.g., fentanyl).

Confirmatory Test

- **Method:** Gas chromatography/mass spectrometry (GC/MS) or Liquid chromatography & tandem MS
- **Logistics:** More expensive, Takes longer, Often sent-out
- **Results:** Highly sensitive, Highly specific, Specifies drugs within class, Reports concentration even if low (no cut-off)

Table: Quick Guide to Urine Drug Testing

<table>
<thead>
<tr>
<th>Prescribed Opioids</th>
<th>Amphetamines</th>
<th>Barbiturates</th>
<th>Benzodiazepines</th>
<th>Cocaine</th>
<th>Methadone</th>
<th>Opiates</th>
<th>Oxycodone</th>
<th>PCP</th>
<th>Cannabis</th>
<th>Poppy seeds</th>
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<tbody>
<tr>
<td>Buprenorphine</td>
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</table>

2. Higher dose is more likely to yield a + opiate screen. Consider confirmatory test, especially to confirm negative for rx’d drug.
3. Chronic use may result in longer detection times. 6-MAM is pathognomonic for heroin use, detection time is 12-24 hours.
4. Benzodiazepine screen likely positive if alprazolam or diazepam taken, likely negative if clonazepam, lorazepam. Varies by lab.
5. Heavy poppy seed ingestion (3+ bagels) may test positive for opiates—repeat off poppy seeds.
6. Some commonly used medications reported to cause false + results on screening assays are below—order confirmatory test.

Prescription Opioids

- Buprenorphine: tramadol, other opioids.
- Cocaine: none confirmed. Coca leaves or dental use cause rare true +.
- Methadone: diphenhydramine, doxylamine, clomipramine, chlorpromazine, quetiapine, thiopental, valproate, verapamil.
- Opiate: dextromethorphan, diphenhydramine, fluoroquinolones, quinine, rifampin.
- Oxycodone: naloxone, see list for “opiates.”
- PCP: dextromethorphan, diphenhydramine, ibuprofen, tramadol, venlafaxine.
- Cannabis: dronabinol, PPIs. Note that ibuprofen does NOT cause false + using modern tests (previously did).

Screening Test Results (EIA)

- Should be +
- Might be +
- F Potential false +

Confirmatory Test Results (GCMS)

- Should be +
- Might be +
- F Potential false +

Common Detection Time

1-6 days
1-3 days
24 hours
1-3 days
1-3 days
1-3 days
1-2 days
1-3 days
1-4 days
1-3 days
1-3 days
24 hours
24 hours
24 hours
1-3 days
1-3 days
1-3 days