

	<h2>Gold Standard for Urine Drug Testing</h2> <p>Developed by TRMC Pain Management Center Jill Duffy, RN, BC Pam Kennell, RN, BC Heidi Beisch, RN</p>

	<h2>Urine Drug Testing</h2>
	<p>A DIAGNOSTIC tool</p> <p>For an OBJECTIVE test</p> <p>Based on a SUBJECTIVE report of pain</p>

	<h2>Why Urine?</h2>

Compare	
<p style="text-align: center;"><u>Urine</u></p> <ul style="list-style-type: none"> ■ Relative ease of sample acquisition ■ Longer durations of a positive result compared to serum <ul style="list-style-type: none"> - In system 1-3 days or longer ■ Rapid, inexpensive and simple testing 	<p style="text-align: center;"><u>Blood/Serum</u></p> <ul style="list-style-type: none"> ■ Specialized training to obtain sample ■ Narrow window of detection time <ul style="list-style-type: none"> - Hours, not days ■ Time delay in obtaining results <ul style="list-style-type: none"> - May need sent to outside laboratory

Statistics	
<ul style="list-style-type: none"> ■ 87% of American Pain Society member physicians prescribe opioid medication for non-cancer pain. ■ 50% of Americans may use opioids in a manner <u>not</u> prescribed by a health care provider. ■ 8% of family practice physicians use UDTs. 	

Why test in the first place?	
<ul style="list-style-type: none"> ■ Medication compliance ■ Initial diagnosis of drug abuse/addiction issue presentation ■ Adjunct to self report of drug history ■ Requirement for continued treatment ■ Provides accountability for both parties involved 	

	<ul style="list-style-type: none">■ Not to “catch” the patient■ Not to discharge a patient without further investigation■ Not to punish them

	<p>Explain this is a test to improve care by monitoring the use of medications</p>

	Obtaining the specimen
	<ul style="list-style-type: none">■ Careful labeling of the sample container■ Use of temperature sensing containers – measurement within 4 minutes of voiding should fall between 90 to 100 degrees F.■ Urinary pH and creatinine should also be indicated on the results<ul style="list-style-type: none">– Within ranges will increase specimen reliability

Methods of UDT	
Screening Or Immunoassay	Confirmation: Gas Chromatography/ Mass Spectrometry Or High Performance Liquid Chromatography (HPLC)

Step One: Screening	
<ul style="list-style-type: none"> ■ Identifies <i>classes</i> of substances with a high degree of sensitivity ■ Results reported as negative or positive ■ Can be run quickly in the lab or using special testing containers 	

Classes Commonly Tested	
<ul style="list-style-type: none"> • Amphetamines • Barbiturates • Benzodiazepines • Cocaine • Alcohol • Lysergic diethylamide acid 	<ul style="list-style-type: none"> • Methadone • Methaqualone • Opiates • Phencyclidine • Propoxyphene • Tetrahydrocannabinol

	True Positive Screening Results
	<ul style="list-style-type: none">■ Answers whether the substance is in the specimen at a level above the laboratory's cutoff point ■ Does not provide information as to the:<ul style="list-style-type: none">- Length of exposure- Dose amount- Frequency of use

	False Positive Screening Results
	<ul style="list-style-type: none">■ Can occur with cross-reactivity with other compounds in the sample<ul style="list-style-type: none">- Ibuprofen 800 mg TID may show a positive LSD result- OTC Sinus medications may show positive for amphetamines- Amoxicillin has shown positive for cocaine- Amitriptyline or Robitussin may show as opiates

	True Negative Screening Results
	<ul style="list-style-type: none">■ In compliance testing, we are looking for the prescribed medications or their metabolites in the urine sample.■ A negative result may be due to the level of the substance below the threshold limit to report a positive result.<ul style="list-style-type: none">- The patient may not be using the medication or has not recently used it.- May indicate bingeing rather than drug diversion.- Substances are excreted or filtered at individually differing rates.

	False Negative Screening Results
	<ul style="list-style-type: none">■ Technically a negative finding in a sample that is known to contain the substance of interest.■ May be due to equipment or human error upon handling and testing.■ May be due to tampering of the sample by the patient.

	A Urine Drug Screening Test cannot indicate the amount of substance taken, when the last dose was administered, or the source of the substance.

	With any results on the screening test, a dialog with the patient is vital to preserve the therapeutic alliance.

	Step Two: Confirmation with analysis
	<ul style="list-style-type: none">■ Most commonly done using gas chromatography/mass spectrometry (GC/MS)■ Identifies and confirms the presence or absence of a specific drug and/or its metabolites■ Not influenced by cross-reacting compounds■ Virtual 0% false positive rate

	Confirmation
	<ul style="list-style-type: none">■ Specific identification of drugs from several different classes as is the norm for chronic pain patients■ Can help reduce cost, ensure accuracy and improve efficiency.

	Any testing must be used to improve patient care.

Clearing Up Cloudy Issues

Amphetamines

- OTC medications may show positive on immunoassay screen.
- Methamphetamine will show a positive for amphetamine on immunoassay screen.
 - Only with confirmation by GC/MS can a differentiation be determined.

Opiates

- Morphine and codeine are natural opiates. Immunoassay UDT will not determine between the two.
- Semi-synthetic and synthetic opioids, such as oxycodone and fentanyl may not show a reliable positive result on immunoassay UDT.
- Methadone will not show on a screening as an opiate, and would need to be specifically ordered.

Opiates

- Drug metabolism may show unexpected opioids.
 - Large amounts of codeine taken may show trace amounts of hydrocodone on UDT.
 - Prescribed hydrocodone metabolization may show detection of hydromorphone.

Cocaine

- Generally immunoassay is very reliable as there is little that cross reacts.
- May be positive after medical procedures using topical anesthetic.
- Will **not** be positive with local anesthetics such as lidocaine or bupivacaine.

Now we know, what next?

Using the results appropriately

- Identify chronic pain patients at risk for:
 - Misuse
 - Addiction
 - Aberrant drug-related behavior
 - Mood disorders
 - Depression
 - Anxiety

- Require adherence of medication regime
 - Written agreement
 - Patient interview
 - Medication counts
 - Pain diaries or journals

- ### Non-adherent Patients
- Possibilities may include:
 - Adverse effects
 - Forgetting medication doses
 - Incompatibility with lifestyle
 - Confusion about regimen
- Not always related to diversion or drug abuse.

Intervene

- Addiction medicine specialist
- Mental health professional
- Social workers
- Spiritual/Religious leaders

Manage

- Increase monitoring of medication
- Smaller, more frequent, medication refills
- Focus on functioning
- Change medication, type/route/dosing
- Procedures only
- Discharge only after discussion between physician and patient, and after the above have been tried.

References

1. Compton P. Should opioid abusers be discharged from opioid therapy?. Pain Treatment Topics 2008; www.pain-topics.org.
2. Fishman S. Listening To Pain. 2006; Waterford Life Sciences.
3. Heit H, and Gourlay D. Urine drug testing in pain medicine. Journal of Pain and Symptom Management. 2004;27(3):260-267.

	<p>4. Heit H and Gourlay D. Urine drug testing in pain management. <i>Journal of Pain and Symptom Management</i> 2004;27(3):260-267.</p> <p>5. Katz N, Sherburne S, Beach M, Rose R, Vielguth J, Bradley J and Fanciullo G. Behavioral monitoring and urine toxicology testing in patients receiving long-term opioid therapy. <i>Anesth Analg</i> 2003;97:1097-102.</p>

	<p>6. Wasan A, Butler S, Budman S, Benoit C, Fernandez K and Jamison R. Psychiatric history and psychologic adjustment as risk factors for aberrant drug-related behavior among patients with chronic pain. <i>The Clinical Journal of Pain</i>. 2007;23(4):307-315.</p> <p>7. Ziegler P. Treating chronic pain in the shadow of addiction. <i>Emerging Solutions in Pain</i>. 2007.</p>
