

Biological Testing for Substances: Medical and Ethical Considerations

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Biochemical drug testing

- Screening tools vs biochemical drug testing
- Multiple biochemical methods:
 - Urine
 - Blood
 - Hair
 - Saliva
- Screening vs confirmatory drug testing
 - Comprehensive urine drug testing involves screening followed by confirmatory test
 - Confirmatory testing is not always done

Limitations of biochemical drug screening

- False positives

Drug	Drug that could cause false positive on urine drug screen
Opioids	Dextromethorphan (cough syrups), diphenhydramine (Benadryl), certain antibiotics (fluoroquinolones, quinine, rifampin), poppy seeds, verapamil (heart medication)
Amphetamines	Certain antidepressants (bupropion, fluoxetine), labetalol (blood pressure medicine), ranitidine (acid reflux medication)
Benzodiazepines	Sertraline (antidepressant)
PCP	Dextromethorphan, diphenhydramine, ibuprofen
THC (tetrahydrocannabinol)	Nonsteroidal anti-inflammatory drugs (NSAIDs, like ibuprofen), proton pump inhibitors (for acid reflux)

Limitations of biochemical drug screening

- False negatives
 - Higher thresholds of detection -> negative result when a substance is actually present
 - Window of detection
- Confirmatory testing decreases the likelihood for false-positive results
 - Requires additional lab resources, takes longer

Limitations of biochemical drug screening

- Limited evidence that routine urine drug testing improves outcomes or safety
 - Pandemic-related reconsiderations

Historical perspective

- Patient consent

- Ferguson v. City of Charleston

- Partnership between hospital (Medical Univ. of S. Carolina) and law enforcement - 1989
 - UDS obtained without knowledge or consent
 - Results and discharge summaries given to law enforcement -> arrest
 - Supreme Court decision: unconstitutional; in absence of a search warrant this violated Fourth Amendment protection against unreasonable search and seizure
 - Health care providers that act on behalf of the state rather than for their patients breach the ethics of the patient-physician relationship
 - When state hospital employees undertake to obtain evidence of criminal conduct from their patients for the specific purpose of incriminating those patients, patients must be fully informed of their constitutional rights

Screening of pregnant people

- Biochemical testing
 - May be useful in some circumstances
 - Limitations
 - Negative result does not rule out substance abuse
 - False positives
 - Consent should be obtained
 - Universal biochemical drug testing is not recommended in pregnancy
 - Screening with a validated tool is!
- Neonatal screening
 - Urine reflects drug exposure days before delivery
 - Meconium reflects exposure within weeks before delivery

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- Some reasons for drug screening:
 - Monitor for other substances
 - Monitor for diversion – interestingly, diversion has actually been shown to be an unexpected harm reduction strategy – study in Dayton found that people who used unprescribed buprenorphine had lower rates of overdose – demonstrates that buprenorphine needs to be more widely available