

Mother & Baby Substance Exposure Toolkit

Best Practice No. 3

A part of the California Medication Assisted Treatment Expansion Project

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Maternal urine toxicology and the role of explicit/implicit bias in decision-making

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Outpatient, Labor and Delivery, and Screening, Assessment and Level of Care Determination

Overview

Understanding toxicology testing and its limitations is important for providing optimal care to women who use substances during pregnancy. Universal screening via a validated verbal screening tool (see [Best Practice #1](#)) should not be confused with urine or blood toxicology, which historically has been applied inconsistently and has often resulted in a system of race and class-based testing. Thus, toxicology testing should be carefully applied with the intention of improving clinical decision-making, such as informing the pain management approach during the intrapartum period and improving efforts to link the mother with appropriate services and treatment.

Providers and staff should be educated on how explicit or implicit bias may impact their decision to perform biological toxicology testing on a pregnant or laboring woman. Standardization of criteria for toxicology testing may help curb the impact of these biases.

Why we are recommending this best practice

Toxicology testing has a necessary role in the care of women who use substances during pregnancy. The results are useful to encourage dialogue with the patient and can be necessary for clinical decision making. However, the results can also have devastating consequences for the mother and baby when used inappropriately by other agencies and can result in punitive consequences. Furthermore, toxicology results are easily misinterpreted by those who are unfamiliar with the nature and limitations of testing. Limitations of testing include, but are not limited to, the following:

- Many substances may not be detected (false negatives), including synthetic opioids and designer drugs
- Risk of false positives
- Need for confirmatory testing for any positive toxicology result
- Testing does not provide information on severity or duration of use
- Testing can only assess for current or recent use
- Even if results are negative, sporadic use is not ruled out
- A positive urine toxicology does not confirm a substance use disorder (SUD) any more than a negative result rules it out

The evidence suggests that hospital staff are more likely to perceive Black women as being at higher risk of using drugs, even though white women have similar rates of illicit drug use. Black women are therefore more likely to be tested, and more likely than white women to face punitive consequences such as having their children placed in protective care.

Even objective medical criteria for determining who should have toxicology testing may be

subject to inadvertent bias. For example, “inadequate prenatal care” is a common, and often necessary, criterion for toxicology testing. If this criterion is used as a prompt for toxicology, providers and nurses must understand that a variety of factors other than substance use may influence whether a woman can remain in care, including lack of insurance, inability to take time off of work, and lack of culturally appropriate care. All these factors are more likely to impact poor women and women of color.

Strategies for Implementation

- Ensure policies that delineate criteria for toxicology testing do not directly or indirectly target low income women and women of color.
- Behaviors (e.g signs of acute intoxication) are more important as prompts for toxicology screening than selective indicators of risk.
- Each institution should be aware of the sensitivity and specificity of the tests used at their facility.
- Everyone should be familiar with the current laws and regulations for their county and state. Each institution should have the following:
 - A clear policy, consistent with state and federal law, regarding what constitutes grounds for reporting to child protective services (CPS)
 - Education for all staff members who work with pregnant women about this policy
 - Routine reviews to ensure that the policy is being applied consistently and appropriately
- Every patient must be able to give informed consent. Informed consent requires a clear explanation of why testing is necessary, the benefits of testing, and risks of testing including the potential legal, criminal, or child welfare consequences. If the provider or nurse is unable or unwilling to thoroughly explain the typical course of events after a positive drug test at their facility, a reasonably prudent patient would not have sufficient information to make an informed decision. Additional talking points are included in the Resources section of this Best Practice.
- Every patient has a right to withhold consent and coercive language should not be used.
- Multiple biological substances can be used for toxicology testing, including urine, saliva, blood, hair, and meconium. Urine is often used to test pregnant women as the filtering action of the kidneys allows detection of smaller quantities for a longer period than blood.
- Toxicology tests generally fall into two types: screening tests and confirmatory tests.
- It is essential to confirm unexpected results from toxicology screening tests. If the result of the screening test matches an expected result, it is usually not necessary to

obtain confirmatory testing. Examples of unexpected results might include:

- A patient tests positive for a substance that she denies taking
 - A patient tests negative for a substance that is prescribed, and she indicates she is taking regularly
- Toxicology testing does not provide information on how recently someone used a substance or the quantity they used. Toxicology screening tests are qualitative and only indicate the presence/absence of a substance. Confirmatory testing often does report a quantitative level, but this should not be used to infer how much a woman is using a substance. Many factors are involved, and any value over the cutoff level should be a qualitative positive unless evaluated by a medical review officer.
 - Urine drug toxicology on admission to the hospital need to be monitored for timing of the sample related to administration of intrapartum pain medications. Fentanyl can lead to false positive opioid results. Ephedrine and vasopressin can lead to false positive amphetamine.
 - For an excellent review of drug screening immunoassays for clinicians to become proficient in understanding and interpretation of results, please see Nelson ZJ et al. They also provide a full description of false positives and false negatives.

	Screening Tests	Confirmatory Tests
Methodology	Usually enzyme-linked immunosorbent assay (ELISA) like pregnancy strep tests.	Gas chromatography–mass spectrometry (GC/MS); Liquid chromatography–mass spectrometry (LC/MS); others
Accuracy	Can produce false positives and negatives.	Very sensitive to the drug being tested for but may have difficulty with synthetic versions.
Cost	Relatively inexpensive	More expensive than ELISA
Speed	Can be done at point of care thus providing relevant information at time of visit.	Needs to be sent off resulting in delays in making clinical decisions.

Toxicology Screening vs. Confirmatory Testing

Resources

1. Maternity Drug Policies by State.
2. Toxicology FAQs.

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Dr. Main is the Medical Director of the California Maternal Quality Care Collaborative (CMQCC) and has led multiple state and national quality improvement projects. He is also the Chair of the California Pregnancy-Associated Mortality Review Committee since its inception in 2006. For 14 years, he was the Chair of the OB/GYN Department at California Pacific Medical Center in San Francisco. He is currently clinical professor of Obstetrics and Gynecology at Stanford University. Dr. Main has been actively involved or chaired multiple national committees on maternal quality measurement. In addition, he helps direct a number of national quality initiatives with ACOG, the CDC and Maternal Child Health Bureau (HRSA) including the multi-state AIM project. In 2013, Dr. Main received the ACOG Distinguished Service Award for his work in quality improvement.

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Holly Smith is a certified nurse-midwife with 20 years' experience in diverse practice settings. She is the project manager for the CMQCC/CPQCC Mother and Baby Substance Exposure Initiative. Previous to this role, she was a the lead editor for the CMQCC Toolkit to Support Vaginal Birth and Reduce Primary Cesareans, and a clinical lead for the CMQCC Collaborative to Support Vaginal Birth and Reduce Primary Cesareans, a large-scale quality improvement project with over 90 California hospitals. Her primary role as clinical lead focused on assisting southern California hospitals with the implementation of evidence-based practices to reduce cesarean. She is a hospital coach and steering committee member for the American College of Nurse-Midwives' Reducing Primary Cesareans Project, and expert consultant on various national and state quality improvement and health policy initiatives. Additionally, she chairs the Health Policy Committee of the California affiliate of the American College of Nurse-Midwives and is a health policy consultant to the California Nurse-Midwives Foundation.

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