

Mother & Baby Substance Exposure Toolkit

Screening, Assessment
and Level of Care
Determination

A part of the California Medication Assisted Treatment Expansion Project

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Use validated verbal screening and assessment tools to evaluate all pregnant women for substance use disorders

Best Practice No. 1

Outpatient, Labor and Delivery, Nursery/NICU, and Screening, Assessment and Level of Care Determination

Overview

Implement universal screening for substance use disorder (SUD) with a standardized, evidence-based screening tool at all locations that provide medical care to pregnant women. A universal screening tool for self-reporting of opioid use and identification of risk for opioid use disorder (OUD) should not be confused with toxicology testing (refer to [Best Practice #3](#) for more on toxicology testing).

Why we are recommending this best practice

Identification of women with SUD as early as possible in pregnancy is critical in connecting them to treatment. Treatment for SUD, particularly OUD, during pregnancy results in better outcomes for mom and for her newborn.

Drug addiction affects all racial, ethnic, and social groups. Universally screening all women minimizes the potential for implicit bias that can occur when providers use subjective risk factors to determine who should be screened and may also decrease the stigma associated with SUD and screening. Universal screening at the time of entry into prenatal care allows more time to intervene and mitigate the harms associated with SUD in pregnancy and to stabilize the home environment for newborns. If an individual screen is positive for risk of OUD or other SUD, a validated assessment tool (a deeper evaluation intended to solidify a diagnosis and severity of a condition) should be administered to determine the presence and severity of the SUD. It is important to remember that substance use is not synonymous with addiction.

Strategies for Implementation

- Educate staff on how to administer a validated screening tool and the importance of universal screening in order to reduce implicit bias.
- Initial screening for risk takes little time and can be done at many points within care. Validated screening tools include the NIDA quick screen, 4Ps Plus, and the CRAFFT (for women and adolescents 12-26 years old). Refer to a full list of validated screening tools in the Resources section of this Best Practice.
- Screening should be performed at intake of prenatal care to identify needs as early as

possible and at regular intervals thereafter.

- If screening is positive, use a validated verbal assessment tool to establish the diagnosis and severity of an actual SUD. Ideally, this assessment should immediately follow a positive screen. Examples include, but are not limited to, AUDIT-C (alcohol specific), ASSIST (Alcohol, Smoking, and Substance Involvement Screening Test), and DAST-10 (drug use). For descriptions of these and other validated assessment tools, refer to the AIM Opioid Screening Tools in the Resources section of this Best Practice.
- A positive screening should stimulate a brief intervention and referral to appropriate treatment using resources within your setting and community. *Determining severity of disease is critical in referring to the correct level of care* (refer to [Best Practice #2](#)).
- Screen all women for coerced sex and the possibility of human trafficking. An Adult Human Trafficking Screening Tool has been created by the US Department of Health and Human Services. Please also see a commentary from *The Journal of Ethics* in the References section of this Best Practice.
- Inquire about polysubstance use. If smoking tobacco or drinking alcohol, provide brief intervention and referral to services. Encourage cessation and refer to cessation services to decrease risk for a variety of adverse pregnancy outcomes and to decrease severity of neonatal abstinence syndrome (NAS). If drinking alcohol, counsel the patient that there is no known safe amount of alcohol during pregnancy. Inform patient/family that alcohol is the leading known cause of birth defects.



Kayla

Kayla comes to her local community health clinic and asks to be seen for her ongoing problems with back pain and anxiety. Her history elicited the need for a routine pregnancy test. Kayla starts crying when she finds out she is pregnant and it is unclear at first what this means, but through continued discussion the physician realizes that although Kayla didn't plan on getting pregnant now, she definitely wants to continue the pregnancy and is excited about this new possibility.

The physician asks Kayla if it would be ok to ask some questions about Kayla's personal and family history. She explains that they ask these questions of all women who are pregnant to make sure they get the best possible care during pregnancy. With Kayla's permission, the physician reviews Kayla's medical, social, and family histories; she includes an evidence-based screening tool for substance use disorder that takes only a few minutes to administer. It was only through this interview that the physician identified Kayla as a person with possible SUD and was subsequently able to start her on the best possible care pathway to meet her unique needs.

Resources

1. AIM Opioid Screening Tools.
2. SAMHSA-HRSA Center for Integrated Health Solutions.
3. Council on Patient Safety Women's Health Care Safety Bundle for Obstetric Care for Women with Opioid Use Disorder.
4. Clinical Guidance for Treating Pregnant and Parenting Women with Opioid Use Disorder and Their Infants. SAMHSA.
5. Adult Human Trafficking Screening Tool and Guide.
6. Accuracy of Three Screening Tools for Prenatal Substance Use.
7. ACOG Postpartum Toolkit (see screening tools in Table 1 of the Substance Use Disorder section of this toolkit).

References

1. ACOG committee opinion No 711: opioid use and opioid use disorder in pregnancy. *Obstet Gynecol.* 2017; 130: e81-94. doi: 10.1097/AOG.0000000000002235.
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Dr. Carrie Griffin is a family medicine physician who specializes in maternal, child and reproductive health and practices in Humboldt County. She completed her residency at Maine Dartmouth Family Medicine Residency and fellowship at the University of New Mexico. Perinatal substance use is her clinical area of interest and expertise; she currently serves as a mentor for CMQCC's Mother Baby Substance Exposure initiative and the Humboldt RISE project, a community initiative to promote screening and case management services for women with substance use disorders in pregnancy.

Once substance use is identified, perform a brief intervention and referral to appropriate treatment (SBIRT)

Best Practice No. 2

Outpatient, Labor and Delivery, Nursery/NICU, and Screening, Assessment and Level of Care Determination

Overview

Screening, Brief Intervention, and Referral to Treatment (SBIRT) is a comprehensive, evidence-based approach to the identification and delivery of services for a variety of conditions including substance use disorder (SUD). Once substance use is identified, perform a brief intervention and refer to the treatment most appropriate for a patient's needs. A brief intervention is a patient-centered, structured conversation that utilizes the principles of Motivational Interviewing (refer to [Best Practice #8](#)), in order to motivate the person to progress through the stages of readiness toward concrete changes that address their SUD. Brief interventions have been shown to improve outcomes for patients with substance use, and formal treatment is required for those with a diagnosable SUD.

Why we are recommending this best practice

SBIRT is a validated process for addressing SUD. Each facility should identify resources in their community to assist women who screen positive and include a warm hand-off to a care navigator to help connect them with appropriate resources.

Strategies for Implementation

- Identify and train the appropriate staff in the use of screening and brief intervention techniques. This can include sample scripting for staff around screening itself and how to respond to positive screens – this is important for any type of screening completed. Refer to [Best Practice 7](#) for more information on Trauma-Informed Care and how to avoid re-traumatization.
- Have a list of resources or informational packets available for each American Society of Addiction Medicine (ASAM) level of care to support women at all levels of risk.
- Establish a clear system and workflow for positive, validated screening and/or assessment tools.
- Please see the Resources section of this Best Practice for information on risk (“AIM Opioid Screening Tools”).

- Low risk patients can receive brief advice related to their identified substance.
 - Moderate risk patients should have a brief intervention
 - As described in [Best Practice # 1](#), after a positive screen for SUD, use a validated assessment tool to determine the presence and severity of the SUD followed by the identification of and referral to the appropriate level of care that matches the severity of the patient's needs. The state of California mandates that all counties with Drug Medi-Cal Organized Delivery System (DMC-ODS) contracts use the ASAM criteria to determine the appropriate level of care for an individual with SUD. The ASAM Co-triage or the ASAM Continuum clinical decision supports are ideal assessment tools to meet that requirement.
- Other than the Co-triage, which is designed as a ten-minute provisional evaluation tool, each assessment typically takes an hour to complete. Identifying clinic personnel who can be trained to effectively administer the chosen screen, assessment, and level of care evaluation prior to SBIRT implementation will streamline workflow.
 - Identify local options for each level of care, including the full spectrum of office-based treatment (level 1), methadone clinic management (level 1 OTP), intensive outpatient centers (levels 2.1 and 2.5), residential treatment centers (levels 3.1, 3.3, 3.5, and 3.7) and medically managed inpatient treatment (level 4). Please see the Resources section of this Best Practice for the SAMHSA treatment locator tool. For more on levels of care, please refer to the ASAM CONTINUUM in the Resources section of this Best Practice.
 - Referral sites may be any of the above depending on the level of care determined to be most appropriate.



Kayla

Kayla's screen is positive for risk of substance use disorder, and she has shared that she is using opioid pain medications for her back pain, marijuana for her anxiety, and smoking cigarettes. While you are talking, she takes a pack of cigarettes out of her purse and throws it in the trash. She tells you that she knows smoking isn't good for her baby, and she is going to quit right now. She explains that she knows she should stop everything, but she needs the pain medication and marijuana to manage her back pain and anxiety, especially since pregnancy will probably make her back pain worse.

The physician applauds Kayla's desire to make healthy choices for herself and her baby. She explains that all medications women take during pregnancy may have some effects on the baby and that there are treatments available for women who have become dependent on opioids; these treatments not only help mom feel better but are safer for developing babies. She explains that abruptly stopping opioids suddenly can be dangerous for her baby. She asks if Kayla would like to meet with Hannah (a social worker), who can help her set up an appointment to talk about treatment, as well as assist with any other needs Kayla may have during her pregnancy.

Resources

1. SAMSHA'S guide to SBIRT.
2. ASI (Addiction Severity Index) Sample.
3. ASAM Continuum - Guide to Levels of Care for Substance Use Treatment.
4. NNEPQIN Toolkit for Perinatal Care of Women with Substance Use Disorders. Chapter 3 on SBIRT.
5. SBIRT Oregon's online curriculum guide to teaching and using SBIRT.
6. AIM Opioid Screening Tools.
7. Behavioral Health Treatment Services Locator.

References

1. Wright TE, Terplan M, Ondersma SJ, et al. The role of screening, brief intervention, and referral to treatment in the perinatal period. Am J Obstet Gynecol. 2016; 215(5):539-547. doi:10.1016/j.ajog.2016.06.038.

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

Best Practice No. 3

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.

References

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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.

Scott Haga

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Scott Haga is Senior Consultant wiht Health Management Associates and is a passionate patient advocate with a focus on motivational training, evidence-based treatment, collaboration and tackling the national opioid crisis head-on. He is an experienced medical provider who co-founded and co-led an interdisciplinary complex care intervention for high frequency emergency department utilizers. He has been recognized as a subject matter expert on addiction, medication assisted treatment for substance use disorders, and building well-functioning interdisciplinary treatment teams.

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Create a prenatal checklist for care of women with opioid use disorder

Best Practice No. 4

Outpatient and Screening, Assessment and Level of Care Determination

Overview

Create a flow chart and/or checklist of care steps for antenatal care of women with opioid use disorder (OUD). Refer to the example below and an additional example in the Resources section of this Best Practice.

Why we are recommending this best practice

A checklist will help providers remember the many steps involved in the antenatal care of women and families with OUD. While these services and activities would normally be addressed over the course of prenatal care, they may need to be compressed depending on when the woman presents for care. Referenced are examples from the Illinois Perinatal Quality Care Collaborative and the Northern New England Perinatal Quality Improvement Network.

Strategies for Implementation

Collaborate with health care team members to adapt a written checklist that is specific for your site of care.

OUD Clinical Care Checklist (Adapted for CA)



Checklist Element	Date	Comments
Antepartum Care		
Counsel on MAT for OUD and arrange appropriate referrals		
Counsel and link to behavioral health counseling /recovery support services		
Social work consult or navigator who will link patient to care and follow up		
Obtain recommended lab testing- <ul style="list-style-type: none"> HIV / Hep B / Hep C (if positive viral load & genotype) Serum Creatinine/ Hepatic Function Panel 		
Institutional drug screening policies and plan for testing reviewed		
Urine toxicology testing for confirmation per policy (consent required)		
Discuss Narcan as a lifesaving strategy and prescribe for patient / family		
Neonatology/Pediatric consult provided, discuss NAS, engaging mom in non-pharmacologic care of opioid exposed newborn, and plan of safe care.		
Child Protective Services policies reviewed, discuss mom/baby safe discharge plan		
Screen for alcohol/tobacco/non-prescribed drugs and provide cessation counseling		
Screen for co-morbidities (ie: mental health & domestic violence)		
Consent for obstetric team to communicate with MAT treatment providers		
Consider anesthesia consult to discuss pain control, L&D and postpartum		
Third Trimester		
Repeat recommended labs (HIV/HbsAg/GC/CT/RPR)		
Ultrasound (Fluid/Growth)		
Urine toxicology with confirmation (consent required), and review policy		
Review safe discharge care plan and DCFS process		
Patient Education: OUD/NAS, participating in non-pharmacologic care of the opioid exposed newborn, including breastfeeding, and rooming in.		
Comprehensive contraceptive counseling provided and documented		
During Delivery Admission		
Social work consult, peds/neonatology consult, anesthesia consult		
Verify appointments for support services (MAT/Behav Health/ Recovery Services)		
Confirm Hep C, HIV, Hep B screening completed		
Discuss Narcan as a lifesaving strategy and prescribe for patient / family		
Provide patient education & support for non-pharmacologic care of newborn		
Review plan of safe care including discharge plans for mom/infant		
Schedule early postpartum follow-up visit (within 2 weeks pp)		
Provide contraception or confirm contraception plan		

ILPQC OUD Clinical Care Checklist (adapted for CA)

Deep Dive

Checklists come in many forms: some for use in emergencies, some for use prior to surgery, and some simply as reminders for the supermarket. A prenatal checklist serves both as an ongoing set of reminders and as documentation of important tasks completed. A checklist, such as the one above, is central to the care of a complex patient with many external consultations over a long period of time, and a pregnant woman with substance use disorder is one of the most challenging to care for. A provider must navigate special laws and unfamiliar regulations, co-manage with other key providers, order different panels of blood tests, approach building communication and developing trust differently, and provide education on topics not usually covered in prenatal care. Examples of the latter include special plans for labor pain management, preparation for neonatal substance withdrawal, and most important of all, developing a Plan of Safe Care (POSC) for both the baby and mother.

The Prenatal Checklist provides the central direction for the team's actions in antenatal care. It belongs front and center in the prenatal record and should be reviewed at

every visit by providers, staff, and the patient. This toolkit provides several examples. Through small tests of change, modifications can be made to the example checklists until it meets the needs of patients at the care site. Follow up at the postpartum visit should include questions about what the patient thinks could be improved—no checklist is ever a final product!

Resources

1. ILPQC MNO-OB OUD Protocol.
2. ILPQC OUD Clinical Care Checklist.
3. NNEPQIN Opioid Use Disorder Clinical Pathway.

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Identify substance-exposed newborns

Best Practice No. 5

Nursery/NICU and Screening, Assessment and Level of Care Determination

Overview

- Substance use disorder (SUD) during pregnancy—whether involving illicit, legal, or prescription drugs—is an issue critical to the health of mothers and newborns, and the incidence is increasing in all socioeconomic groups. The examples included below demonstrate the multitude of exposures for mothers, fetuses, and newborns for which appropriate screening (verbal, written), or biologic testing exist.
- The following are some of the substances and syndromes associated with maternal use and/or in utero exposure: opioids (neonatal abstinence syndrome), nicotine, alcohol (fetal alcohol syndrome), methamphetamine, cocaine, serotonin-synaptic reuptake inhibitor (SSRI), serotonin-norepinephrine reuptake inhibitor (SNRI), and marijuana.

Identifying substance exposure during pregnancy requires effective communication within the multidisciplinary team caring for the mother/baby dyad, the best screening methods and assessments to convey information on possible effects, and mobilization of available inpatient, outpatient and community resources to promote good health and bonding.

Why we are recommending this best practice

- Newborn selective (i.e., risk-based) screening policies, including toxicology testing, should be developed in conjunction with the policies of the maternal care team to support a family-centered approach to identification and treatment. These policies should be consistently applied to limit potential bias.
- The results of maternal substance use screening and biological toxicology testing with confirmation provide important information to guide newborn health care providers on appropriate management, specifically if the newborn is demonstrating symptoms consistent with NAS.

Strategies for Implementation

- We recommend that all hospitals with maternity services maintain updated policies and procedures for newborn selective (risk-based) screening policies, based on a family-centered approach which includes the results of maternal screening for substance use (refer to [Best Practice #1](#) for more information on maternal screening).

- Risk-based screening may consist of items from a detailed prenatal history (including inquiries into prescription and nonprescription drug use), validated maternal SUD screening questionnaires, maternal symptoms, and newborn signs of withdrawal (refer to the References and Resources in this Best Practice for more details).
- Maternal risk is based on the care team's interpretation of verbal screening and, when appropriate, toxicology testing for each patient. If maternal toxicology testing or treatment history has been confirmed, testing of the newborn may not be clinically necessary; however, it is often requested by external agencies such as child protective services (CPS). Education of CPS about the validity of other information can avoid unnecessary and in appropriate use of screening resources.
- Universal biological toxicology testing for the newborn is not recommended, as the specific maternal situation will guide the approach to the newborn.
- The policies for newborn biological toxicology testing (e.g., of urine, meconium, or umbilical cord samples) should reflect a common understanding or written collaborative agreement from each of the following groups: obstetric and newborn medical and nursing staff, hospital-based social work and risk management, and the local/county CPS office.
- Newborn biological toxicology testing may be warranted in certain instances including but not limited to:
 - Mother with limited or no prenatal care
 - Maternal symptoms of drug intoxication or withdrawal that are otherwise unexplained
 - Newborn signs and symptoms of potential substance exposure (i.e., withdrawal) that are otherwise unexplained
- Consent for inpatient neonatal drug testing, may not be required for the purposes of guiding healthcare interventions and follow-up after discharge, and may depend on state specific regulations. However, each healthcare facility should develop its own policy given that most state regulations leave the decision about who should be tested to the health-care provider. Local CPS can neither require testing nor dictate the method of testing in the absence of specific state or federal regulatory requirements (i.e., it may be covered under the facility's general consent).



Baby M

Kayla's opioid use was identified during prenatal care and confirmed in Labor and Delivery through urine testing. This information was communicated to Baby M's providers and prompted them to communicate early with Kayla and to provide her with information on his risk of developing NAS and the potential complications that could arise with a small for gestational age newborn. Baby M's providers knew the importance of establishing a non-judgmental relationship with Kayla and by doing so were able to discuss her prenatal screening results with her, precluding the need to conduct further biological testing to screen Baby M for substance exposure. However, in some medical systems, testing may still be required. If biological testing is performed, urine will give the fastest result but reflects exposure in the prior few days. Meconium and umbilical cord testing will reflect exposure up to several months prior.

Resources

1. State of Vermont Guidelines for Screening for Substance Abuse During Pregnancy.

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Implement selective newborn biological toxicology testing

Best Practice No. 6

Nursery/NICU and Screening, Assessment and Level of Care Determination

Overview

Newborn toxicology testing is an important identification tool. However, it is limited by testing sensitivity and timing requirements.

Why we are recommending this best practice

- The incidence of substance use in pregnancy is difficult to quantify. Maternal screening using validated surveys, and when necessary, toxicology testing in pregnancy may still underrepresent the true incidence.
- If in utero substance exposure has been identified from either prenatal history (including inquiries into prescription and nonprescription drug use) or maternal toxicology testing, this information is vital for guiding assessment and treatment options and may lead to improved outcomes for mothers and newborns.
- If maternal toxicology testing or treatment history has been confirmed, testing of the newborn may not be clinically necessary; however, it is often requested by external agencies such as child protective services (CPS). Education of CPS about the validity of other information can avoid unnecessary and in appropriate use of screening resources.
- Newborn health care providers should be provided with information on the usefulness and limitation of the birth center's biological toxicology testing and the availability/appropriateness of confirmatory testing.

Strategies for Implementation

- When the information would influence healthcare treatment, Selective biological toxicology testing should be considered for newborns when diagnostic information about the mother is limited or not available, or when the clinical picture indicates risk for in utero exposure, including but not limited to:
 - Mother with limited or no prenatal care
 - Maternal symptoms of drug intoxication or withdrawal that are otherwise unexplained
 - Newborn signs and symptoms of potential substance exposure (i.e., withdrawal) that are otherwise unexplained

- Hospital policies and procedures should include protocols that would trigger newborn biological toxicology testing.
- Toxicology testing is limited by substance levels (concentrations) and timing. Therefore, samples should be collected and sent for analysis as soon as possible after delivery.
- Review available biological toxicology testing methods at each birth center. Traditionally, urine immunoassay has been used as the initial screen, and multiple commercial antibodies are validated.
- For certain substances, immunoassay-based urine toxicology testing is a reliable method with rapid turnaround time. For opioid exposure, routine opioid testing panels usually only detects morphine, codeine, and heroin metabolites. Synthetic opioids such as methadone, oxycodone, fentanyl, buprenorphine, etc. may require more specific testing.
- A newborn who has a biological toxicology test with unexpected positive results should have confirmatory testing (gas chromatography-mass spectrometry) and/or confirmation of drug presence by a more time specific test sample (i.e., meconium, umbilical cord).
- Providers should be aware of false-positive drug testing from common maternal medications including antihistamines, antidepressants, antibiotics, decongestants, analgesics, antipsychotics, and over-the-counter products (See table below).
- Due to assay limitations, a negative biological toxicology result does not represent an absence of in utero substance exposure, specifically if the newborn exhibits clinical signs consistent with neonatal abstinence syndrome (NAS) and all other diagnoses have been appropriately ruled out.
- A positive biological toxicology result, in and of itself, does not represent child abuse or neglect. Hospitals must ensure that the multidisciplinary team caring for mothers and newborns includes social workers trained in care and treatment resources for affected families. Care should be taken to ensure that policies which delineate criteria for toxicology testing do not directly or indirectly target low income women and women of color (refer to [Best Practice #3](#) for more information on this).

	Amphetamine/ Methamphetamine	Benzodiazepine	Barbiturate	Phencyclidine (PCP)	Methadone
Bupropion	X				
Dextromethorphan				X	
Diphenhydramine					X
Doxylamine					X
Fioricet/Fiorinal			X		
Labetalol	X				
Metformin	X				
Promethazine	X				
Quetiapine (≥ 125 mg)					X
Sertraline (150 mg or >)		X			
Trazadone	X				
Venlafaxine				X	

*Source: Kirsten Harter, PharmD (Zuckerberg San Francisco General Hospital). Reproduced with permission.

Commonly prescribed medications in obstetrics that may result in false positives

Resources

1. State of Vermont Guidelines for Screening for Substance Abuse During Pregnancy.
2. IDPH Decision Tree for Identifying Newborns at Risk for Prenatal Substance Exposure Decision Tree (see page 22).

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