City and County of San Francisco

Department of Public Health
Behavioral Health Services

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Guidelines for Interpreting Drug Testing Results in Non-Medical Settings

Key Messages

- **Positive or indeterminate drug testing results require medical expertise for accurate interpretation.** By partnering with medical experts, non-medical professionals can ensure that test results are used in a way that supports individuals and families navigating substance use recovery.
- Screening tests (also called immunoassay tests) are prone to false positive and false negative results and should **be followed by a confirmatory test if positive**. Confirmatory testing is essential if test results will be a factor in high-stakes decisions.
- **Drug testing results alone cannot determine return to substance use** and therefore should not be the sole factor in high-stakes decisions regarding custody, legal status, administrative discharge from programs, or treatment requirements.

Scope: This Guideline for Interpreting Drug Testing Results in Non-Medical Settings is intended to provide a framework to guide non-medical professionals in appropriately utilizing and interpreting drug tests. The intended audience includes:

- Child welfare professionals
- Family court judges and attorneys
- Social workers
- Probation officers
- Service or treatment settings that utilize non-medical professionals
- Other professionals involved in cases related to substance use and recovery

Background: Drug testing is widely used in clinical and legal settings to assess substance use and are often interpreted by non-medically trained staff. Misinterpreting drug test results can have serious and lasting consequences, including disrupting recovery efforts and contributing to unnecessary family separation.

Definition:

Appropriate medical professional: A licensed medical professional trained to interpret drug testing results. This may include physicians or advanced practice providers who have substance use training, addiction specialist, medical director of a clinical toxicology laboratory or a medical review officer.

Types of Drug Test

- Drug testing should only be completed if there is a clear plan for what to do with the results.
- **Screening** tests are rapid immunoassays that provide **preliminary** results. They are most useful when negative.
    - A positive screening test requires confirmation by a confirmatory test.
    - Screening tests can include point of care tests (ie those used in residential treatment programs, such as urine drug screens) or can be lab-based immunoassays.
    - Common specimen types include urine or saliva
    - Higher risk of false positives and false negatives compared to confirmatory tests
- **Confirmatory tests** (e.g., gas chromatography-mass spectrometry or liquid chromatography-mass spectrometry) are laboratory-based and provide definitive confirmatory results. Common specimen types include urine or blood.

Clinical Laboratory Improvement Amendments (CLIA) Certification

- It is the responsibility of the performing agency to obtain a CLIA certification in order to perform testing on human specimens. Typically, toxicology point of care testing falls under the category of "CLIA-waived" tests which are low complexity tests that require CLIA-waved certification.
- It is recommended agencies use FDA-approved point of care tests.
- For more information on CLIA certification in California, visit the California Department of Health website.

Key Considerations in Test Interpretation and Application

1. **Screening tests can produce inaccurate results**
    a. Screening tests rely on antibody-antigen reactions, and multiple substances can trigger an inaccurate positive result. False positives occur and should be ruled out before making conclusions.
    b. There are many examples of prescribed or over-the-counter medications causing false positives. Example: Trazodone, a medication used for insomnia, can cause a false positive for amphetamines on **screening** tests, the confirmatory test would be negative if the only substance consumed was trazodone.
    c. Ideally, confirmatory testing should be completed for positive results. They especially should be prioritized in situations where results are unexpected or the consequences for the individual are significant.
2. **Positive confirmatory test results can have multiple explanations.**

a. New unprescribed substance use
b. Prolonged metabolism of prior substance use
c. Administration of a drug in a medical setting (e.g., fentanyl given before surgery)
d. Prescription or over the counter medication use (e.g., prescribed amphetamines for ADHD)
e. Positive confirmatory testing should be reviewed by an appropriate medical professional (see above definition).
    i. Proper interpretation requires knowledge of pharmacokinetics, cross-reactivity, and individual metabolism.
    ii. Misinterpretation by non-medical professionals can lead to unwarranted interventions.

3. Drug testing should not be the sole determinant in high-stakes decisions.
a. They do **not** provide a full picture of an individual's substance use history.
b. Consideration should be given to **clinical and behavioral factors** in assessing substance use and recovery status.
c. An appropriate medical professional (see above definition) should always be consulted when there is uncertainty about results.

4. Urine fentanyl test results can remain positive for extended periods.
a. Studies indicating fentanyl is detectable for only 1–3 days are based on **single, medically administered doses** and do not reflect **chronic use**.
b. In individuals with chronic fentanyl use, fentanyl and its metabolite (norfentanyl) can remain detectable for **up to 250 days** [1,2,3] depending on factors such as frequency of use, body composition, and metabolism
    i. Drug levels in the body can go up and down, sometimes just above or below the amount that shows up on a test—so results may switch between "positive" and "negative" even without new use.
    ii. While there's no exact number that proves whether someone has used again, levels below 10 ng/mL are generally considered reassuring and unlikely to indicate new use—especially if there are no other signs suggesting otherwise.

5. Laboratory cutoff levels vary and impact test results.
a. Screening tests vary in the detection ranges they set for each substance.
b. For confirmatory testing, different laboratories set different thresholds. For example, laboratory thresholds for detecting fentanyl can range from **0.5 ng/mL to 4 ng/mL**. **Lower cutoff levels** may detect residual fentanyl from past use, while **higher thresholds** reduce unnecessary concerns and misinterpretation.

6. Additional testing modalities, such as hair testing, have limitations.
a. Hair testing **cannot determine when, how much, or how often** a substance was used, and therefore is **rarely** helpful in determining clinically relevant substance use.

b. **Racial and ethnic disparities exist in hair testing:** Darker, coarser hair retains drugs at significantly higher levels than lighter, finer hair, leading to potential bias in results.

Guidance for Discussing Results with Person

- **Use non-judgmental language** such as 'tested positive for X' or 'tested negative for Y'. Avoid stigmatizing language such as 'dirty' or 'clean'.
- **If the test shows unanticipated findings**, have an open discussion with the person before making conclusions. Consider the setting you're discussing the results in (ex. If they are in a congregate setting or with family members, consider discussing when the person is alone).

Resources

- California Department of Public Health
- Center for Medicare and Medicaid Services
- SAMHSA Clinical Guidelines for Urine Drug Testing
- American Society of Addiction Medicine (ASAM) Drug Testing Guidance
- Expert review provided by addiction medicine physicians, toxicologists, public health professionals, and representatives of child welfare and Family Treatment Court

Citations

1. California Department of Public Health. Laboratory Field Services. Accessed 12/30/2025. https://www.cdph.ca.gov/Programs/OSPHLD/LFS/Pages/CLIA.aspx
2. Centers for Medicare and Medicaid Services. CLIA Certification. Accessed 12/30/2025. https://www.cms.gov/regulations-and-guidance/legislation/clia/downloads/howobtaincliacertificate.pdf
3. Kiefer MK, Cowen J, Hinely KA, Rood KM. Prolonged detection of urine norfentanyl in individuals enrolled in a medication for opioid use disorder in pregnancy and postpartum program: a case series. AJOG Glob Rep. 2024 Jan 19;4(2):100313. doi: 10.1016/j.xagr.2024.100313. PMID: 38524188; PMCID: PMC10957421.
4. Wanar A, Saia K, Field TA. Delayed norfentanyl clearance during pregnancy. Obstet Gynecol 2020;136: 905–7.
5. Huhn AS, Hobelmann JG, Oyler GA, Strain EC. Protracted renal clearance of fentanyl in persons with opioid use disorder. Drug Alcohol Depend 2020;214:108147. 10.
6. Moeller KE, Kissack JC, Atayee RS, Lee KC. Clinical Interpretation of Urine Drug Tests: What Clinicians Need to Know About Urine Drug Screens. Mayo Clin Proc. 2017;92(5):774-796. doi:10.1016/j.mayocp.2016.12.007