BlueCross BlueShield of Alabama

Name of Policy:
Drug Testing

Policy #: 566
Category: Laboratory

Latest Review Date: December 2016
Policy Grade: B

Background/Definitions:

As a general rule, benefits are payable under Blue Cross and Blue Shield of Alabama health plans only in cases of medical necessity and only if services or supplies are not investigational, provided the customer group contracts have such coverage.

The following Association Technology Evaluation Criteria must be met for a service/supply to be considered for coverage:

1. *The technology must have final approval from the appropriate government regulatory bodies;*
2. *The scientific evidence must permit conclusions concerning the effect of the technology on health outcomes;*
3. *The technology must improve the net health outcome;*
4. *The technology must be as beneficial as any established alternatives;*
5. *The improvement must be attainable outside the investigational setting.*

Medical Necessity means that health care services (e.g., procedures, treatments, supplies, devices, equipment, facilities or drugs) that a physician, exercising prudent clinical judgment, would provide to a patient for the purpose of preventing, evaluating, diagnosing or treating an illness, injury or disease or its symptoms, and that are:

1. *In accordance with generally accepted standards of medical practice; and*
2. *Clinically appropriate in terms of type, frequency, extent, site and duration and considered effective for the patient's illness, injury or disease; and*
3. *Not primarily for the convenience of the patient, physician or other health care provider; and*
4. *Not more costly than an alternative service or sequence of services at least as likely to produce equivalent therapeutic or diagnostic results as to the diagnosis or treatment of that patient's illness, injury or disease.*

Description of Procedure or Service:

Patients in pain management programs and substance abuse treatment may misuse prescribed controlled substances and/or may use non-prescribed drugs. Thus, patients in these settings are often assessed before treatment and monitored while they are receiving treatment. Urine drug testing (UDT) is one monitoring strategy; it is most often used as part of a multifaceted intervention that includes other components such as patient contracts.

According to an evidence assessment by the American Society of Interventional Pain Physicians (ASIPP), approximately one third of chronic pain patients do not use controlled substances as prescribed or may abuse them. Moreover, studies report that a substantial proportion of chronic pain patients inaccurately report nonadherence to prescribed medications and use of illicit drugs.

Various strategies are available to monitor pain management and substance abuse treatment patients, and multicomponent interventions are often used. Many settings require patients to sign a contract before they are given a prescription for narcotics. The contracts generally involve obtaining patients' agreement on behaviors they will engage in (e.g., taking medication as prescribed) and will not engage in (e.g., selling prescribed medication and/or obtaining additional prescriptions from other physicians) during the treatment period.

Confirming whether patients follow these behavioral guidelines can be a challenge. Risk-assessment screening instruments, such as the Screener and Opioid Assessment for Patients with Pain-Revisited (SOAPP-R), and the Opioid Risk Tool (ORT), can aid in the assessment of patients' risk for inappropriate drug use. In addition, the presence of "aberrant behaviors" can be used as a marker for patients who are at high risk for deviating from treatment protocols. Aberrant behaviors include multiple lost prescriptions, obtaining prescriptions from other practitioners, and displaying evidence of acute intoxication during office visits.

Another strategy for monitoring patients is testing of biological specimens for the presence or absence of drugs. Currently, urine is the most commonly used biological substance. Advantages of urine sampling are that it is readily available, and standardized techniques for detecting drugs in urine exist. Other biological specimens e.g., blood, oral fluids, hair and sweat, can also be tested and may gain in popularity over time as techniques for collecting and analyzing these specimens become more standardized. In addition to urine testing, this review will address testing of oral fluids and hair.

Urine drug testing (UDT) is performed to detect the use of prescription medications as well as to detect the misuse or abuse of illicit or non-prescribed licit drugs. Laboratory-based specific drug identification (sometimes referred to as "confirmatory" testing) is additional testing completed to identify the specific agent causing a positive result. This policy addresses the use of UDT in the outpatient setting for compliance monitoring of controlled substance use as part of pain management and substance abuse treatment. UDT should not routinely include a panel of all drugs of potential abuse.

NOTE: This policy does not address the use of UDT in the following circumstances:

- Emergency department testing, including for the detection of potential overdose or poisoning;
- Federally regulated testing;
- Non-forensic testing for commercial drivers licensing or any other job-related testing;
- State/legally mandated drug testing.

Policy:

Effective for dates of service on or after April 4, 2016:

In pain management programs for patients with chronic non-cancer pain, **qualitative** (i.e., screening) **urine drug testing meets** Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is considered **medically necessary** up to four (4) times per year for:

- Baseline screening before initiating treatment or at the time treatment is initiated using a controlled substance when **all** of the following conditions are met:
    - An adequate clinical assessment of patient history and risk of substance abuse is performed;
    - Clinicians have knowledge of test interpretation;
    - There is a plan in place regarding how to use test findings clinically
- Subsequent monitoring of treatment using a controlled substance.

In substance abuse treatment programs, qualitative (i.e., screening) **urine drug testing meets** Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is considered **medically necessary** under the following conditions:

- Baseline screening before initiating treatment or at the time treatment is initiated, **1 time per program entry**, when **all** of the following conditions are met:
    - An adequate clinical assessment of patient history and risk of substance abuse is performed;
    - Clinicians have knowledge of test interpretation;
    - There is a plan in place regarding how to use test findings clinically
- Stabilization phase – targeted weekly qualitative screening for a **maximum of 4 weeks**
- Maintenance phase – targeted qualitative screening **once every 1 to 3 months**

Quantitative (i.e., confirmatory) **urine drug testing, in pain management or substance abuse treatment, meets** Blue Cross and Blue Shield of Alabama's medical criteria for coverage for up to three (3) confirmatory tests per qualitative urine drug screen when specifically requested by the treating physician and the test results are necessary for treatment planning under the following conditions:

- The result of the qualitative drug screen is positive
- The result of the qualitative drug screen is negative and the negative finding is unexpected or inconsistent with the patient's current medication program

Urine drug testing in pain management or substance abuse treatment does not meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is **non-covered** when the above criteria are not met, including but not limited to:

- routine qualitative urine drug testing (e.g., testing at every visit, without consideration for specific patient risk factors, current clinical presentation, current medication program or how the test findings will impact treatment options)
- quantitative (i.e., confirmatory) urine drug testing without qualitative (i.e., screening) urine drug testing
- the use of comprehensive **confirmatory** panels (not to be confused with a comprehensive **screening** panel)

In pain management and substance abuse treatment, **hair drug testing and oral fluid drug testing do not meet** medical criteria for coverage and are considered **investigational.**

Testing for the same drug with blood and urine simultaneously does not meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage.

Drugs or drug classes which are being tested should reflect only those that are likely to be present based on the medical history, current clinical presentation and current medication program.

Policy Guidelines:

Limits on testing are specific for the patient, not based on the provider.

A comprehensive screening panel should only be considered for initial testing when appropriate or when the patient's behavior suggests the use of drugs not commonly identified on a basic screening panel. Medical documentation must support the justification for conducting a comprehensive screening panel. Subsequent testing should only be conducted for those substances identified on the patient's initial profile.

Testing performed for quality control or to determine sample integrity is not a billable service.

Testing on other biologic specimens, e.g., blood, oral fluids, hair or sweat, to circumvent the criteria or intent of this policy is not covered.

Pain Management

The risk-level for an individual patient should include a global assessment of risk factors, and monitoring for the presence of aberrant behavior. Standardized risk assessment tools are available, such as the 5-item opioid risk tool (ORT). Another screening instrument is the SOAPP-R, a 24-item tool.

Aberrant behavior is defined by one or more of the following:

- multiple lost prescriptions,
- multiple requests for early refill,
- obtained controlled substances from multiple providers,
- unauthorized dose escalation,
- apparent intoxication during previous visits.

Opinions vary on the optimal frequency of urine drug screening to monitor patients on controlled substance therapy for chronic pain. Frequency of screening using a risk-based approach, as recommended by the Washington State Inter-Agency Guideline is as follows:

- Low risk by Opioid Risk Tool (ORT)*: Up to 1 per year
- Moderate risk by ORT: Up to 2 per year
- High risk or opioid dose >120 MED/d: Up to 3 to 4 per year
- Recent history of aberrant behavior: Each visit

*__NOTE__: The ORT is a copyrighted instrument.

The Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain does not include specific screening frequencies but states that an individual patient's risk for controlled substance misuse and addiction should be considered when deciding when to order a urine drug screen.

Substance Abuse
Stabilization phase: Most patients are expected to be on a stable dose of opioid medication within 4 weeks of initiating treatment. In some complicated patients, the stabilization phase may last longer than 4 weeks.

Maintenance phase: For most patients, targeted qualitative screening once every 1 to 3 months is sufficient during the maintenance phase of treatment. More frequent testing may be appropriate for some complicated patients.

Documentation Requirements:

- All documentation must be maintained in the member's medical records and available upon request.
- Every page of the record must be legible and include appropriate member identification information (e.g., complete name, dates of service). The record must include the identity of the physician or non-physician practitioner responsible for and providing the care of the member.
- The submitted medical record should clearly describe the service(s) performed.
- Medical record documentation (e.g., history and physical, progress notes) maintained by the ordering physician/treating physician must indicate the medical necessity for performing a qualitative drug test. All tests must be ordered in writing by the treating provider and all drugs/drug classes to be tested must be indicated in the order. In addition, the names of drugs prescribed, dosages and frequency and dates prescribed should also be clearly documented. Documentation must exist for how the results will drive the treatment options (e.g., an anticipated treatment plan based on confirmation of inconsistencies in the initial urine drug testing, to include implementation and follow-up procedures).
- When a confirmatory (laboratory-based specific identification) test is performed, the record must show that an inconsistent positive finding was noted on the qualitative testing or that there was no available, commercially or otherwise, qualitative test to evaluate the presence of a semi-synthetic or synthetic controlled substance in a member who met the medical necessity criteria in this policy.
- If the provider of the service is other than the ordering/referring physician, that provider must maintain hard copy documentation of the lab results, along with copies of the ordering/referring physician's order for the qualitative drug test. The physician must include the clinical indication/medical necessity in the order for the qualitative drug test.
- Drugs or drug classes for which testing are performed should reflect only those likely to be present, based on the patient's medical history, current clinical presentation and current medication program. Drugs for which specimens are being tested must be indicated by the ordering health care provider in a written order.

- It is not considered reasonable or necessary to test for the same drug with both a blood and urine specimen simultaneously.

Effective for dates of service March 27, 2015 through April 3, 2016:

Qualitative (i.e., screening) **urine drug testing meets** Blue Cross and Blue Shield of Alabama's medical criteria for coverage in pain management programs for patients with chronic non-cancer pain and is considered **medically necessary** up to four (4) times per year for:

- Baseline screening prior to initiating chronic pain therapy using a controlled substance when **all** of the following conditions are met:
  - An adequate clinical assessment of patient history and risk of substance abuse is performed;
  - Clinicians have knowledge of test interpretation;
  - There is a plan in place regarding how to use test findings clinically
- Subsequent monitoring of chronic pain therapy using a controlled substance.

Quantitative (i.e., confirmatory) **urine drug testing meets** Blue Cross and Blue Shield of Alabama's medical criteria for coverage for up to three (3) confirmatory tests per qualitative urine drug screen when specifically requested by the treating physician and the test results are necessary for treatment planning under the following conditions:

- The result of the qualitative drug screen is positive
- The result of the qualitative drug screen is negative and the negative finding is unexpected or inconsistent with the patient's current medication program

Testing for the same drug with blood and urine simultaneously does not meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage.

Urine drug testing does not meet Blue Cross and Blue Shield of Alabama's medical criteria for coverage and is **non-covered** when the above criteria are not met, including but not limited to:

- routine qualitative urine drug testing (e.g., testing at every visit, without consideration for specific patient risk factors, current clinical presentation, current medication program or how the test findings will impact treatment options)
- quantitative (i.e., confirmatory) urine drug testing without qualitative (i.e., screening) urine drug testing
- the use of comprehensive **confirmatory** panels (not to be confused with a comprehensive **screening** panel)

Drugs or drug classes which are being tested should reflect only those that are likely to be present based on the medical history, current clinical presentation and current medication program.

Policy Guidelines:

Limits on testing are specific for the patient, not based on the provider.

A comprehensive screening panel should only be considered for initial testing when appropriate or when the patient's behavior suggests the use of drugs not commonly identified on a basic screening panel. Medical documentation must support the justification for conducting a comprehensive screening panel. Subsequent testing should only be conducted for those substances identified on the patient's initial profile.

The risk-level for an individual patient should include a global assessment of risk factors, and monitoring for the presence of aberrant behavior. Standardized risk assessment tools are available, such as the 5-item opioid risk tool (ORT). Another screening instrument is the SOAPP-R, a 24-item tool.

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Testing performed for quality control or to determine sample integrity is not a billable service.

Documentation Requirements:

- All documentation must be maintained in the member's medical records and available upon request.
- Every page of the record must be legible and include appropriate member identification information (e.g., complete name, dates of service). The record must include the identity of the physician or non-physician practitioner responsible for and providing the care of the member.
- The submitted medical record should clearly describe the service(s) performed.
- Medical record documentation (e.g., history and physical, progress notes) maintained by the ordering physician/treating physician must indicate the medical necessity for performing a qualitative drug test. All tests must be ordered in writing by the treating provider and all drugs/drug classes to be tested must be indicated in the order. In addition, the names of drugs prescribed, dosages and frequency and dates prescribed should also be clearly documented. Documentation must exist for how the results will drive the treatment options (e.g., an anticipated treatment plan based on confirmation of inconsistencies in the initial urine drug testing, to include implementation and follow-up procedures).
- When a confirmatory (laboratory-based specific identification) test is performed, the record must show that an inconsistent positive finding was noted on the qualitative testing or that there was no available, commercially or otherwise, qualitative test to evaluate the presence of a semi-synthetic or synthetic controlled substance in a member who met the medical necessity criteria in this policy.
- If the provider of the service is other than the ordering/referring physician, that provider must maintain hard copy documentation of the lab results, along with copies of the ordering/referring physician's order for the qualitative drug test. The physician must include the clinical indication/medical necessity in the order for the qualitative drug test.
- Drugs or drug classes for which testing are performed should reflect only those likely to be present, based on the patient's medical history, current clinical presentation and current medication program. Drugs for which specimens are being tested must be indicated by the ordering health care provider in a written order.
- It is not considered reasonable or necessary to test for the same drug with both a blood and urine specimen simultaneously.

Blue Cross and Blue Shield of Alabama does not approve or deny procedures, services, testing, or equipment for our members. Our decisions concern coverage only. The decision of whether or not to have a certain test, treatment or procedure is one made between the physician and his/her patient. Blue Cross and Blue Shield of Alabama administers benefits based on the member's contract and corporate medical policies. Physicians should always exercise their best medical judgment in providing the care they feel is most appropriate for their patients. Needed care should not be delayed or refused because of a coverage determination.

Key Points:

Definitions

Aberrant Behavior

Behaviors that are outside the boundaries of the agreed-upon treatment plan and may constitute aberrant substance use behavior including, but is not limited to, lost prescriptions, repeated requests for early refills, prescriptions from multiple providers, unauthorized dose escalation, and apparent intoxication.

Compliance (laboratory-based specific drug identification) Testing

Assessment of a patient's adherence to a treatment plan, typically looking for the presence of prescribed medications.

Enzyme-Linked Immune Assay (EIA)

A laboratory technology using drug-class specific antibodies to screen for presence of drugs: this technology is used for screening.

Gas Chromatography/Mass Spectrometry (GC/MS)

A laboratory technology used to identify the presence of specific drugs or their metabolites when EIA test screening is positive for unexpected illicit or non-prescribed licit drugs and/or negative for expected drugs.

High-Performance Liquid chromatography (HPLC)

A laboratory technology used to identify the presence of specific drugs or their metabolites when EIA test screening is positive for unexpected illicit or non-prescribed licit drugs and/or negative for expected drugs.

Liquid Chromatography/Mass Spectrometry (LC/MS)

Liquid chromatography is used to separate the different components in a specimen, and mass spectrometry is used to specifically identify the components of the specimen.

Urine Drug Testing

There are two primary categories of urine drug testing.

Immunoassay Testing (i.e., presumptive testing, qualitative testing, screening)

These tests can be performed either in a laboratory or at point of service. Immunoassay tests are based on the principle of competitive binding and use antibodies to detect a particular drug or drug metabolite in a urine sample. With competitive binding, a fixed amount of a labeled drug is added to the urine sample, and the drug or metabolite in the sample competes with the labeled drug for binding sites on the antibody. The amount of labeled antigen that binds with the antibody is inversely proportional to the amount of the drug or metabolite in the sample.

Immunoassay tests vary in the type of compounds they can detect. Some detect specific drugs and may fail to recognize similarly structured drugs within the same class. Other immunoassays identify only classes of drugs and thus results cannot be used to determine which drug a patient is taking. For example, a positive result to an opiate immunoassay can be due to morphine or

hydromorphone. The degree of crossreactivity, i.e., an antibody's reactivity with a compound other than the target of the test, varies widely among immunoassays.

Immunoassay findings are generally reported qualitatively as either positive (drug level above a prespecified threshold) or negative (drug level below a prespecified threshold). Raising or lowering the threshold thus changes the proportion of positive tests. A negative test is interpreted as a level below the threshold and does not necessarily mean that the drug or metabolite is absent.

Immunoassays generally have a rapid turnaround time, within minutes for onsite tests and 1 to 4 hours for laboratory-based tests.

Specific Drug Identification (i.e., definitive testing, quantitative testing, confirmatory testing)
Confirmatory tests are always performed in a laboratory. Gas chromatography/mass spectrometry (GC/MS) and liquid chromatography/tandem mass spectrometry (LC/MS/MS) are common testing platforms for confirmatory testing. Analysis with these technologies may produce results either qualitatively or quantitatively, although quantitative is common. GC/MS is more often associated with a targeted analysis for a specific drug or drug class. LC/MS/MS may be used for a targeted analysis, or for broad spectrum analysis covering many drug classes in a single analysis, including many drugs unavailable by immunoassay.

An issue with both types of urine drug testing is the possibility of sample tampering to mask the presence of illegal drugs. A variety of products and techniques are available to patients, and can be as simple as drinking a large amount of water to dilute the sample. There are also commercial dilution and cleaning products, additives and urine substitutes. Some of these techniques can be detected by visual inspection of the sample e.g., color, or by onsite testing of sample characteristics including urine temperature, creatinine concentration, and specific gravity.

In addition, correct interpretation of urine drug testing results is very important. Knowledge of drug metabolites is essential for accurate interpretation. Accurate interpretation of test results also requires knowledge of the drug manufacturing process. For example, due to manufacturing impurities, a small amount of hydrocodone may be present in urine samples from patients prescribed oxycodone. Thus, it would be acceptable to have this degree of hydrocodone if high amounts of oxycodone were also present.

There are various approaches to incorporating urine drug screening into pain management and substance abuse treatment settings. Most commonly, patients undergo urine drug screening before beginning treatment to verify current drug use. Some clinicians believe that urine drug screening should be routinely used to establish baseline information about substance use, but the optimal frequency and interval of testing remains uncertain. A universal approach to screening may uncover more inappropriate use, and may reduce patients' sense that testing is being performed due to a lack of trust. However, routine universal screening may place an unnecessary burden on the healthcare system and on the doctor-patient relationship. An alternative approach is selective testing of patients who are judged to be at increased risk for drug misuse.

Existing protocols vary for use of qualitative versus quantitative tests. Some settings conduct routine confirmation of positive qualitative tests with quantitative testing. Others use selective confirmation of positive qualitative tests, such as when an unexpected immunoassay result is not adequately explained by the patient. There is also a mixed approach, with routine confirmation of qualitative tests only for drugs with poor-performing immunoassays.

Full informed consent is a requirement before urine drug testing. Patients should be informed of the specific drug testing protocol before treatment and should provide written agreement with the plan for monitoring. As stated in a joint U.S. Veterans Affairs/Department of Defense guideline, patients' refusal to consent to urine testing should be considered as one factor in the overall assessment of patients' ability to adhere to treatment.

Oral Fluid Drug Testing

Oral fluid, liquid samples obtained from the oral cavity, can potentially be used to test for drug use. Oral fluid contains secretions from several different sources, including secretions from the 3 pairs of major salivary glands (parotid, sublingual, and submandibular), secretions from the minor salivary glands, oro-naso-pharyngeal secretions and cellular debris. The mixture of fluids obtained varies depending on the collection method used eg spitting, suctioning, draining or collection on some type of absorbent material. In addition, drug concentrations can be affected by the collection method, as well as by whether or not saliva stimulation methods were used. Several collection devices are commercially available in the United States and these generally involve collection on absorbent material (e.g., foam pad). Pads are then placed in a container with a stabilizing buffer solution. Drug concentrations may also vary depending on how the oral fluid is recovered from the collection device e.g., by centrifugation or by applying pressure. Another issue is that drug concentrations may not reflect blood levels because of residual amounts of drug (specifically those ingested or smoked) remaining in the oral cavity after recent use.

Analysis techniques must be able to detect drugs present in low concentration and in a small volume of fluid (often <1 mL). Immunoassay techniques are available to detect drugs in oral fluid; these require a small sample volume (≈25 μL). Immunoassays tend to be relatively sensitive techniques but they tend to have low specificity. Confirmation analysis is generally performed using mass spectrometry (MS) based methods. In recent years, advancements have been made in MS analysis techniques, including the development of multianalyte liquid chromatography-mass spectrometry (LC-MS) methods.

A practical advantage of oral fluid collection compared with urine is that samples can be obtained under direct supervision and without loss of privacy. It has been used in situations where urine sampling is impractical, such as testing drivers during traffic stops. Oral fluid sampling also has the potential to be useful in the pain management or substance abuse treatment settings, particularly when substitution or tampering with urine drug samples is suspected.

Hair Testing

Hair is made up of protein that traps chemicals in the blood at the time the hair was made in the hair follicle. Hair on the human head grows at the rate of approximately one-half inch per month. Thus, a 1.5-inch hair sample could be used to reveal drug use during the previous 90 days.

Potential advantages of hair as a drug testing source include that it collection is noninvasive, it is easy to collect, store and ship, sufficient samples are generally available for testing and retesting and it is difficult to substitute or adulterate. Potential disadvantages are that hair analysis cannot detect recent drug use (i.e., within past 7 days), it is difficult to detect very light drug use e.g., a single episode, drug levels can be due to environmental exposure as well as use. In addition, variation in hair texture as well as cosmetic hair treatments can affect drug incorporation in hair and the accuracy of drug tests on hair samples. As with other types of samples, hair can be initially tested using immunoassay techniques, with confirmation by MS-based methods. Hair testing has been used in a variety of situations where detection of drug use during the previous several months is sought, e.g., preemployment screening or post-drug-treatment verification of relapse.

Literature Search

The policy addresses urine drug testing as a component of pain management and substance abuse treatment. The literature search focused on the accuracy of testing and on the clinical utility of testing (i.e., the impact of test results on patient management and/or on health outcomes). When published studies were not identified, relevant national and regional clinical practice guidelines were sought.

Urine Drug Testing

Diagnostic Accuracy for Detecting Prescribed Opioids and/or Illicit Drugs

Few studies have evaluated the accuracy of urine drug testing in a real-world setting. One example of a study of this type was published in 2011 by Manchikanti et al. The investigators evaluated in-office immunoassay testing and used gas chromatography/mass spectrometry (GC/MS) as the "gold standard" comparison. The study was prospective and included consecutive patients recruited from a single pain management practice. Urine samples were tested for opioids and for illicit drugs. A total of 1000 patients had both the immunoassay and confirmatory tests; both tests were performed on the same urine sample. Personnel analyzing the tests were blinded to the results of the other test and to patient demographics. Primary findings for the diagnostic accuracy of in-office immunoassays for detecting opioids compared with the reference standard are shown in Table 1.

Table 1 Diagnostic Accuracy Findings in Manchikanti et al (2011)

Group	Sensitivity (95% CI)	Specificity (95% CI)
Patients prescribed morphine, hydrocodone, codeine, or hydromorphone (n=748)	92.5% (90% to 94%)	89.6% (82% to 95%)
Patients prescribed oxycodone (n=134)	80.0% (71% to 87%)	84.2% (60% to 96%)
Patients prescribed methadone (n=46)	97.8% (88% to 99%)	100% (2% to 100%)

CI: confidence interval

The most commonly identified illicit drugs were marijuana and amphetamines. The sensitivity and specificity of the immunoassay for detecting marijuana were 90.9% and 98.0%, respectively. Similar statistics for amphetamines were 47.0% and 99.1%, respectively. There were too few data to reliably report diagnostic accuracy of other illicit drugs.

A retrospective analysis by Johnson-Davis et al in 2015 evaluated the diagnostic accuracy of an in-house urine drug screen panel at a National Reference Laboratory. Samples were from routine

clinical testing in consecutive patients. The panel tested for 9 drug classes using immunoassay testing. Specimens that screened positive underwent confirmatory testing with GC/MS or liquid chromatography with tandem-mass spectrometry (LC/MS/MS). A shared confirmatory panel was used for samples testing positive to opiates or oxycodone. A total of 8825 samples were tested. Of these, 2642 (30%) tested positive for opiates and 1215 (14%) tested positive for oxycodone. Confirmatory testing identified 898 (34%) false positive tests for opiates and 23 (2%) false-positives tests for oxycodone. Authors did not include information on what drugs, if any, were prescribed to patients.

Section Summary: Diagnostic Accuracy
Few studies have evaluated the accuracy of UDT outside of the research setting, either for pain management or substance abuse treatment patients. One study found that diagnostic accuracy varied by drug type (eg, was higher for patients prescribed methadone than for those prescribed oxycodone). Another study of a urine drug panel found a relatively high false-positive rate.

Clinical Utility for Chronic Pain Patients Treated with Opioids
The preferred study design is a randomized controlled trial (RCT) comparing treatment decisions and/or health outcomes in patients managed with and without use of urine drug testing. When multifaceted interventions are used, it may be difficult to isolate the impact of drug testing from that of other components of the intervention. In that case, the preferred study design would include one arm with the full intervention and another arm with the same intervention but without urine drug testing missing. In the absence of RCTs, the next most preferred study design is a nonrandomized controlled trial that adjusts findings for potential confounding factors.

Managing Patients with UDT versus Without UDT
No RCTs or nonrandomized controlled studies adjusting for potential confounders were identified. A systematic review of the available literature on urine drug screening in the chronic pain management setting, alone or as part of a treatment agreement, was published in 2010 by Starrels et al. Studies were considered eligible for inclusion in the review if they included patients with chronic noncancer pain who were treated in an outpatient setting and measured opioid misuse outcomes after intervention implementation. Eleven studies met the eligibility criteria; none were RCTs. Eight studies addressed urine drug testing, seven of the eight interventions also involved treatment agreements. Studies used different protocols for urine testing, for example some used random screening and others screened on a regular basis. Three studies stated that drug screening was done at a minimum frequency (i.e., at enrollment and/or annually), with additional testing if deemed necessary by the physician. Five studies described the type of testing used; four of the five included confirmatory GC/MS testing.

The review authors reported that four of eleven studies included a control or comparison group. On closer inspection, two of the four studies labeled as controlled used historic comparison groups and one was a prospective single-arm study. Starrels et al did not pool findings of the four studies. In the individual studies, opioid misuse was reduced after intervention initiation from 7% to 23% compared with preintervention or historic controls.

Only one of the studies included in the systematic review used a concurrent comparison group. The study, by Goldberg et al, retrospectively reviewed data from a medical center database on 91

patients with a documented pain management contract. By signing the contract, the patient agreed to eight provisions, one of which was "lab tests may be used to check opioid use." Among the other seven provisions was an agreement not to use illegal drugs and not to share or sell any medication and an agreement that the patient would receive opioid medication only from a single primary care or pain clinic physician. The comparison group consisted of 224 similar patients without pain management contracts. Consumption of opioids was significantly higher in the intervention group than the comparison group. For example, the intervention group consumed an average of 91 units of opioids quarterly and the comparison group consumed an average of 81 units ($p<0.05$) (an opioid unit was defined as equivalent to one systematic administration of 10-mg morphine sulfate). Some of the data presented in the article were contradictory. For example, a table showed significantly greater number of emergency department visits among patients in the pain contract group than the comparison group, but the text stated that there are not more emergency department visits among patients in the pain contract group.

In the uncontrolled studies included in the systematic review, the proportion of patients with opioid misuse after intervention implementation ranged from 3% to 43%. There were eight studies that included drug testing as a component of the intervention. The protocol and frequency of drug testing varied in these studies. In three studies, there was a minimum baseline frequency, at the time of enrollment, annually, or both, with additional testing performed according to the judgment of the treating clinician. One study performed testing at baseline and on a monthly basis. In the remaining four studies, the frequency was not specified explicitly, but was described as "regular" or "random." In 2014, Dupouy et al published a systematic review of literature on the impact of UDS on patient management. All study designs and clinical settings were eligible for inclusion. Other article inclusion criteria were that the urine drug screens were conducted using the enzyme immunoassay technique and, for controlled studies, the comparison arm was patient management in the absence of urine testing. In addition, some type of medical management outcome needed to be reported, eg, reassessment of treatment, referral for specialist visits, hospitalization etc. Eight studies met the review's inclusion criteria. Five were rated as poor quality and three as fair quality. The studies consisted of one RCT, two quasi-randomized studies, one observational cohort study and four cross-sectional studies. The RCT, published in 2000 by Schiller et al, was a study of routine drug screening in a psychiatric emergency center, a setting that is not addressed in this reference policy. Most of the other studies were also conducted in settings that fall outside of the scope of the policy. However two studies evaluated relevant populations: one of these was an uncontrolled evaluation of UDT of opioid-addicted patients and the other was a quasi-randomized study conducted in U.S. pain centers. The latter study, Manchikanti et al 2006, was included in the Starrels et al meta-analysis, previously described. The authors of the 2014 systematic review did not pool study findings.

In 2016, Krishnamurthy et al published a retrospective cohort study comparing no-show and dropout rates in chronic pain patients who did and did not receive UDT. Before each clinic visit, patients received a letter stating that their provider might monitor adherence to treatment, including UDT. UDTs were not preformed randomly; investigators used propensity score matching to adjust for potential selection bias and confounding. The sample included 723 patients with a total of 4448 clinic visits (all patients had at least 2 visits). Results of the analysis was that UDT in the first visit was significantly associated with a higher rate of no-shows at the

second visit (odds ratio [OR], 2.73; 95% confidence interval [CI], 1.66 to 4.47; p<0.001). The no-show rate was 10.2% in patients without UDT and 23.8% in patients with UDT. Moreover, the no-show rate was higher in patients testing positive for illicit drugs (34.6%) than in those testing negative for illicit drugs (21.7%). In addition, the rate of dropout from treatment increased significantly with each additional UDT (95% CI of the hazard ratio, 1.54 to 2.61).

Managing Patients with Routine UDT versus Selective UDT
No studies were identified that compared patient management decisions or health outcomes in patients managed using routine urine testing compared with selective urine drug testing.

Managing Patients with Routine Confirmation of Positive Qualitative Tests versus Selective Confirmation of Positive Qualitative Tests
No studies were identified that compared patient management decisions or health outcomes in patients managed using routine confirmation of positive qualitative tests versus selective confirmation of positive qualitative tests.

Section Summary: Clinical Utility for Patients With Chronic Pain
No RCTs were identified. There are several nonrandomized studies with comparison groups. In one of them, consumption of opioids was significantly higher in the intervention group (which signed a pain management contract, including the possibility of drug testing) than in the comparison group. In another study, the no-show rate was higher in patients who had UDT in a previous visit. The evidence is insufficient to demonstrate whether UDT in the pain management setting improves patient outcomes.

Clinical Utility: Substance Abuse Treatment
Managing Patients with UDT versus Without UDT
One RCT was identified that suggests urine testing increases treatment compliance when receiving take-home methadone compared with no urine testing. In 2001, Chutuape et al published findings of a study that included patients in a methadone treatment program who had submitted fewer than 80% positive opiate and/or cocaine-positive urine samples during a 5-week baseline period. These patients then participated in a methadone take-home program and were randomized to one of three groups: 1) continued permission to take-home methadone was contingent on one negative urine sample, randomly selected each week; 2) continued permission to take-home methadone was contingent on one negative urine sample, randomly selected each month; or 3) permission to take-home methadone was not based on results of urine testing (control group). After participating in the intervention, subjects in the weekly group showed an immediate increase from baseline in percentage of drug-free urines; those in the monthly group showed a gradual increase over the first 3 months; and those in the control group showed a decline in percentage of drug-free urines over time. The percentage of patients with sustained (8 or more weeks) opiate and cocaine abstinence was 56.6%, 38.9%, and 10.5% in the weekly, monthly, and control groups, respectively (p<0.002).

In 2016, McDonell published an RCT evaluating a drug treatment intervention in primary care and that included an analysis of whether UDT can detect underreporting of drug use. The study included 829 patients with self-reported nonprescribed drug use or illegal drug use in the past 90 days. UDT were performed at baseline and at 3, 6, 9, and 12 months. The investigators found

that 331 (40%) participants denied drug use but had a positive drug screen during at least 1 of the 5 assessments. Patients who denied opioid use but whose UDT was positive were more likely to be older, female, and have a higher Addition Severity Index (ASI) drug composite score. This study was not designed to compare treatment success rates in patients managed with and without UDT.

Managing Patients with Routine UDT versus Selective UDT
No studies were identified.

Managing Patients with Routine Confirmation of Positive Qualitative Tests versus Selective Confirmation of Positive Qualitative Tests
No studies were identified.

Oral Fluid Drug Testing
Accuracy of Oral Fluid Testing for Detecting Prescribed Opioids and/or Illicit Drugs Compared With UDT
Several studies were identified that compared oral fluid and urine testing using paired samples collected concurrently. In 2011, Vindenes et al in Norway published a study comparing drug detection in oral fluid and urine samples in the drug treatment setting. A total of 164 pairs of urine and oral fluid samples, collected at the same time, were collected from 45 opioid-dependent patients participating in a drug treatment program. Oral fluid samples were collected using the Intercept device. Urine samples were screened using immunoassays and confirmed using LC/MS/MS. Oral fluid samples were analyzed using an LC/MS/MS method developed in Norway. All patients were being treated with buprenorphine or methadone, so it was expected that one of these drugs would be detected in each sample. Other than these two drugs, those most commonly detected were 7-aminoflunitrazepam (metabolite of flunitrazepam), amphetamine and THC. The sensitivity and specificity of the oral fluid samples compared with urine results were calculated. Key findings are shown in Table 2.

Table 2 Sensitivity and Specificity of Oral Fluid Samples in Vindenes et al (2011), Using Urine Analysis as the Reference Standard

Drug	Sensitivity	Specificity
Methadone	100%	100%
Buprenorphine	75%	NA (analytic problems)
7-aminoflunitrazepam	76%	97%
Amphetamine	100%	95%
THC	82%	98%
6-MAM (heroin)	95%	80%

NA: not applicable

A 2012 study by Heltsley et al included 133 patients undergoing pain management treatment who consented to provide oral fluid and urine samples. Oral samples were collected with the Quantisal™ device and specimens were analyzed by LC/MS/MS. Urine specimens were screened by immunoassay procedures and non-negative samples were confirmed by MS. Samples were tested for 34 drugs or drug metabolites, although in some instances different analyses were performed on urine and oral fluid specimens. A total of 1544 paired tests were performed. Of these, 329 (21.3%) were positive and 984 (63.7%) were negative in both matrices, for an overall agreement of 95%. Eighty-three (5.4%) findings were positive in oral fluid only

and 148 (9.6%) were positive in urine only. The authors conducted several analyses of the sensitivity and specificity of oral fluid samples, using urine analysis as the reference standard (see Table 3).

Table 3 Sensitivity and Specificity of Oral Fluid Samples in Heltsley et al (2012), Using Urine Analysis as the Reference Standard

Drug	Sensitivity (95% CI)	Specificity (95% CI)
All drugs	69.0% (64.6% to 73.1%)	92.2% (90.4% to 93.7%)
Four drug categories[a]	76.1% (60.9% to 86.9%)	95.9% (92.0% to 98.0%)
Six drug categories[b]	82.3% (75.0% to 87.9%)	92.2 (88.7% to 94.7%)

CI: confidence interval.
[a] Categories include amphetamines, cannabis, cocaine and opiates.
[b] Includes the above categories plus hydrocodone and oxycodone.

In 2014, Conermann et al compared findings of oral fluid and urine analysis in 153 paired samples from patients attending a pain management clinic. This study focused on confirmation that a treatment drug was being taken and did not report the sensitivity and specificity of oral fluid samples compared with urine samples. Oral fluid samples were collected with the Quantisal™ device. All specimens were screened with immunoassays and presumptive positive findings were confirmed using liquid chromatography- tandem mass spectrometry (LC/MS/MS). A total of 136 of the 153 paired samples (89%) tested positive for 1 or more treatment drugs (i.e., opioids or benzodiazepines) in 1 or both matrices. After excluding 4 paired samples due to missing data, 101 of 132 positive specimen pairs had exact drug class matches (76.5%). In another 21 paired samples, there was at least 1 drug class match (15.9%). Thus, there was an overall agreement between samples of 92.4%. Two analyses were positive in oral fluid only and 8 were positive in urine only.

Clinical Utility (i.e., Impact on Patient Management Decisions and/or Health Outcomes)
No studies were identified that compared patient management decisions or health outcomes in patients managed using oral fluid drug testing versus urine drug testing or versus no drug testing.

Section Summary: Oral Fluid Testing
The limited number of studies on diagnostic accuracy of oral fluid testing compared with urine testing had variable findings. No studies were identified on the impact of oral fluid testing on health outcomes compared with UDT or no drug testing.

Hair Testing
Accuracy of Hair Testing for Detecting Prescribed Opioids and/or Illicit Drugs Compared With UDT
No studies were identified that compared the accuracy of hair and urine testing using paired samples collected concurrently in the pain management setting or drug abuse treatment setting. One study using paired samples of urine and hair was identified. It was published by Musshoff et al in 2006 and was conducted in Germany. Patients underwent drug testing as part of the intake process for psychiatric treatment. Urine and hair samples (both head hair and pubic hair) from known drug users were analyzed. Fifty-one patients were included; all provided urine samples, 47 provided head hair samples (1-3 segments) and 36 provided pubic hair samples. Hair samples were washed, dried and cut into pieces about 1mm long. Drug analysis was done using GC-MS

methods. The hair test was considered positive if any segment had a positive finding. Urine samples were analyzed using standard immunoassays; positive findings were not confirmed. Prevalence rates of drugs identified in hair and urine samples, as well as self-report of drug use are shown in Table 4.

Table 4 Prevalence Rates of Drug Use in Musshoff et al (2006) (N=47)

	Opiates	Cocaine	Methadone	Cannabinoids	Amphetamines
Self-report	42 (89%)	18 (38%)	15 (32%)	26 (55%)	1 (2%)
Urine test	33 (70%)	13 (28%)	14 (30%)	21 (45%)	0 (0%)
Hair test	38 (81%)	26 (55%)	23 (49%)	15 (32%)	1 (2%)

Values are n (%)

Hair tests revealed a higher prevalence of drug use than urine for most drugs, with the exception of cannabinoids. The prevalence of amphetamines was too low to make meaningful comparisons. Cannabinoids are known to be excreted slowly in urine and to have a low incorporation rate into hair. It is important to note that the hair analysis was to detect drug use anytime during the past several months and the urine analysis detected drug use in the past several days.

Section Summary: Hair Testing

Hair testing cannot detect recent drug use (ie, in the past few days). One study looked at this longer time frame in patients starting psychiatric treatment. This study found a higher prevalence of drug use with hair testing versus UDT testing for most drugs; however, the implications of study findings for patients in pain management or substance abuse treatment is unclear. No studies were identified on diagnostic accuracy of hair testing versus urine testing in patients with chronic pain or substance abuse. In addition, no studies were identified on the clinical utility of hair testing in pain management or substance abuse treatment.

Summary

For individuals who have chronic pain who receive UDT, the evidence includes nonrandomized comparative studies and a systematic review. Relevant outcomes are test accuracy and validity, health status measures, and resource utilization. There is insufficient evidence on diagnostic accuracy. No RCTs evaluating clinical utility were identified. Several nonrandomized comparative studies have provided inconclusive evidence on whether UDT in the pain management setting improves patient outcomes. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have a drug addiction and are in substance abuse treatment who receive UDT, the evidence includes two RCTs. Relevant outcomes are test accuracy and validity, health status measures, and resource utilization. No studies were identified that evaluated the accuracy of UDT compared with a valid reference standard in individuals undergoing substance abuse treatment. One RCT focused on the specific situation of testing to determine eligibility for take-home methadone. The second RCT found that UDT identified drug use in a substantial number of patients who denied using; the impact on treatment success was not addressed. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have chronic pain treated with opioids or with a drug addiction in substance abuse treatment who receive oral fluid drug testing, the evidence includes diagnostic accuracy

studies using UDT as the reference standard. Relevant outcomes are test accuracy and validity, health status measures, and resource utilization. The limited number of studies on diagnostic accuracy of oral fluid testing compared with urine testing had variable findings. No studies were identified on the impact of oral fluid testing on health outcomes compared with UDT or no drug testing. The evidence is insufficient to determine the effects of the technology on health outcomes.

For individuals who have chronic pain treated with opioids or with a drug addiction in substance abuse treatment who receive hair drug testing, the evidence includes one diagnostic accuracy study in the setting of psychiatric treatment. Relevant outcomes are test accuracy and validity, health status measures, and resource utilization. Hair testing cannot detect recent drug use (ie, in the past few days) and thus has limited applicability to pain management or substance abuse treatment settings except, perhaps, for initial intake. There are no studies comparing the diagnostic accuracy of hair testing compared to urine testing in either of these settings. However, one relatively small study tested the hair and urine of known drug users recruited from a psychiatric clinic. The study looked for drug use over the past several months rather than the shorter timeframe generally needed in pain management or drug treatment settings. No studies were identified on the clinical utility of hair testing in pain management or substance abuse treatment. The evidence is insufficient to determine the effects of the technology on health outcomes.

Clinical Input Received From Physician Specialty Societies and Academic Medical Centers
While the various physician specialty societies and academic medical centers may collaborate with and make recommendations during this process, through the provision of appropriate reviewers, input received does not represent an endorsement or position statement by the physician specialty societies or academic medical centers, unless otherwise noted.

In response to requests, input was received through five physician specialty societies and eight academic medical centers while this policy was under review. There was near consensus among reviewers that, in the outpatient pain management, qualitative UDT may be considered medically necessary for patients who meet the stated criteria and that the frequency of repeat drug testing should be dependent on the risk level of the individual. There was also near consensus among reviewers that, in substance abuse treatment, baseline qualitative drug testing may be considered medically necessary for patients who meet the stated criteria and that targeted weekly qualitative screening for a maximum of 4 weeks may be considered medically necessary during the stabilization phase. There was mixed input on the frequency of qualitative drug testing that may be considered medically necessary during the maintenance phase of substance abuse treatment. In addition, clinical input was mixed on confirmatory quantitative drug testing and particularly on the issue of whether quantitative drug testing should only be performed on a drug-specific basis.

Practice Guidelines and Position Statements-Pain Management
In 2014, Nuckols et al published a systematic review of guidelines that addressed management opioid use for chronic pain. The authors included guidelines from national organizations and specialty societies, as well as guidelines from state agencies and specific health systems. The authors identified nine guidelines with recommendations regarding urine drug testing.

Recommendations varied widely; two guidelines recommended mandatory testing for all patients, one recommended testing only patients at increased risk of medication abuse, and two stated that testing patients at low risk of abuse is not cost-effective. If urine drug testing is used, the recommended frequency of follow-up testing was at least quarterly in one guideline, at least yearly in one guideline and randomly in two guidelines. Key guidelines relevant to this policy are described below in more detail.

Centers for Disease Control and Prevention:
In 2016, Centers for Disease Control and Prevention (CDC) guidelines on opioids for chronic pain was published. The guidelines included the following recommendation on UDT: "When prescribing opioids for chronic pain, clinicians should use urine drug testing before starting opioid therapy and consider urine drug testing at least annually to assess for prescribed medications as well as other controlled prescription drugs and illicit drugs."

American Society of Interventional Pain Physicians:
In 2012, they issued guidelines on responsible opioid prescribing for chronic noncancer pain. The guidelines include the following recommendations on urine drug testing:

- "Comprehensive assessment and documentation is recommended before initiating opioid therapy..." (Evidence: good)
- "Despite limited evidence for reliability and accuracy, screening for opioid use is recommended, as it will identify opioid abusers and reduce opioid abuse." (Evidence: limited)
- 'Urine drug testing must be implemented from initiation along with subsequent adherence monitoring, in an in-office setting with immunoassay and confirmation for accuracy with chromatography in select cases, to identify patients who are non-compliant or abusing prescription drugs or illicit drugs, and urine drug testing may decrease prescription drug abuse or illicit drug use when patients are in chronic pain management therapy." (Evidence: good)

The evidence behind the above recommendations was not clearly described in either the guidance document or the accompanying evidence assessment document.

American Pain Society and American Academy of Pain Medicine Opioids Guidelines Panel:
In 2009, they jointly published clinical guidelines on use of opioid therapy in chronic noncancer pain. The guidelines do not address urine drug testing or other forms of monitoring adherence.

American College of Occupational and Environmental Medicine:
In 2011, they issued guidelines on the chronic use of opioids which contained the following recommendations on urine drug testing:

> "Routine use of urine drug screening for patients on chronic opioids is recommended as there is evidence that urine drug screens can identify aberrant opioid use and other substance uses that otherwise are not apparent to the treating physician." Evidence (C): "The intervention is recommended for appropriate patients. There is limited evidence that the intervention may improve important health and functional benefits."

Screening is recommended for all patients at baseline and then randomly at least twice and up to four times a year and at termination. Screening should also be performed if the provider suspects abuse of prescribed medication.

Canadian Guideline for Safe and Effective Use of Opioids for Chronic Non-Cancer Pain:

Guidelines were issued in 2010 and they include the following recommendation on urine drug screening: "When using urine drug screening (UDS) to establish a baseline measure of risk or to monitor compliance, be aware of benefits and limitations, appropriate test ordering and interpretation, and have a plan to use results. (Grade C)."

The guideline also states that there is no "compelling evidence" to guide physicians on identifying patients who should have UDS, or on how often they should be tested. The document states that the following factors should be considered when deciding whether to order a urine drug screen:

- patient's risk for opioid misuse and addiction
- aberrant drug-related behaviors
- testing availability (note: this may be a Canadian-specific issue)

Veterans Affairs and Department of Defense:

In 2010, these federal agencies issued clinical practice guidelines for managing opioid therapy for chronic pain treatment.

The recommendations on assessing adherence to prescribed opioids includes, with patient consent, obtaining a urine drug test before initiating opioid therapy and randomly at follow-up to confirm appropriate use. Other strategies recommended include clinical assessment and screening aids such as random pill counts, adherence checklists and standardized instruments such as the Screener and Opioid Assessment for Patients with Pain (SOAPP).

The guideline included the following specific recommendations regarding urine drug testing:

1. Inform patients that drug testing is a routine procedure for all patients starting or on opioid therapy, and is an important tool for monitoring the safety of their treatment.
2. With patient consent, obtain a UDT in all patients prior to initiation of OT.
3. With patient consent monitor all patients on OT with periodic random UDTs to confirm adherence to the treatment plan. Increase the frequency of UDTs based on risk level for aberrant drug-related behaviors and following each dose increase.
4. Take into consideration a patient's refusal to take a UDT as part of the ongoing assessment of the patient's ability to adhere to the treatment plan and the level of risk for adverse outcomes.
5. When interpreting UDT results take into account other clinical information (e.g., past SUD, other risk factors, aberrant drug-related behaviors, and other conditions indicating risk.)
6. Understanding of lab methods for drug testing and reporting are necessary to interpret UDT results (i.e., screen versus confirmatory test, substances tested, cut-off levels for tests). Maintain a close working relationship with the clinical laboratory to answer any questions about the UDT or for confirming the results.

Washington State Agency Medical Directors' Group:
In 2010, this group issued interagency guidelines on opioid dosing for chronic noncancer pain. The guideline included recommendations on urine drug testing. Recommendations on testing frequency differed depending on patient risk of opioid addiction and opioid dosage, and are summarized next (also see Policy Guidelines):

- Low risk: Periodic screening (up to once per year)
- Moderate risk: Regular screening (up to twice per year)
- High risk or opioid dose over 120 mg MED/d (up to 3 or 4 per year)
- Aberrant behavior: Each visit

No pain management guidelines were identified that had recommendations on oral fluid or hair testing.

Practice Guidelines and Position Statements-Substance Abuse Treatment
American Society of Addiction Medicine:
In 2010, the American Society of Addiction Medicine (ASAM) issued a statement on drug testing in the substance abuse treatment programs. As stated in this document, the policy of ASAM is: "Urine drug testing is a key diagnostic and therapeutic tool that is useful for patient care and in monitoring the ongoing status of a person who has been treated for addiction. As such, it is a part of medical care, and should not face undue restrictions." The document did not have specific statements on oral fluid or hair testing.

U.S. Preventive Services Task Force Recommendations
Not applicable

Key Words:
Urine drug testing, UDT, chronic pain, substance abuse

Approved by Governing Bodies:
GC/MS tests and some immunoassays are performed in laboratory settings. Clinical laboratories may develop and validate in house (i.e., laboratory-developed) tests and market them as a service. Laboratory-developed tests must meet the general regulatory standards of the Clinical Laboratory Improvement Act (CLIA).

A CLIA waiver is available for use of certain point-of-care immunoassays. Tests eligible for a CLIA waiver are those considered to be simple, with low risk of error and low potential for harm. The U.S. Food and Drug Administration (FDA) is tasked with approving manufacturers' applications for test system waivers. There are commercially available CLIA-waived tests for drugs such as cocaine, methadone, morphine/opiates and oxycodone. There are also commercially available hair testing tests such as Quest Diagnostics ELISA tests for amphetamines, opiates, cocaine, marijuana metabolites, and PCP. In addition, Omega Laboratories offers hair drug screening for cocaine and cocaine metabolites.

Several oral fluid drug test collection devices have been cleared for marketing by FDA through the 510(k) process. They include:

- Intercept™ Oral Fluid Drug Test Oral Specimen Collection Device (OraSure Technologies, Bethlehem, PA)
- Oral-Eze Saliva Collection System (Quest Diagnostics, Madison NJ)
- Quantisal™ Oral Fluid Collection Device (Alere, Waltham, MA)

In addition to the oral fluid collection devices, FDA has cleared a number of assays for analysis of oral samples. For example, there are FDA-cleared assays for 9 drugs collected with the Intercept device. These are amphetamines, methamphetamine, cocaine/metabolite, opiates, marijuana/THC, phencyclidine, barbiturates, benzodiazepines, and methadone.

Benefit Application:

Coverage is subject to member's specific benefits. Group specific policy will supersede this policy when applicable.
ITS: Home Policy provisions apply.
FEP: Special benefit consideration may apply. Refer to member's benefit plan. FEP does not consider investigational if FDA approved and will be reviewed for medical necessity.

Current Coding:

Effective for dates of service on or after January 1, 2017:

Blue Cross and Blue Shield of Alabama has adopted the revised coding position articulated by CMS. Use of CPT codes **80320-80377** are not reimbursed separately and the appropriate corresponding G code **(G0480-G0483, G0659)** should be billed for quantitative/confirmatory (definitive) testing.

CPT Codes:

80305	Drug test(s), presumptive, any number of drug classes, any number of devices or procedures (eg, immunoassay); capable of being read by direct optical observation only (eg, dipsticks, cups, cards, cartridges) includes sample validation when performed, per date of service. **(Effective 01/01/17)**
80306	Drug test(s), presumptive, any number of drug classes, any number of devices or procedures (eg, immunoassay); read by instrument assisted direct optical observation (eg, dipsticks, cups, cards, cartridges), includes sample validation when performed, per date of service. **(Effective 01/01/17)**
80307	Drug test(s), presumptive, any number of drug classes, any number of devices or procedures, by instrument chemistry analyzers (eg, utilizing immunoassay [eg, EIA, ELISA, EMIT, FPIA, IA, KIMS, RIA]), chromatography (eg, GC, HPLC), and mass spectrometry either with or without chromatography, (eg, DART, DESI, GC-MS, GC-MS/MS, LC-MS, LC-MS/MS, LDTD, MALDI, TOF)

includes sample validation when performed, per date of service. **(Effective 01/01/17)**

HCPCS Codes:

G0480	Drug test(s), definitive, utilizing drug identification methods able to identify individual drugs and distinguish between structural isomers (but not necessarily stereoisomers), including, but not limited to GC/MS (any type, single or tandem) and LC/MS (any type, single or tandem and excluding immunoassays (e.g., IA, EIA, ELISA, EMIT, FPIA) and enzymatic methods (e.g., alcohol dehydrogenase)), stable isotope or other universally recognized internal standards in all samples (e.g., to control for matrix effects, interferences and variations in signal strength), and method or drug-specific calibration and matrix-matched quality control material (e.g., to control for instrument variations and mass spectral drift); qualitative or quantitative, all sources, includes specimen validity testing, per day; 1-7 drug class(es), including metabolite(s) if performed. **(Effective 01/01/16)**
G0481	Drug test(s), definitive, utilizing drug identification methods able to identify individual drugs and distinguish between structural isomers (but not necessarily stereoisomers), including, but not limited to GC/MS (any type, single or tandem) and LC/MS (any type, single or tandem and excluding immunoassays (e.g., IA, EIA, ELISA, EMIT, FPIA) and enzymatic methods (e.g., alcohol dehydrogenase)), stable isotope or other universally recognized internal standards in all samples (e.g., to control for matrix effects, interferences and variations in signal strength), and method or drug-specific calibration and matrix-matched quality control material (e.g., to control for instrument variations and mass spectral drift); qualitative or quantitative, all sources, includes specimen validity testing, per day; 8-14 drug class(es), including metabolite(s) if performed. **(Effective 01/01/16)**
G0482	Drug test(s), definitive, utilizing drug identification methods able to identify individual drugs and distinguish between structural isomers (but not necessarily stereoisomers), including, but not limited to GC/MS (any type, single or tandem) and LC/MS (any type, single or tandem and excluding immunoassays (e.g., IA, EIA, ELISA, EMIT, FPIA) and enzymatic methods (e.g., alcohol dehydrogenase)), stable isotope or other universally recognized internal standards in all samples (e.g., to control for matrix effects, interferences and variations in signal strength), and method or drug-specific calibration and matrix-matched quality control material (e.g., to control for instrument variations and mass spectral drift); qualitative or quantitative, all sources, includes specimen validity testing, per day; 15-21 drug class(es), including metabolite(s) if performed. **(Effective 01/01/16)**

G0483	Drug test(s), definitive, utilizing drug identification methods able to identify individual drugs and distinguish between structural isomers (but not necessarily stereoisomers), including, but not limited to GC/MS (any type, single or tandem) and LC/MS (any type, single or tandem and excluding immunoassays (e.g., IA, EIA, ELISA, EMIT, FPIA) and enzymatic methods (e.g., alcohol dehydrogenase)), stable isotope or other universally recognized internal standards in all samples (e.g., to control for matrix effects, interferences and variations in signal strength), and method or drug-specific calibration and matrix-matched quality control material (e.g., to control for instrument variations and mass spectral drift); qualitative or quantitative, all sources, includes specimen validity testing, per day; 22 or more drug class(es), including metabolite(s) if performed. **(Effective 01/01/16)**
G0659	Drug test(s), definitive, utilizing drug identification methods able to identify individual drugs and distinguish between structural isomers (but not necessarily stereoisomers), including but not limited to GC/MS (any type, single or tandem) and LC/MS (any type, single or tandem), excluding immunoassays (eg, IA, EIA, ELISA, EMIT, FPIA) and enzymatic methods (eg, alcohol dehydrogenase), performed without method or drug-specific calibration, without matrix-matched quality control material, or without use of stable isotope or other universally recognized internal standard(s) for each drug, drug metabolite or drug class per specimen; qualitative or quantitative, all sources, includes specimen validity testing, per day, any number of drug classes **(Effective 01/01/17)**

Previous Coding:

Effective for dates of service on or after January 1, 2016 through December 31, 2016:

Blue Cross and Blue Shield of Alabama has adopted the revised coding position articulated by CMS. Use of CPT codes **80300-80304** are not reimbursed separately. **G0477, G0478 or G0479** should be billed for urine drug screen (presumptive) testing. One unit of only one code within the range **(G0477-G0479)** will be reimbursed per encounter if the above criteria are met. Use of CPT codes **80320-80377** are not reimbursed separately and the appropriate corresponding G code **(G0480-G0483)** should be billed for quantitative/confirmatory (definitive) testing.

Effective for dates of service March 27, 2015 through December 31, 2015:

Blue Cross and Blue Shield of Alabama has adopted the revised coding position articulated by CMS. Use of CPT codes **80300-80304** are not reimbursed separately**.** **G0431** or **G0434** should be billed for urine drug screen testing. One unit of either code (**G0431** or **G0434**) will be reimbursed per encounter if the above criteria are met. Use of CPT codes **80320-80377** are not reimbursed separately and the appropriate corresponding G codes (**G6030-G6058**) should be billed for quantitative/confirmatory testing.

HCPCS Codes:

G0431	Drug screen, qualitative; multiple drug classes by high complexity test method (e.g., immunoassay, enzyme assay), per patient encounter **(Deleted 12/31/15)**
G0434	Drug screen, other than chromatographic; any number of drug classes, by CLIA waived test or moderate complexity test, per patient encounter **(Deleted 12/31/15)**
G0477	Drug tests(s), presumptive, any number of drug classes; any number of devices or procedures, (eg, immunoassay) capable of being read by direct optical observation only (eg, dipsticks, cups, cards, cartridges), includes sample validation when performed, per date of service. **(Effective 01/01/16 through 12/31/16)**
G0478	Drug tests(s), presumptive, any number of drug classes; any number of devices or procedures, (eg, immunoassay) read by instrument-assisted direct optical observation (eg, dipsticks, cups, cards, cartridges), includes sample validation when performed, per date of service. **(Effective 01/01/16 through 12/31/16)**
G0479	Drug tests(s), presumptive, any number of drug classes; any number of devices or procedures by instrumented chemistry analyzers (eg, immunoassay, enzyme assay, TOF, MALDI, LDTD, DESI, DART, GHPC, GC mass spectrometry), includes sample validation when performed, per date of service. **(Effective 01/01/16 through 12/31/16)**
G6030	Assay of amitriptyline **(Deleted 12/31/15)**
G6031	Assay of benzodiazepines **(Deleted 12/31/15)**
G6032	Assay of desipramine **(Deleted 12/31/15)**
G6034	Assay of doxepin **(Deleted 12/31/15)**
G6036	Assay of imipramine **(Deleted 12/31/15)**
G6037	Assay of nortriptyline **(Deleted 12/31/15)**
G6040	Assay of alcohol (ethanol); any specimen except breath **(Deleted 12/31/15)**
G6041	Alkaloids, urine, quantitative **(Deleted 12/31/15)**
G6042	Assay of amphetamine or methamphetamine **(Deleted 12/31/15)**
G6043	Assay of barbiturates, not elsewhere specified **(Deleted 12/31/15)**
G6044	Assay of cocaine or metabolite **(Deleted 12/31/15)**
G6045	Assay of dihydrocodeinone **(Deleted 12/31/15)**
G6046	Assay of dihydromorphinone **(Deleted 12/31/15)**
G6050	Assay of ethchlorvynol **(Deleted 12/31/15)**
G6051	Assay of flurazepam **(Deleted 12/31/15)**
G6052	Assay of meprobamate **(Deleted 12/31/15)**
G6053	Assay of methadone **(Deleted 12/31/15)**
G6056	Opiate(s), drug and metabolites, each procedure **(Deleted 12/31/15)**
G6058	Drug confirmation, each procedure **(Deleted 12/31/15)**

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Policy History:

Medical Policy Group, February 2015**(1):** New policy
Medical Policy Administration Committee, February 2015
Available for comment January 28 through March 15, 2015
Medical Policy Group, February 2015 **(1):** Added coverage criteria for qualitative confirmatory urine drug testing along with corresponding HCPCS code G6058 during draft period; policy remains available for comment through March 15, 2015
Medical Policy Group, March 2015 **(1):** Added coverage criteria for quantitative confirmatory testing along with corresponding applicable HCPCS codes G6030-G6058
Medical Policy Group, December 2015 **(1):** 2016 Annual Coding Update. Added HCPCS codes G0477-G0483 to current coding section. Moved HCPCS codes G0431, G0434 and G6030-G6058 from current coding section to previous coding section.
Medical Policy Group, February 2016 **(1)**: Added coverage criteria for substance abuse treatment patients, added investigational statement around hair and oral fluid drug testing, changed title to read Drug Testing; updated Key Points, Key Words, Governing Bodies and References.
Medical Policy Administration Committee, February 2016
Available for comment February 19 through April 3, 2016
Medical Policy Group, December 2016 **(1):** 2016 Updates to Key Points & References; no change in intent of policy statement; 2017 Annual Coding Update, added CPT codes 80305, 80306 and 80307 and HCPCS code G0659 to current coding section. Moved HCPCS codes G0477, G0478 and G0479 from current coding section to previous coding section.
