

Oral Fluid vs. Urine: A System Sensitivity Analysis of Workplace Drug Testing

Real-world detection outcomes across industries, drug classes, and matched populations.



REAL-WORLD EVIDENCE

Observed outcomes from multiple independent studies



OBSERVATIONAL COMPARISONS

Real-world observations across matched populations



BEHAVIORAL INSIGHTS

Patterns driven by incentives, not analytical performance



ACTIONABLE IMPACT

Stronger detection supports safer, smarter workplaces

WHY SYSTEM SENSITIVITY MATTERS

System sensitivity reflects a testing program's ability to detect drug use in real-world settings. Accounting for collection design, donor behavior, and specimen integrity – in addition to analytical performance.



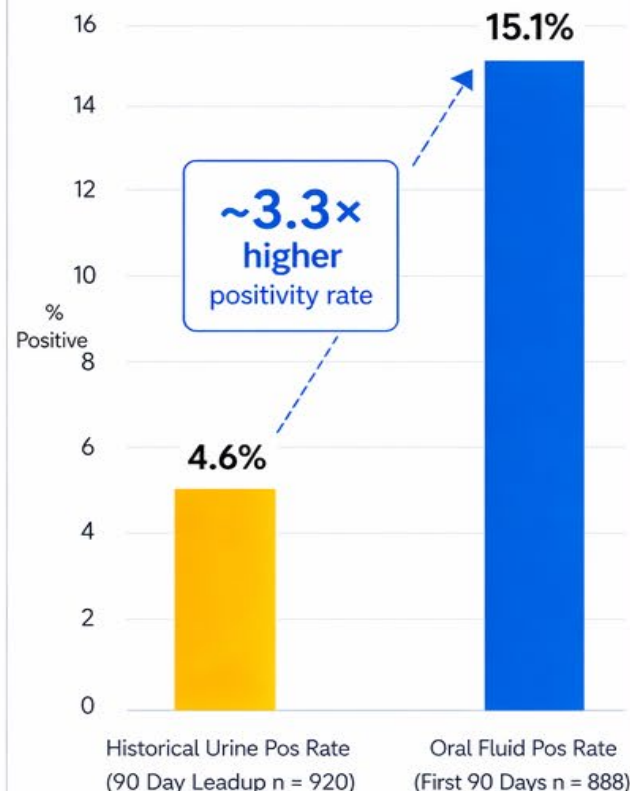
**It's not just about the test.
It's about the system.**

The data on the following pages reveals a consistent and meaningful difference in detection outcomes.

01

THE FIRST SIGNAL: WAREHOUSE CASE STUDY

*Program Transition: Urine to Oral Fluid
Pre-Employment Positivity Rate
Post Confirmation and MRO Review*



WHAT THE DATA SHOW



Initial 90-day oral fluid positivity rate was ~3.3x higher than the last 90 days of urine testing.



Identified >10 additional drug-using applicants per 100 pre-employment screens compared with urine.



Pattern is not consistent with population drift alone.



90-day average may underestimate true impact; effect was most pronounced immediately after conversion.

- Day 1–15: 21.4% positive
- Day 16–30: 15.2% positive
- Month 2–3: 13.5% positive



KEY INSIGHT

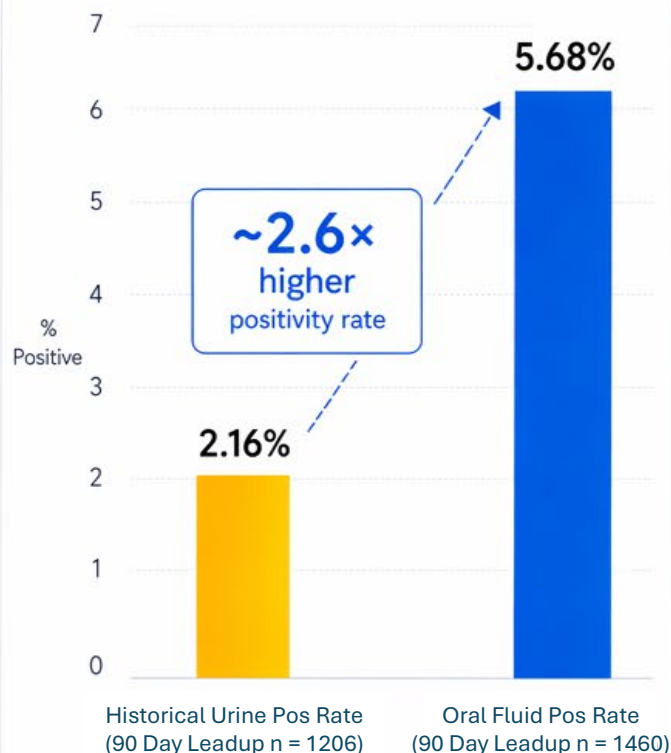
Rapid increase in detections following oral fluid adoption suggests a structural detection difference—not population change.



02

THE PATTERN HOLDS: HOSPITAL CASE STUDY

*Program Transition: Urine to Oral Fluid
Pre-Employment Positivity Rate
Post Confirmation and MRO Review*



WHAT THE DATA SHOW

- 2.6x** Initial 90-day oral fluid positivity rate was ~2.6x higher than urine.
- Identified ~3.5 additional drug-using applicants per 100 tests.
- Increase observed despite lower baseline prevalence.
- Pattern is consistent with warehouse findings.



KEY INSIGHT

Detection differences persist across industries, suggesting a system-level effect—not environment-specific factors.

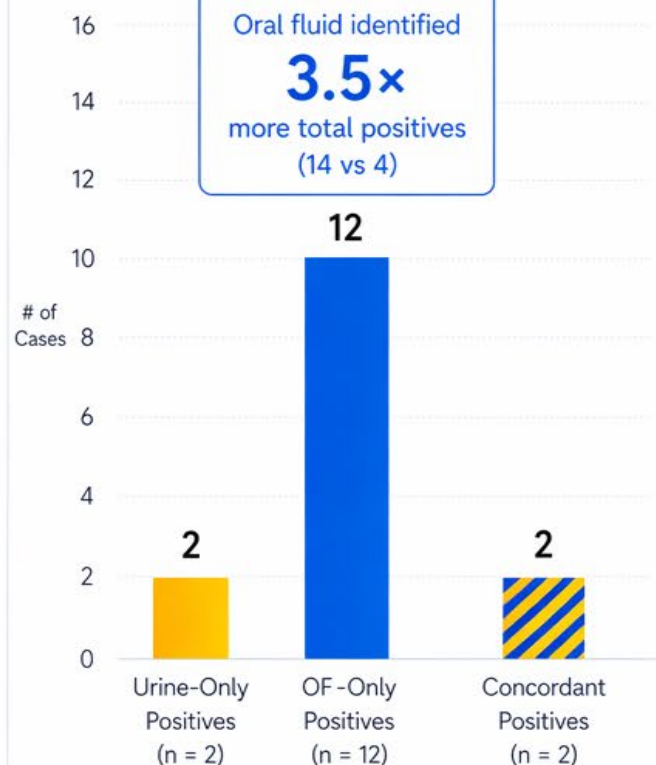
Source: The Compliance Resource Group

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CONTROLLED COMPARISON: DOT PAIRED STUDY

Same donor. Same time. Different outcomes.

196 paired collections: DOT urine and employer-mandated oral fluid tests collected contemporaneously



UNDER SAME-DONOR, SAME-TIME CONDITIONS

- 3.5x** Oral fluid identified 3.5x more total positives (14 vs 4).
- 6x** Identified 6x more discordant findings—scenarios where the tests disagree (12 vs 2).
- Eliminates population, timing, and prevalence confounders.



KEY INSIGHT

When population and timing are controlled, differences reflect detection system behavior—not population variability.

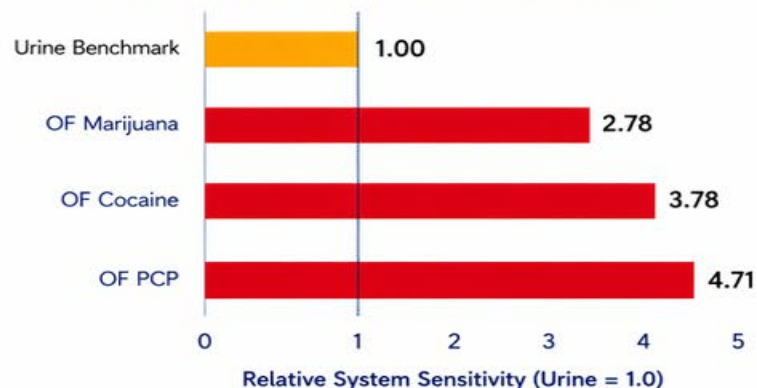
Source: The Compliance Resource Group

THE ILLICIT DETECTION GAP

Secondary Analysis of the 2025 Quest Drug Testing Index (DTI)

Aggregated Data (Reporting Years 2020-2024)

RELATIVE SYSTEM SENSITIVITY (ORAL FLUID POSITIVITY RATE RELATIVE TO URINE)



WHAT THE DATA SHOW

- Largest detection gaps appear in illicit-only drug categories.
- These categories lack legitimate medical explanations.
- DTI suggest urine is missing far more illicit drug use that it is capturing.
- Effect persists despite oral fluid's shorter detection window.



KEY INSIGHT

Where detection carries full consequence, avoidance pressure is highest—and system gaps widen.

Source: 2025 Quest Drug Testing Index™ (DTI)

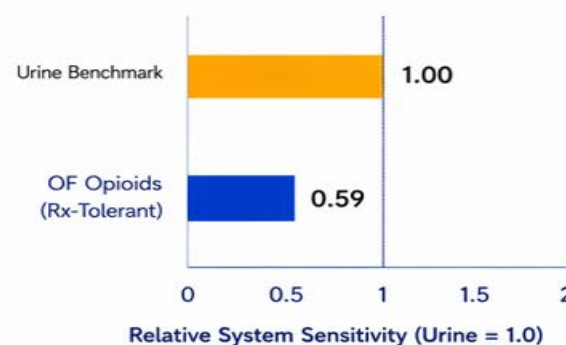
Analysis and commentary are solely those of FluidPath Logistics and do not reflect the views or position of Quest Diagnostics.

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OPIOIDS (RX-TOLERANT CLASS)

Lower consequence. Legitimate medical use. Reduced avoidance incentive.

RELATIVE SYSTEM SENSITIVITY (ORAL FLUID POSITIVITY RATE RELATIVE TO URINE)



KEY TAKEAWAYS

- ~80% of opioid positives overtruned via MRO.
→ Reduced avoidance incentive.
- Urine's longer detection window contributes to higher positivity in Rx-tolerant classes.
- Lower behavioral distortion drives more accurate results. Detection rates converge when circumvention pressure declines.



KEY INSIGHT

Rx-tolerant categories show lower relative sensitivity differences largely due to the longer urine detection window and lower incentive to avoid detection.

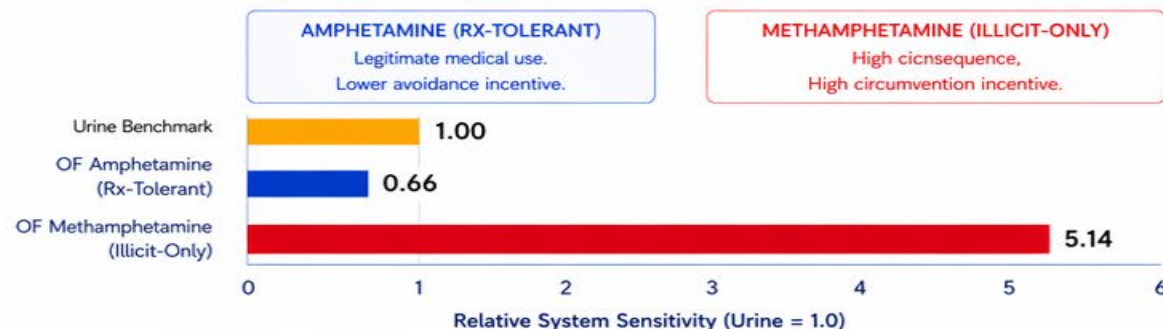
Source: 2025 Quest Drug Testing Index™ (DTI)

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THE HYBRID CATEGORY: AMPHETAMINES - SAME DRUG CLASS, DIFFERENT BEHAVIOR

Relative System Sensitivity (Oral Fluid Positivity Rate Relative to Urine)



AMPHETAMINE (RX-TOLERANT)

Legitimate medical use.
Lower avoidance incentive.

METHAMPHETAMINE (ILLICIT-ONLY)

High consequence,
High circumvention incentive.

KEY TAKEAWAYS

- Amphetamine behaves like an Rx-tolerant category. Lower avoidance incentive → lower detection gap.
- Methamphetamine behaves like an illicit-only category. High consequence → high circumvention → large detection gap.
- Within the same drug class, behavior diverges based on perceived consequence and legitimacy.

WHAT THIS MEANS



These contrasting outcomes within the same drug class reinforce that **differences are driven by behavioral incentives—not analytical detection capability.**



KEY INSIGHT

When incentive to avoid detection is lower, detection rates converge. When incentive is high, system gaps widen.

Source: 2025 Quest Drug Testing Index™ (DTI)

Analysis and commentary are solely those of FluidPath Logistics and do not reflect the views or position of Quest Diagnostics.

THE FULL PICTURE: ALL DRUG CATEGORIES

Relative System Sensitivity (Oral Fluid Positivity Rate Relative to Urine)

The DTI data reveal a clear and consistent pattern across drug categories: **when the incentive to avoid detection is high, system gaps widen**—regardless of drug class or industry.

WHAT THE DATA SHOW



Illicit-only categories show the **largest detection gaps**. DTI data suggest urine is missing far more illicit drug use that it is capturing.

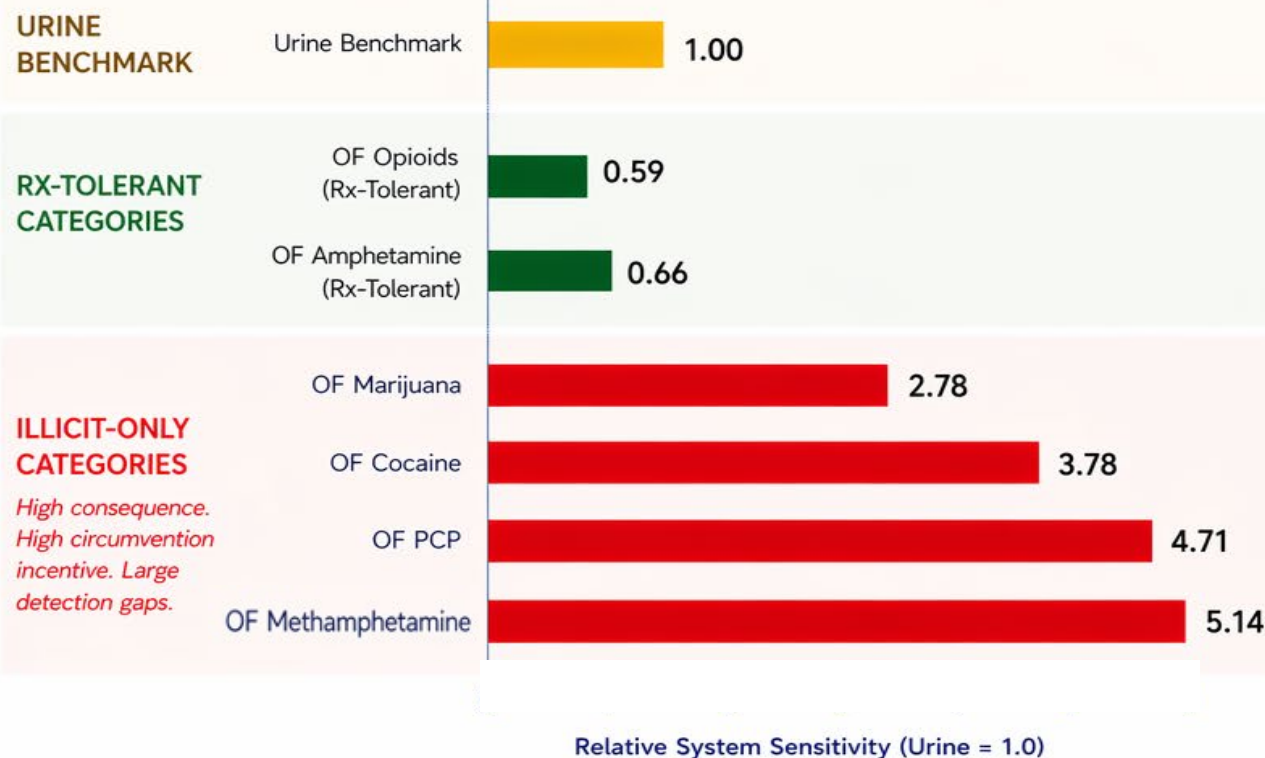


Use of valid Rx medications produces lower avoidance incentive and **less behavioral distortion**.



Within the same drug class, behavior aligns with perceived consequence and legitimacy of use.

ORAL FLUID POSITIVITY RATE RELATIVE TO URINE (URINE = 1.0)



KEY TAKEAWAYS



INCENTIVES DRIVE OUTCOMES

When consequences are highest, avoidance pressure is highest—and system gaps are largest.



THE WINDOW MATTERS

The longer detection window associated with **valid** urine specimens likely contributes to higher positivity in Rx-tolerant categories.



SPECIMEN COLLECTION CONSTRICTS CIRCUMVENTION

Oral fluid collections are directly observed, constricting circumvention pathways, increasing the likelihood that a valid specimen is obtained from the intended donor at the time the test is performed.



KEY INSIGHT

The DTI shows a clear Relative System Sensitivity divide:

When incentives to avoid detection are lower, detection rates converge.
When incentives are high, system gaps widen.



These patterns hold across drug classes and align with real-world consequence structures.