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# Oral Fluid Reveals More Heroin Use Than Previously Believed, According to Quest Diagnostics Drug Testing Index

**MADISON, NJ, January 25, 2011** — Oral fluid has revealed approximately five times more heroin use in the general U.S. workforce than previously believed, according to new data today released by Quest Diagnostics Incorporated (NYSE: DGX), the world's leading provider of diagnostic testing, information and services. In the company's first special report on oral fluid testing with more than 320,000 oral fluid samples from the general U.S. workforce from January to June 2010, data reveal that oral fluid testing detected a marker for heroin use at a rate of 0.04% compared to the 0.008% positivity rate in urine testing.

The oral fluid data findings align with early data from more than 350,000 urine samples tested from October 1 to December 31, 2010, showing that new, federally-mandated urine drug testing rules succeeded in finding 20% more positives for the heroin marker 6-acetylmorphine, or 6-AM, among transportation workers subjected to the testing.

"Oral fluid testing is helping employers find more heroin users," said Dr. Barry Sample, director of science and technology for Quest Diagnostics Employer Solutions. "In addition, while the findings are preliminary, new federal requirements appear to be weeding out more heroin users from safety sensitive roles -- where impairment from heroin use can cause particularly grave impact."

Both oral fluid testing and the new federally-mandated urine testing process for safety-sensitive workers involve sensitive initial testing for the 6-AM heroin marker. In the past, safety-sensitive worker urine testing for heroin was performed only after a positive morphine test result, because heroin metabolizes to 6-AM, and then to morphine.

As of October 1, 2010, in addition to lowering the cutoffs for amphetamines and cocaine, the U.S. Department of Transportation (DOT) joined the U.S. Department of Health and Human Services (DHHS) to require urine testing for the heroin marker specifically. Among those transportation workers subject to the new rule, the newly mandated testing process for the heroin marker revealed a nearly 20% jump in positive results -- 0.011%, in the fourth quarter of 2010, vs. 0.009%, in the same period in 2009 -- as compared to the previous heroin detection program. The government also required testing for ecstasy (MDMA). During the first three months of testing under the new requirements, the additional test for ecstasy yielded a positivity rate (0.004%) consistent with expected rates based on historical non-regulated testing data.

Urine drug testing and alternative specimen testing, such as hair and oral fluid testing, are used by employers to help maintain a drug-free workplace. Oral fluid testing, which detects recent drug use, offers the advantage of an observed collection and is easily administered by the hiring manager. There also are no known adulterants that can be used to tamper with oral fluid testing. Urine testing, the most commonly used screening method, is an accurate and reliable way to detect casual drug use for a broader range of substances that occurred within the past 72 hours. Hair testing, which also affords little opportunity for specimen tampering, is the only drug testing method available that provides up to a 90-day history of repetitive drug use.

According to Dr. Sample, “Today, employers have available to them a powerful array of resources to protect their business, their employees, and the public they serve from the risks and harm that can result from worker drug use. Alternative specimen testing, such as oral fluid and hair testing, has added convenience and flexibility to employer drug testing programs, and helps employers to effectively custom-design programs that address the unique configuration of their workforce.”

For more information on the Quest Diagnostics Drug Testing Index, visit [http://www.questdiagnostics.com/employersolutions/drug\\_testing\\_index\\_es.html](http://www.questdiagnostics.com/employersolutions/drug_testing_index_es.html).

The Quest Diagnostics Drug Testing Index is published as a public service for government, media and industry and has been considered a benchmark for national trends since its inception in 1988. It examines positivity rates — the proportion of positive results for each drug to all such drug tests performed — among three major testing populations: federally mandated, safety-sensitive workers; the general workforce; and the combined U.S. workforce. Federally mandated, safety sensitive workers include pilots, bus and truck drivers, and workers in nuclear power plants, for whom routine drug testing is mandated by the U.S. Department of Transportation and the Nuclear Regulatory Commission.

### **About Quest Diagnostics Employer Solutions Business**

Quest Diagnostics Employer Solutions Business offers a comprehensive menu of testing and collection programs to manage employers' pre-employment and employee drug testing, wellness services, national clinical testing, background checks and OSHA requirements. A national leader in drug testing, Quest Diagnostics performed approximately 7.5 million drug tests in 2010, and leads the industry in drug-testing program options and tools, including urine, oral fluid and hair testing; customized panels; sport-related testing for performance-enhancing drugs; specialized testing of healthcare professionals, and a drug testing program ROI calculator, available online at [www.employersolutions.com/roj](http://www.employersolutions.com/roj). The Quest Diagnostics Blueprint for Wellness ([www.BlueprintforWellness.com](http://www.BlueprintforWellness.com)), a health risk identification solution and education tool for employers, uses laboratory insights to provide measurable results that help participants manage health risk more effectively, in turn reducing healthcare spending and costs.

### **About Quest Diagnostics**

Quest Diagnostics is the world's leading provider of diagnostic testing, information and services that patients and doctors need to make better healthcare decisions. The company offers the broadest access to diagnostic testing services through its network of laboratories and patient service centers, and provides interpretive consultation through its extensive medical and scientific staff. Quest Diagnostics is a pioneer in developing innovative new diagnostic tests and advanced healthcare information technology solutions that help improve patient care. Additional company information is available at: [www.QuestDiagnostics.com](http://www.QuestDiagnostics.com).

### **Percent Testing Positive for Opiates – Oral Fluid Drug Tests**

(For General U.S. Workforce, as a percentage of all tests for Opiates)

(More than 320 thousand tests from January to June 2010)

	2007	2008	2009	Jan-Jun 2010
<b>Codeine</b>	0.09%	0.09%	0.10%	0.08%
<b>Morphine</b>	0.05%	0.06%	0.07%	0.05%
<b>Hydrocodone</b>	0.54%	0.61%	0.69%	0.77%
<b>6-Acetylmorphine</b>	0.03%	0.04%	0.05%	0.04%
<b>Codeine &amp; Morphine</b>	0.01%	0.01%	0.01%	0.01%
<b>Morphine &amp; 6-MAM</b>	0.02%	0.02%	0.03%	0.02%

(tables follow)

**Table 1. Annual Positivity Rates – Urine Drug Tests  
(For Combined U.S. Workforce)**

*(More than 2.9 million tests from January to June 2010)*

<b>Year</b>	<b>Drug Positive Rate</b>
1988	13.6%
1989	12.7%
1990	11.0%
1991	8.8%
1992	8.8%
1993	8.4%
1994	7.5%
1995	6.7%
1996	5.8%
1997	5.0%
1998	4.8%
1999	4.6%
2000	4.7%
2001	4.6%
2002	4.4%
2003	4.5%
2004	4.5%
2005	4.1%
2006	3.8%
2007	3.8%
2008	3.6%
2009	3.6%
Jan - Jun 2010	3.6%

**Table 2. Positivity Rates By Testing Category – Urine Drug Tests**

<b>Testing Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan - Jun 2010</b>
Federally Mandated, Safety-Sensitive Workforce	2.0%	1.8%	1.6%	1.5%	1.5%
General U.S. Workforce	4.4%	4.4%	4.2%	4.2%	4.2%
Combined U.S. Workforce	3.8%	3.8%	3.6%	3.6%	3.6%

**Table 3. Positivity Rates By Testing Reason – Urine Drug Tests  
(For Federally Mandated, Safety-Sensitive Workforce)**  
(More than 720 thousand tests from January to June 2010)

Testing Reason	2006	2007	2008	2009	Jan - Jun 2010
Follow-Up	3.0%	2.8%	2.2%	2.5%	2.6%
For Cause	12.4%	11.1%	9.9%	11.1%	9.4%
Periodic	0.59%	0.75%	0.71%	0.82%	0.95%
Post-Accident	2.7%	2.6%	2.3%	2.2%	2.2%
Pre-Employment	2.3%	2.0%	1.7%	1.5%	1.6%
Random	1.5%	1.5%	1.4%	1.4%	1.3%
Returned to Duty	3.2%	3.3%	3.1%	3.0%	3.4%

**Table 4. Positivity Rates By Testing Reason – Urine Drug Tests  
(For General U.S. Workforce)**  
(More than 2.2 million tests from January to June 2010)

Testing Reason	2006	2007	2008	2009	Jan - Jun 2010
Follow-Up	7.4%	7.7%	7.6%	7.5%	6.6%
For Cause	18.1%	19.2%	22.0%	26.8%	27.9%
Periodic	1.9%	1.4%	1.4%	1.5%	1.2%
Post-Accident	5.7%	5.8%	5.6%	5.3%	5.2%
Pre-Employment	3.9%	3.9%	3.6%	3.4%	3.6%
Random	5.5%	5.7%	5.3%	5.4%	5.5%
Returned to Duty	5.8%	5.6%	5.3%	4.6%	5.0%

**Table 5. Positivity Rates By Drug Category – Urine Drug Tests**  
**(For Federally Mandated, Safety-Sensitive Workforce, as a percentage of all such tests)**  
*(More than 720 thousand tests from January to June 2010)*

<b>Drug Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan - Jun 2010</b>
Amphetamines	0.28%	0.25%	0.26%	0.29%	0.32%
Cocaine	0.58%	0.44%	0.32%	0.24%	0.21%
Marijuana	0.94%	0.88%	0.77%	0.69%	0.70%
Opiates	0.17%	0.18%	0.20%	0.21%	0.18%
PCP	0.03%	0.04%	0.04%	0.04%	0.03%

**Table 6. Positivity Rates By Drug Category – Urine Drug Tests**  
**(For General U.S. Workforce, as a percentage of all such tests)**  
*(More than 2.2 million tests from January to June 2010)*

<b>Drug Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan - Jun 2010</b>
Amphetamines	0.42%	0.44%	0.48%	0.57%	0.65%
Cocaine	0.72%	0.58%	0.41%	0.29%	0.23%
Marijuana	2.4%	2.3%	2.1%	2.0%	2.1%
Opiates	0.32%	0.35%	0.38%	0.45%	0.39%
PCP	0.02%	0.02%	0.02%	0.02%	0.01%

**Table 7. Non-Negative Rates By Specimen Validity Test (SVT)<sup>1</sup> Category – Urine Drug Tests  
(For Federally Mandated, Safety-Sensitive Workforce, as a percentage of all such tests)  
(More than 720 thousand tests from January to June 2010)**

<b>SVT Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan - Jun 2010</b>
Acid-Base	0.00%	0.01%	0.02%	0.03%	0.03%
Invalid	0.12%	0.11%	0.11%	0.09%	0.08%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.05%	0.05%	0.05%	0.06%	0.06%

**Table 8. Non-Negative Rates By Specimen Validity Test (SVT)<sup>1</sup> Category – Urine Drug Tests  
(For General U.S. Workforce, as a percentage of all such tests)  
(More than 2.2 million tests from January to June 2010)**

<b>SVT Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan - Jun 2010</b>
Acid-Base	0.00%	0.00%	0.00%	0.00%	0.00%
Invalid	0.15%	0.13%	0.12%	0.12%	0.13%
Oxidizing Adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Substitution	0.01%	0.01%	0.01%	0.02%	0.02%

<sup>1</sup>Specimen validity testing is the evaluation of a specimen to determine if it is consistent with a normal human specimen. Tests for specimen validity include tests to determine whether a specimen is adulterated or substituted.

**Table 9. Positivity Rates By Testing Category – Oral Fluid Drug Tests**

Testing Category	2006	2007	2008	2009	Jan–Jun 2010
General U.S. Workforce	4.0%	4.1%	4.2%	4.2%	4.4%

**Table 10. Positivity Rates By Drug Category – Oral Fluid Drug Tests  
(For General U.S. Workforce, as a percentage of all such tests)  
(More than 320 thousand tests from January to June 2010)**

Drug Category	2006	2007	2008	2009	Jan–Jun 2010
Amphetamine	0.16%	0.16%	0.17%	0.17%	0.23%
Cocaines	1.1%	0.82%	0.58%	0.50%	0.47%
Marijuana	2.3%	2.4%	2.7%	2.7%	2.9%
Methamphetamines	0.27%	0.22%	0.15%	0.13%	0.13%
Opiates	0.45%	0.67%	0.76%	0.86%	0.91%
PCP	0.02%	0.02%	0.02%	0.01%	0.01%

**Table 11. Positivity Rates By Testing Reason – Oral Fluid Drug Tests  
(For General U.S. Workforce)  
(More than 320 thousand tests from January to June 2010)**

Testing Reason	2006	2007	2008	2009	Jan – Jun 2010
Follow-Up	11.8%	12.9%	11.2%	9.8%	12.1%
For Cause	17.9%	23.0%	16.8%	17.9%	19.9%
Post-Accident	2.5%	3.3%	3.5%	3.7%	3.9%
Pre-Employment	4.1%	4.2%	4.3%	4.3%	4.5%
Random	3.2%	3.4%	3.3%	3.6%	3.7%
Returned to Duty	3.4%	4.8%	4.4%	5.1%	3.2%

**Table 12. Positivity Rates By Testing Category – Hair Drug Tests**

<b>Testing Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan–Jun 2010</b>
General U.S. Workforce	8.4%	9.5%	7.8%	7.0%	6.6%

**Table 13. Positivity Rates By Drug Category – Hair Drug Tests  
(For General U.S. Workforce, as a percentage of all such tests)  
(More than 90 thousand tests from January to June 2010)**

<b>Drug Category</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan–Jun 2010</b>
Amphetamines (Methamphetamine)	1.1%	1.2%	0.86%	1.2%	0.77%
Cocaine	4.5%	5.3%	4.2%	3.3%	2.3%
Marijuana	3.5%	3.9%	3.4%	3.0%	3.9%
Opiates	0.14%	0.17%	0.14%	0.15%	0.07%
PCP	0.01%	0.01%	0.00%	0.01%	0.01%

**Table 14. Positivity Rates By Testing Reason – Hair Drug Tests  
(For General U.S. Workforce)  
(More than 90 thousand tests from January to June 2010)**

<b>Testing Reason</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>Jan–Jun 2010</b>
Pre-Employment	7.2%	7.4%	6.3%	4.8%	5.2%
Random	11.0%	15.8%	9.6%	10.2%	10.1%

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