



New Hair Data Validate Sharp Downward Trend in Cocaine and Methamphetamine Positivity in General U.S. Workforce, According to Quest Diagnostics Drug Testing Index(TM)

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Hair data reveal higher use for certain drugs than urine data alone reflect

MADISON, N.J., Nov. 20 /PRNewswire-FirstCall/ -- New data released today by Quest Diagnostics Incorporated (NYSE: DGX), the nation's leading provider of employment-related drug testing services, reveal that drug testing of hair specimens from employees and job applicants in the general U.S. workforce has tracked sharp downward trends in cocaine and methamphetamine use from 2005 to the first half of 2009 that mirror similar drops shown by urine testing. Data in the Quest Diagnostics Drug Testing Index(TM) (DTI) special report include more than 27 million urine tests and more than 840 thousand hair tests performed by Quest Diagnostics between 2005 and the first half of 2009. Testing of urine specimens can detect a single instance of drug use in the prior one to three days, while hair testing can detect a pattern of repetitive use over a period of up to 90 days.

Hair and urine test data show that declines in cocaine use have been dramatic since 2005, with hair tracking a 36 percent drop from 5.0 percent positivity to 3.2 percent positivity, and urine tracking a 57 percent drop from 0.70 percent positivity in 2005 to 0.30 percent positivity in the first half of 2009. A hair data decline of 55 percent in methamphetamine positivity rates, from 2.0 to 0.9 over the same period, validate the decline seen in urine test data, which fell 64 percent, from 0.28 to 0.10.

Numbers Fell Over Time, But Hair Data Show Far More Cocaine and Methamphetamine Use Than Urine Alone

While both hair and urine test data show a decline in cocaine and methamphetamine use over time in the general U.S. workforce, hair data show a dramatically higher level of use. In the first half of 2009, the 3.2 percent cocaine positivity rate in hair testing is more than ten-fold that of the 0.30 percent positivity found in urine testing, and the 0.90 percent methamphetamine positivity rate in hair testing is nine times that of the 0.10 positivity found in urine. Overall drug use detected by hair testing during the same period reached 6.9 percent positivity; urine reached 4.2 percent.

"Hair has a longer memory than urine when it comes to finding patterns of drug use. That's because a drug test on a small amount of hair can detect a drug user's repeated consumption of a substance over time, while a test of a urine sample can signal drug use in the prior one to three days," according to Barry Sample, Ph.D., director of science and technology, Quest Diagnostics' Employer Solutions division. "Looking at hair and urine data from the same time period--and seeing both long-term repetitive use and recent use--gives us a more complex and sophisticated view of workforce drug habits. This special DTI report suggests that while law enforcement and employer drug testing efforts appear to be working, there is more drug use in the American workforce than shown by urine data alone."

Urine testing is the most common drug screening method and detects recent or new drug use, typically in the one to three days prior to testing. Urine testing is suitable for all testing reasons--from pre-employment to random to post-accident--and is performed on a wide variety of drug substances, both illicit and prescribed (i.e., prescription drugs, for which their use or misuse could impact workplace safety).

Hair testing is a newer technology that has been experiencing gradual adoption over the past decade. While workplace hair testing focuses on illicit drugs and tests for fewer substances than does urine testing (which may include tests for prescription drugs), it provides a much longer detection period. Hair testing will not detect a single instance of drug use, but rather a pattern of repetitive use over a period of up to 90 days. The longer detection period for hair testing presents a greater window of opportunity to detect use, and may also reduce the effectiveness of a job applicant's efforts to "prepare" for a drug test--most often by trying to beat the test by halting drug use several days before, or by attempting to alter results with specimen adulterants, or by substituting samples. Yet hair testing is not effective in detecting drug use in post-accident or reasonable-suspicion test cases. In these situations, urine or oral-fluid testing are more effective than hair testing in detecting drug use because, unlike hair testing, they can detect a drug in the system as closely as possible to the time of its use.

Employers that implement drug testing programs do so for a variety of reasons, most often to protect the health and well-being of employees and avert business risk associated with drug-induced judgments.

"The higher hair positivity rates in the Quest Diagnostics DTI report are consistent with those we see in the drug testing programs we implement for employers," said Joseph R. Gonzalez, President of Advanced Workplace Strategies, Inc. (AWSI). "When employers add hair testing, they are finding large increases in positivity rates compared to those with urine testing alone, and the rise is particularly evident with cocaine and amphetamines/methamphetamines. In addition, they are finding that, like random urine drug testing, hair testing may be serving as a powerful deterrent to worker drug use."

First Large-Scale Study of Same-Donor Hair and Urine Results Sheds Light on Distinct Advantages of Different Test Methods

To date, there has been no large, published side-by-side analysis of hair and urine specimens collected simultaneously from the same donor. At the October 22nd Oklahoma City meeting of The Society of Forensic Toxicologists (SOFT), Quest Diagnostics' Dr. Sample presented results of the first such analysis. The study was separate from the Drug Testing Index, and looked at a data set of more than 193,000 paired hair-urine specimens over a five and a half year period. Workforce drug screening results comprised approximately 80 percent of the data while the remaining 20 percent included results from criminal justice and family and social services drug testing.

Consistent with positivity rate data in the DTI special report, the analysis of the paired specimens showed that the overall drug use hair positivity rate, at 12.6 percent, is higher than that of urine, 7.6 percent. In addition, hair results showed a higher positivity rate than urine for cocaine, 4.8 percent versus 0.65 percent, as well as for methamphetamine, 5.9 percent versus 1.8 percent. Yet hair and urine testing positivity rates were identical for marijuana, with both at 3.4 percent.

According to Dr. Sample, in addition to affording a valuable "apples-to-apples" comparison of positivity rates for hair and urine, the paired analysis helps to provide a more complete picture of drug use within a cohort. The paired study revealed that, of the 100 percent of positives found for cocaine, 87 percent were positive in hair and negative in urine, while 2 percent were positive in urine yet not in hair. The remaining 11 percent were positive in

both.

Of the 100 percent of positives found for marijuana, nearly 31 percent were positive in hair but not in urine, and an equal amount, nearly 31 percent, were positive in urine, yet not in hair. The remaining 39 percent were positive for marijuana in both.

Testing of a hair sample is valued by employers because it serves as a reservoir of sorts, one that reflects repeated drug presence in the body. Urine reflects the drug's presence during the first few days after use, when it is still circulating through the body. Employers value the insights provided by a urine sample because it reflects recent use of a drug, even if only in a single instance. A hair sample does not reflect a single event of drug use, recent or otherwise.

Dr. Sample added, "Side-by-side analysis of the insights provided by both hair and urine specimens from the same set of donors shows alignment with the findings of our broader DTI report and enhances our understanding of the advantages each drug testing method brings. With this richer understanding, employers can use these tools in ways that best fit their drug testing needs and their workforce configurations."

About the Drug Testing Index(TM) (DTI)

The 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 by Quest Diagnostics - 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 Division

Quest Diagnostics' Employer Solutions Division 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 9 million drug tests in 2008, 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/roi. The Quest Diagnostics' Employer Solutions Division's Blueprint for Wellness (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.

Table 1. Annual Positivity Rates - Urine Drug Tests
(For Combined U.S. Workforce)
(More than 2.8 million tests from January to June 2009)

Year	Drug Positive Rate
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%

Table 2. Positivity Rates By Testing Category - Urine Drug Tests

Testing Category	2005	2006	2007	2008	Jan-Jun 2009
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Federally Mandated, Safety-Sensitive Workforce	2.3%	2.0%	1.8%	1.6%	1.5%
General U.S. Workforce	4.5%	4.4%	4.4%	4.2%	4.2%
Combined U.S. Workforce	4.1%	3.8%	3.8%	3.6%	3.5%

Table 3. Positivity Rates By Testing Reason - Urine Drug Tests
(For Federally Mandated, Safety-Sensitive Workforce)
(More than 680 thousand tests from January to June 2009)

Testing Reason	2005	2006	2007	2008	Jan - Jun 2009
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Follow-Up	3.1%	3.0%	2.8%	2.2%	2.6%
For Cause	13.4%	12.4%	11.1%	9.9%	11.2%
Periodic	0.76%	0.59%	0.75%	0.71%	0.59%
Post-Accident	3.0%	2.7%	2.6%	2.3%	2.2%
Pre-Employment	2.6%	2.3%	2.0%	1.7%	1.5%
Random	1.8%	1.5%	1.5%	1.4%	1.4%
Returned to Duty	3.0%	3.2%	3.3%	3.1%	2.8%

Table 4. Positivity Rates By Testing Reason - Urine Drug Tests
(For General U.S. Workforce)
(More than 2.1 million tests from January to June 2009)

Testing Reason	2005	2006	2007	2008	Jan - Jun 2009
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Follow-Up	9.6%	7.4%	7.7%	7.6%	8.0%
For Cause	28.3%	18.1%	19.2%	22.0%	27.1%
Periodic	2.4%	1.9%	1.4%	1.4%	1.6%
Post-Accident	5.8%	5.7%	5.8%	5.6%	5.4%
Pre-Employment	3.9%	3.9%	3.9%	3.6%	3.4%
Random	6.6%	5.5%	5.7%	5.3%	5.4%
Returned to Duty	6.0%	5.8%	5.6%	5.3%	4.9%

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 680 thousand tests from January to June 2009)

Drug Category	2005	2006	2007	2008	Jan - Jun 2009
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Amphetamines	0.35%	0.28%	0.25%	0.26%	0.27%
Cocaine	0.60%	0.58%	0.44%	0.32%	0.24%
Marijuana	1.1%	0.94%	0.88%	0.77%	0.69%
Opiates	0.18%	0.17%	0.18%	0.20%	0.22%
PCP	0.04%	0.03%	0.04%	0.04%	0.04%

Table 6. Positivity Rates By Drug Category - Urine Drug Tests
 (For General U.S. Workforce, as a percentage of all such tests)
 (More than 2.1 million tests from January to June 2009)

Drug Category	2005	2006	2007	2008	Jan - Jun 2009
Amphetamines	0.48%	0.42%	0.44%	0.48%	0.55%
Cocaine	0.70%	0.72%	0.58%	0.41%	0.30%
Marijuana	2.5%	2.4%	2.3%	2.1%	2.0%
Opiates	0.32%	0.32%	0.35%	0.38%	0.44%
PCP	0.02%	0.02%	0.02%	0.02%	0.01%

Table 7. Non-Negative Rates By Specimen Validity Test (SVT)¹ Category -
 Urine Drug Tests
 (For Federally Mandated, Safety-Sensitive Workforce, as a percentage of
 all such tests)
 (More than 680 thousand tests from January to June 2009)

SVT Category	2005	2006	2007	2008	Jan - Jun 2009
Acid-Base	0.01%	0.00%	0.01%	0.02%	0.02%
Invalid	0.12%	0.12%	0.11%	0.11%	0.08%
Oxidizing Adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Substitution	0.05%	0.05%	0.05%	0.05%	0.06%

Table 8. Non-Negative Rates By Specimen Validity Test (SVT)⁽¹⁾ Category
 - Urine Drug Tests
 (For General U.S. Workforce, as a percentage of all such tests)
 (More than 2.1 million tests from January to June 2009)

SVT Category	2005	2006	2007	2008	Jan - Jun 2009
Acid-Base	0.00%	0.00%	0.00%	0.00%	0.00%
Invalid	0.16%	0.15%	0.13%	0.12%	0.11%
Oxidizing Adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Substitution	0.01%	0.01%	0.01%	0.01%	0.01%

(1) 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 - Hair Drug Tests

Testing Category	2005	2006	2007	2008	Jan-Jun 2009
General U.S. Workforce	9.1%	8.4%	9.5%	7.8%	6.9%

Table 10. Positivity Rates By Drug Category - Hair Drug Tests
 (For General U.S. Workforce, as a percentage of all such tests)
 (More than 70 thousand tests from January to June 2009)

Drug Category	2005	2006	2007	2008	Jan - Jun 2009
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Amphetamines (Methamphetamine)	2.1%	1.1%	1.2%	0.86%	1.1%
Cocaine	5.0%	4.5%	5.3%	4.2%	3.2%
Marijuana	3.0%	3.5%	3.9%	3.4%	3.2%
Opiates	0.14%	0.14%	0.17%	0.14%	0.15%
PCP	0.01%	0.01%	0.01%	0.00%	0.01%

Table 11. Positivity Rates By Testing Reason - Hair Drug Tests
(For General U.S. Workforce)
(More than 70 thousand tests from January to June 2009)

Testing Reason	2005	2006	2007	2008	Jan - Jun 2009
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Pre-Employment	7.0%	7.2%	7.4%	6.3%	4.7%
Random	12.7%	11.0%	15.8%	9.6%	10.4%

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