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Illicit Drug Positivity Rate Increases Sharply in Workplace Testing, Finds Quest Diagnostics Drug Testing Index™ Analysis

Upsurge in marijuana, cocaine and methamphetamine drive second consecutive year of increases in the positivity rate for drug tests, suggesting a potential reversal in a decades' long decline in workforce drug use

Madison, N.J., June 9, 2015 –The percentage of American workers testing positive for illicit drugs such as marijuana, cocaine and methamphetamine has increased for the second consecutive year in the general U.S. workforce, according to insights from more than 10 million workplace drug test results released today by Quest Diagnostics (NYSE: DGX), the world's leading provider of diagnostic information services. The analysis suggests a potential reversal in the decades' long decline in the abuse of illicit drugs in the United States workforce.

The Quest Diagnostics Drug Testing Index (DTI) shows that the positivity rate for approximately 6.6 million urine drug tests in the general U.S. workforce increased overall by 9.3 percent, to 4.7 percent in 2014 compared to 4.3 percent in 2013. 2013 was the first year since 2003 in which the overall positivity rate for urine drug tests increased in the general U.S. workforce. In addition, overall positivity for oral fluid and hair drug tests, representing approximately 1.1 million tests, increased between 2013 and 2014 in the general U.S. workforce.

"American workers are increasingly testing positive for workforce drug use across almost all workforce categories and drug test specimen types. In the past, we have noted increases in prescription drug positivity rates, but now it seems illicit drug use may be on the rise, according to our data," said Dr. Barry Sample, director, science and technology, Quest Diagnostics Employer Solutions. "These findings are especially concerning because they suggest that the recent focus on illicit marijuana use may be too narrow, and that other dangerous drugs are potentially making a comeback."

"The increases in illicit drug positivity in employment drug testing should get employers and policymakers to take notice of the serious risks these drugs create for productivity, health and safety," said Robert DuPont, M.D. former director of the National Institute on Drug Abuse (NIDA). "Many of these substances are clearly associated with impaired physical and cognitive functions. This analysis by Quest Diagnostics suggests that illicit drug use among workers is increasing broadly for the first time in years in the United States. Public and private employers might want to consider revisiting existing substance abuse policies to ensure that they are taking the necessary precautions to protect their workplace, employees and businesses."

The Quest Diagnostics Drug Testing Index analyzed urine, oral fluid and hair drug tests performed by Quest Diagnostics workplace drug testing laboratories across the United States in 2014. Test results are examined according to three categories of workers: employees with private companies (general U.S. workforce); employees subject to federal drug testing rules, including safety-sensitive employees such as truck drivers, train operators, airline and nuclear power plant workers (federally-mandated, safety-sensitive workforce); and a combination of both groups (combined U.S. workforce). Quest Diagnostics has analyzed annual workplace drug testing data since 1988.

Marijuana Positivity Increases Nationally for the Second Consecutive Year

Marijuana continues to be the most commonly detected illicit drug, according to the Quest Diagnostics Drug Testing Index. Marijuana positivity in the general U.S. workforce increased 14.3 percent (2.4% in 2014 vs. 2.1% in 2013). By comparison, marijuana positivity in the same workforce category increased 5 percent between

2012 and 2013. In the safety-sensitive workforce, marijuana positivity increased 6 percent (0.71% vs. 0.67%) between 2013 and 2014, compared to 5.6 percent between 2012 and 2013. The steady increase in the marijuana positivity rate is consistent with findings from other data sources, such as the National Survey of Drug Use and Health (NSDUH).

Quest researchers also analyzed urine drug test data for the U.S. workforce from two states with recreational marijuana-use laws. In Colorado and Washington, the marijuana positivity rate increased 14 percent (2.62% vs. 2.30%) and 16 percent (2.75% vs. 2.38%), respectively, in the general U.S. workforce between 2013 and 2014, roughly parallel to the national average of 14.3 percent. By comparison, the marijuana positivity rate increased 20 percent and 23 percent in Colorado and Washington, respectively, in the general U.S. workforce between 2012 and 2013, compared to the national average of 5 percent.

"We were surprised that marijuana positivity increased at about the same rate in Colorado and Washington as the rest of the United States in 2014, particularly given the sharp increases in the marijuana positivity rate in both of these states in the prior year," said Dr. Sample. "It's unclear if this data suggest a leveling off in marijuana use in these particular states or if some other factor is at work. We also find it notable that the national marijuana positivity rate increased as much as it did in 2014, and question if this means that people are more accepting and therefore more likely to use marijuana recreationally or for therapeutic purposes than in the past even in states where marijuana's use is not clearly sanctioned by state laws. This will be an important area of continued analysis given the national debate about the legality and health impacts of recreational and medicinal marijuana use."

Cocaine Positivity Rises Sharply Across All Testing

The Quest Diagnostics Drug Testing Index analysis showed steady increases in workplace positivity for cocaine in the general U.S. workforce over the past two years, reversing a prolonged period of decline. The positivity rate for cocaine in urine tests increased by 9.1 percent (0.24% vs. 0.22%) between 2013 and 2014. Urine drug tests account for the vast majority of cocaine drug tests. The positivity rate also increased in oral fluid and hair specimens, by 30.6 percent and 13.0 percent, respectively, year over year.

Methamphetamine and Heroin Positivity Rates Continue Upward Trend

Continuing a multi-year upward trend, amphetamines use – specifically the use of methamphetamine – showed an increase across both urine and oral fluid drug tests.

General U.S. workforce data in urine drug tests showed a 7.2 percent year-over-year increase in amphetamines positivity in 2014 compared to 2013 (1.04% vs. 0.97%). In the general U.S. workforce, methamphetamine positivity in urine drug tests increased 21.4 percent (0.17% vs. 0.14%); the positivity rate for oral fluid methamphetamine tests increased 37.5 percent (0.33% vs. 0.24%). Across all specimen types, the positivity rate for amphetamines is now at its highest levels on record and the positivity rate for methamphetamine is at its highest level since 2007.

Amphetamines describe the category, or drug class, that includes both prescription amphetamine drugs like Adderall® and methamphetamine, an illicit drug often known for being produced in clandestine labs. They are a class of central nervous system stimulants that cause increased energy and alertness followed by exhaustion as the effects wear off.

The positivity rate for 6-acetylmorphine, or 6-AM, a specific marker for heroin, doubled in the general U.S. workforce between 2011 and 2014 (to 0.031% in 2014 vs. 0.015% in 2011).

"Our DTI data mirrors research from the National Drug Intelligence Center which also shows that heroin use has increased markedly in recent years. While overall prevalence is low, the escalation in the detection of the 6-AM metabolite indicates heroin use may be growing," said Dr. Barry Sample. "With the high costs associated with prescription opiates, some drug users may be turning to comparatively cheaper alternatives like heroin."

The strengths of the Quest Diagnostics Drug Testing Index analysis include its large sample size, the longitudinal nature of the monitoring, a testing population that is generally reflective of the U.S. workforce and the quality of the company's drug testing services to confirm positive results. Limitations include the selection of the testing population, which is reflective only of results from employers that perform drug testing and a lack of

exact cross-specimen comparisons due to variations in substances for which employers test. Quest Diagnostics Drug Testing Index reports involve analysis of de-identified results from urine, oral fluid and hair drug tests.

For more information about the Quest Diagnostics Drug Testing Index, including comprehensive data from the present report, visit www.QuestDiagnostics.com/DTI.

About the Quest Diagnostics Drug Testing Index™

The Quest Diagnostics Drug Testing Index (DTI) reveals insights into patterns of drug use among the American workforce. Published annually for more than 25 years, the Drug Testing Index examines positivity rates for workplace drugs tested by the company on behalf of employers. Quest Diagnostics publishes these findings as a public service for government, employers, policymakers and the general public. For more information, visit www.QuestDiagnostics.com/DTI or www.EmployerSolutions.com.

About Quest Diagnostics

Quest Diagnostics empowers people to take action to improve health outcomes. Derived from the world's largest database of clinical lab results, our diagnostic insights reveal new avenues to identify and treat disease, inspire healthy behaviors and improve health care management. Quest annually serves one in three adult Americans and half the physicians and hospitals in the United States, and our 45,000 employees understand that, in the right hands and with the right context, our diagnostic insights can inspire actions that transform lives. www.QuestDiagnostics.com.

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Quest Diagnostics Drug Testing Index™

Full Year 2014 Tables

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

(More than 9.1 million tests from January to December 2014)

Year	Drug Positivity 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%
2009	3.6%
2010	3.5%
2011	3.5%
2012	3.5%
2013	3.7%
2014	3.9%

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

Testing Category	2010	2011	2012	2013	2014
Federally-Mandated, Safety-Sensitive Workforce	1.5%	1.7%	1.6%	1.7%	1.7%
General U.S. Workforce	4.2%	4.1%	4.1%	4.3%	4.7%
Combined U.S. Workforce	3.5%	3.5%	3.5%	3.7%	3.9%

QuestDiagnostics.com/DTI

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**Table 3. Positivity Rates By Testing Reason – Urine Drug Tests
(For Federally-Mandated, Safety-Sensitive Workforce)**

(More than 2.5 million tests from January to December 2014)

Testing Reason	2010	2011	2012	2013	2014
Follow-Up	2.4%	2.8%	2.8%	3.0%	3.2%
For Cause	9.7%	7.5%	8.5%	9.3%	9.3%
Periodic	1.0%	1.6%	1.5%	1.3%	0.9%
Post-Accident	2.2%	2.3%	2.4%	2.5%	2.6%
Pre-Employment	1.6%	1.8%	1.7%	1.8%	1.9%
Random	1.4%	1.5%	1.4%	1.5%	1.5%
Returned to Duty	3.3%	2.5%	2.7%	2.8%	2.9%

**Table 4. Positivity Rates By Testing Reason – Urine Drug Tests
(For General U.S. Workforce)**

(More than 6.6 million tests from January to December 2014)

Testing Reason	2010	2011	2012	2013	2014
Follow-Up	6.5%	6.6%	6.4%	7.3%	7.1%
For Cause	26.9%	26.8%	26.3%	27.7%	27.7%
Periodic	1.3%	1.3%	1.3%	1.3%	1.6%
Post-Accident	5.3%	5.3%	5.5%	5.9%	6.5%
Pre-Employment	3.6%	3.5%	3.7%	3.8%	4.0%
Random	5.3%	5.2%	4.9%	5.2%	5.7%
Returned to Duty	5.2%	5.2%	5.4%	6.1%	6.4%

**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 2.5 million tests from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM	0.011% ¹	0.012%	0.014%	0.017%	0.022%
Amphetamines	0.35%	0.44%	0.48%	0.51%	0.54%
Cocaine	0.24%	0.32%	0.27%	0.26%	0.25%
Marijuana	0.69%	0.64%	0.63%	0.67%	0.71%
MDMA	0.05% ¹	0.003%	0.003%	0.004%	0.005%
Opiates	0.17%	0.18%	0.18%	0.19%	0.18%
PCP	0.04%	0.04%	0.03%	0.03%	0.03%

¹October – December 2010

**Table 6. Positivity Rates By Drug Category – Urine Drug Tests
(For General U.S. Workforce, as a percentage of all such tests)**

(More than 6.6 million tests from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM	0.013% ¹	0.015%	0.022%	0.023%	0.031%
Amphetamines	0.66%	0.77%	0.87%	0.97%	1.04%
Barbiturates	0.25%	0.26%	0.25%	0.23%	0.22%
Benzodiazepines	0.79%	0.78%	0.73%	0.74%	0.71%
Cocaine	0.25%	0.27%	0.21%	0.22%	0.24%
Marijuana	2.0%	1.9%	2.0%	2.1%	2.4%
MDMA	0.009%	0.003%	0.001%	0.002%	0.003%
Methadone	0.22%	0.20%	0.19%	0.18%	0.18%
Opiates	0.39%	0.42%	0.44%	0.46%	0.47%
Oxycodones	1.0%	1.1%	0.96%	0.88%	0.80%
PCP	0.01%	0.01%	0.01%	0.01%	0.02%
Propoxyphene	0.38%	0.06%	0.02%	0.01%	0.01%

¹October – December 2010

**Table 7. Positivity Rates By Drug Category – Urine Drug Tests
(For Combined U.S. Workforce, as a percentage of all such tests)**

(More than 9.1 million tests from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM	0.011% ¹	0.013%	0.017%	0.020%	0.025%
Amphetamines	0.58%	0.69%	0.77%	0.85%	0.9%
Barbiturates	0.25%	0.26%	0.25%	0.23%	0.22%
Benzodiazepines	0.79%	0.78%	0.73%	0.74%	0.71%
Cocaine	0.25%	0.28%	0.23%	0.23%	0.24%
Marijuana	1.7%	1.6%	1.6%	1.7%	1.9%
MDMA	0.007%	0.003%	0.002%	0.003%	0.004%
Methadone	0.22%	0.20%	0.19%	0.18%	0.18%
Opiates	0.34%	0.36%	0.37%	0.39%	0.39%
Oxycodones	1.0%	1.1%	0.96%	0.88%	0.8%
PCP	0.02%	0.02%	0.02%	0.02%	0.02%
Propoxyphene	0.38%	0.06%	0.02%	0.01%	0.01%

¹October – December 2010

**Table 8. Non-Negative Rates By Specimen Validity Test (SVT)² Category – Urine Drug Tests
(For Federally-Mandated, Safety-Sensitive Workforce, as a percentage of all such tests)**

(More than 2.5 million tests from January to December 2014)

SVT Category	2010	2011	2012	2013	2014
Acid-Base	0.03%	0.03%	0.03%	0.03%	0.02%
Invalid	0.09%	0.09%	0.11%	0.18%	0.16%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.06%	0.06%	0.05%	0.05%	0.05%

²Specimen 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. Non-Negative Rates by Drug/SVT Category – Urine Drug Tests
(For General U.S. Workforce, as a percentage of all non-negatives)**

(More than 6.6 million tests from January to December 2014)

SVT Category	2010	2011	2012	2013	2014
Acid-Base	0.001%	0.001%	0.001%	0.001%	0.001%
Invalid	0.13%	0.14%	0.15%	0.13%	0.13%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.02%	0.01%	0.01%	0.02%	0.02%

**Table 10. Non-Negative Rates by Drug/SVT Category – Urine Drug Tests
(For Federally-Mandated, Safety-Sensitive Workforce, as a percentage of all non-negatives)**

(More than 48 thousand non-negative test results from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM		0.62%	0.75%	0.87%	1.12%
Acid-Base	1.70%	1.60%	1.40%	1.30%	1.08%
Amphetamines	21.30%	24.60%	26.50%	26.30%	27.87%
Cocaine	14.40%	17.50%	14.90%	13.40%	12.58%
Invalid	5.30%	4.90%	6.36%	9.10%	7.95%
Marijuana	41.20%	35.60%	35.24%	34.60%	36.08%
MDMA		0.14%	0.17%	0.21%	0.24%
Opiates	10.50%	9.70%	9.90%	10.00%	9.24%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
PCP	2.20%	2.10%	1.80%	1.50%	1.31%
Substituted	3.60%	3.20%	3.00%	2.70%	2.51%

**Table 11. Non-Negative Rates by Drug/SVT Category – Urine Drug Tests
(For General U.S. Workforce, as a percentage of all non-negatives)**

(More than 338 thousand non-negative test results from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM		0.06%	0.09%	0.11%	0.14%
Acid-Base	0.03%	0.03%	0.03%	0.03%	0.03%
Amphetamines	14.70%	17.50%	19.30%	20.40%	20.20%
Barbiturates	3.50%	3.70%	3.50%	3.10%	2.84%
Benzodiazepines	8.50%	8.70%	9.60%	9.30%	8.56%
Cocaine	5.60%	6.10%	4.80%	4.60%	4.70%
Invalid	2.90%	3.20%	3.30%	2.90%	2.53%
Marijuana	45.40%	44.30%	43.40%	44.00%	45.91%
MDMA		0.01%	0.01%	0.01%	0.02%
Methadone	2.70%	2.60%	2.30%	2.20%	2.13%
Methaqualone	0.000%	0.000%	0.000%	0.000%	0.000%
Opiates	8.80%	9.50%	9.80%	9.80%	9.63%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Oxycodones	2.70%	3.10%	3.00%	2.80%	2.55%
PCP	0.33%	0.32%	0.30%	0.30%	0.36%
Propoxyphene	4.50%	0.71%	0.23%	0.11%	0.06%
Substituted	0.40%	0.26%	0.31%	0.32%	0.35%

**Table 12. Non-Negative Rates by Drug/ SVT Category – Urine Drug Tests
(For Combined U.S. Workforce, as a percentage of all non-negatives)**

(More than 387 thousand non-negative test results from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
6-AM		0.12%	0.17%	0.20%	0.26%
Acid-Base	0.22%	0.23%	0.20%	0.19%	0.16%
Amphetamines	15.40%	18.40%	20.20%	21.20%	21.16%
Barbiturates	3.10%	3.20%	3.10%	2.70%	2.48%
Benzodiazepines	7.60%	7.60%	8.50%	8.10%	7.48%
Cocaine	6.60%	7.50%	6.00%	5.80%	5.69%
Invalid	3.20%	3.40%	3.70%	3.70%	3.21%
Marijuana	44.90%	43.30%	42.40%	42.90%	44.67%
MDMA		0.03%	0.03%	0.04%	0.05%
Methadone	2.40%	2.30%	2.00%	1.90%	1.86%
Methaqualone	0.000%	0.000%	0.000%	0.000%	0.000%
Opiates	9.00%	9.50%	9.80%	9.80%	9.59%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Oxycodones	2.40%	2.70%	2.60%	2.50%	2.23%
PCP	0.54%	0.54%	0.48%	0.44%	0.48%
Propoxyphene	4.00%	0.62%	0.20%	0.10%	0.06%
Substituted	0.76%	0.62%	0.63%	0.62%	0.62%

**Table 13. Positivity Rates By Testing Category – Oral Fluid Drug Tests
(For General U.S. Workforce)**

(More than 800 thousand tests from January to December 2014)

2010	2011	2012	2013	2014
4.4%	4.3%	5.5%	6.7%	7.7%

**Table 14. Positivity Rates By Testing Reason – Oral Fluid Drug Tests
(For General U.S. Workforce)**

(More than 800 thousand tests from January to December 2014)

Testing Reason	2010	2011	2012	2013	2014
Follow-Up	10.4%	8.3%	11.4%	9.0%	10.0%
For Cause	21.2%	21.8%	21.6%	28.5%	24.1%
Post-Accident	3.9%	4.2%	4.0%	4.6%	4.9%
Pre-Employment	4.4%	4.4%	5.7%	6.7%	7.6%
Random	3.6%	3.3%	4.1%	6.9%	9.5%
Returned to Duty	4.1%	4.0%	6.3%	6.7%	8.7%

**Table 15. Positivity Rates By Drug Category – Oral Fluid Drug Tests
(For General U.S. Workforce)**

(More than 800 thousand tests from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
Amphetamine	0.23%	0.25%	0.43%	0.57%	0.57%
Cocaine/Metabolite	0.46%	0.41%	0.31%	0.36%	0.47%
Marijuana	2.8%	2.7%	4.0%	5.1%	6.0%
Methamphetamines	0.13%	0.12%	0.16%	0.24%	0.33%
Opiates	0.90%	0.97%	0.88%	0.83%	0.85%
PCP	0.02%	0.02%	0.02%	0.02%	0.02%

**Table 16. Positivity Rates By Testing Category – Hair Drug Tests
(For General U.S. Workforce)**

(More than 210 thousand tests from January to December 2014)

2010	2011	2012	2013	2014
7.2%	7.7%	5.6%	7.4%	9.6%

**Table 17. Positivity Rates By Testing Reason – Hair Drug Tests
(For General U.S. Workforce)**

(More than 210 thousand tests from January to December 2014)

Testing Reason	2010	2011	2012	2013	2014
Pre-Employment	5.6%	6.0%	4.7%	6.0%	7.9%
Random	10.1%	10.9%	6.3%	9.1%	10.7%

**Table 18. Positivity Rates By Drug Category – Hair Drug Tests
(For General U.S. Workforce)**

(More than 210 thousand tests from January to December 2014)

Drug Category	2010	2011	2012	2013	2014
Amphetamines (Methamphetamine)	0.90%	0.91%	0.77%	1.2%	1.2%
Cocaine	2.3%	2.5%	2.3%	2.3%	2.6%
Marijuana	4.5%	4.8%	2.8%	4.3%	6.5%
Opiates	0.08%	0.15%	0.18%	0.19%	0.21%
PCP	0.01%	0.01%	0.01%	0.02%	0.06%

**Table 19. Positivity Rates for Methamphetamine – Urine Drug Tests
(As a percentage of all tests for “amphetamines”)**

Testing Category	2010	2011	2012	2013	2014
Federally-Mandated, Safety-Sensitive Workforce	0.12%	0.14%	0.14%	0.15%	0.15%
General U.S. Workforce	0.10%	0.09%	0.11%	0.14%	0.17%