

News from Quest Diagnostics

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Workforce Drug Test Positivity Rate Increases for the First Time in 10 Years, Driven by Marijuana and Amphetamines, Finds Quest Diagnostics Drug Testing Index™ Analysis of Employment Drug Tests

Colorado and Washington experience surges in marijuana tests positivity rate, but data suggests state legalization of recreational marijuana may not be sole driver of increases

Madison, N.J., September 11, 2014 – The percentage of positive drug tests among American workers has increased for the first time in more than a decade, fueled by a rise in marijuana and amphetamines, according to an analysis of 8.5 million urine, oral fluid and hair workplace drug test results released today by Quest Diagnostics (NYSE: DGX), the world's leading provider of diagnostic information services.

The Quest Diagnostics Drug Testing Index (DTI) shows that the positivity rate for 7.6 million urine drug tests in the combined U.S. workforce increased to 3.7 percent in 2013, compared to 3.5 percent in 2012. The relative increase of 5.7 percent year-over-year is the first time the positivity rate for combined national workplace urine drug tests has increased since 2003. Quest Diagnostics has analyzed annual workplace drug testing data since 1988.

“After years of declines, the prevalence of positive workforce drug tests is increasing,” said Dr. Barry Sample, director, science and technology, Quest Diagnostics Employer Solutions, a business of Quest Diagnostics. “This increase indicates that employers should be aware of the potential for drug use by their workers and the risk that represents for the health and safety of their employees and the public.”

The 2013 Drug Testing Index analyzed urine, oral fluid and hair drug tests performed by Quest Diagnostics workplace drug testing laboratories across the United States. Test results are analyzed according to three categories of workers: employees with private companies (U.S. general workforce); employees subject to federal drug testing rules, including safety-sensitive truck drivers, train operators, airline and nuclear power plant workers (federally mandated safety-sensitive workers); and a combination of both groups (combined U.S. workforce).

Marijuana Positivity Increases 6.2 Percent Nationally in Urine Drug Tests, but by Double Digits in Colorado and Washington

Marijuana continues to be the most commonly detected illicit drug, according to the DTI analysis of urine drug tests. Marijuana positivity in the combined U.S. workforce increased 6.2 percent, to 1.7 percent in 2013 compared to 1.6 percent in 2012. In the safety-sensitive workforce, marijuana positivity increased 5.6 percent (0.67% vs. 0.63%). In the general U.S. workforce, the positivity rate increased 5 percent, to 2.1 percent in 2013 compared to 2.0 percent in the prior year. These increased positivity rates are consistent with findings from the 2012 National Survey on Drug Use and Health (NSDUH), which showed an increase in self-reported past-month marijuana use between 2007 and 2012.

An analysis of urine drug test data for the combined U.S. workforce from the two states with “recreational” use laws – Colorado and Washington – showed marijuana positivity rates increased 20 and 23 percent, respectively, in the general workforce between 2012 and 2013, compared to the 5 percent average increase among the U.S. general workforce in all fifty states. However, both Colorado and Washington experienced dramatic increases in marijuana positivity rates prior to legalization at the end of 2012. From 2009 to 2010, Colorado experienced a 22

percent increase and Washington a 10 percent decline in positivity. From 2011 to 2012, Colorado experienced a 3 percent increase and Washington an 8 percent increase in positivity.

“Washington and Colorado are believed by many to foreshadow future trends in ‘recreational’ marijuana use. While Quest’s Drug Testing Index shows dramatic spikes in marijuana positivity rates over the past year, a longer view of the data suggests a more complex picture,” said Dr. Sample. “It is possible that relaxed societal views of marijuana use in those two states, relative to others, may in part be responsible for the recent increase in positivity rates. Yet, this doesn’t explain why both states also experienced steep rises – and declines – in positivity in recent years. We will be very interested to see how our data evolves over the next year or two in these two states relative to those that have not legalized so-called ‘recreational’ marijuana.

“What we do know is that workforce positivity for marijuana is definitely on the rise across the United States. It is important for people to remember that while some states have legalized marijuana, the federal government has not. Employers generally have the authority to restrict the ‘recreational’ use of marijuana by employees and impose sanctions, including termination, on employees with positive drug tests in all 50 states,” added Dr. Sample.

Detection of Recent Usage of Marijuana Continues to Increase Significantly in Oral Fluid Testing

In addition to urine drug tests for marijuana, Quest also provides oral fluid testing, and for the second consecutive year, DTI data showed a marked increase in marijuana detection in oral fluid. Oral fluid positivity rates for marijuana climbed 27 percent (5.1% vs. 4.0%) in 2013 compared to 2012 after a dramatic increase of 48 percent (4.0% vs. 2.7%) in 2012 compared to 2011. While the trend of higher positivity rates may be partially attributed to an uptick in marijuana use among testing subjects, other variables including observed collections associated with oral fluid testing and the introduction of Quest Diagnostics new oral fluid testing technology in 2011 are also contributing factors to the increase in oral fluid marijuana positivity rates.

Methamphetamine Positivity Increases Across All Testing Types

Amphetamines are a class of central nervous system stimulants that includes methamphetamine (best known for being produced in clandestine labs) and prescription medications for conditions such as ADHD and narcolepsy.

Continuing a multi-year upward trend, amphetamines use – specifically the use of methamphetamine – showed an increase across all three specimen types. Combined U.S. workforce data in urine showed a 10 percent (0.85% vs. 0.77%) year-over-year increase in amphetamines positivity in 2013 compared to 2012. In the U.S. general workforce, methamphetamine positivity in urine drug tests increased 27 percent (0.14% vs. 0.11%); oral fluid methamphetamine positivity increased by 50 percent (0.24% vs. 0.16%). In addition, the positivity rate in hair testing jumped by 55 percent (1.2% vs. 0.77%). Amphetamines positivity rates are now at their highest levels on record and methamphetamine positivity rates are at their highest levels since 2007, across all specimen types.

Oxycodones Positivity Declines for the Second Consecutive Year

The DTI data also reported declines for prescription opiates positivity in urine drug tests. Prescription opiates refer to drugs used for pain management, such as hydrocodone and oxycodones. The current data shows oxycodones positivity declined 8.3 percent (0.88% vs. 0.96%) between 2013 and 2012 and 12.7 percent (0.96% vs. 1.1%) between 2012 and 2011 in the combined U.S. workforce. Four states experienced double-digit declines in oxycodones positivity rates in both 2013 and 2012: Florida, Massachusetts, New Jersey and Ohio. Hydrocodone positivity remained at 1.3 percent between 2012 and 2013.

The strengths of the DTI 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. DTI 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, visit www.QuestDiagnostics.com/DTI.

About the Quest Diagnostics Drug Testing Index™

The Quest Diagnostics Drug Testing Index gauges positivity trends based on workforce drug tests. The findings are published as a public service for government, media and industry and are considered a benchmark for national trends in workplace drug use. DTI reports examine positivity rates for workplace drugs tested by the company on behalf of employers among three major testing populations: federally mandated safety-sensitive workers; the general workforce; and the combined U.S. workforce. For more information, visit www.QuestDiagnostics.com/DTI or www.EmployerSolutions.com.

About Quest Diagnostics

Quest Diagnostics is the world's leading provider of diagnostic information services that patients and doctors need to make better healthcare decisions. The company offers the broadest access to diagnostic information 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 diagnostic tests and advanced healthcare information technology solutions that help improve patient care. Additional company information is available at QuestDiagnostics.com. Follow us on [LinkedIn/Quest Diagnostics Employer Solutions](https://www.linkedin.com/company/quest-diagnostics), [Facebook.com/QuestDiagnostics](https://www.facebook.com/QuestDiagnostics) and [Twitter.com/QuestDX](https://twitter.com/QuestDX).

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

(More than 7.6 million tests from January to December 2013)

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%
2009	3.6%
2010	3.5%
2011	3.5%
2012	3.5%
2013	3.7%

Positivity Rates By Testing Category – Urine Drug Tests

Testing Category	2009	2010	2011	2012	2013
Federally-Mandated, Safety-Sensitive Workforce	1.5%	1.5%	1.7%	1.6%	1.7 %
General U.S. Workforce	4.2%	4.2%	4.1%	4.1%	4.3%
Combined U.S. Workforce	3.6%	3.5%	3.5%	3.5%	3.7%

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

(More than 1.9 million tests from January to December 2013)

Testing Reason	2009	2010	2011	2012	2013
Follow-Up	2.5%	2.4%	2.8%	2.8%	3.0%
For Cause	11.1%	9.7%	7.5%	8.5%	9.3%
Periodic	0.80%	1.0%	1.6%	1.5%	1.3%
Post-Accident	2.2%	2.2%	2.3%	2.4%	2.5%
Pre-Employment	1.5%	1.6%	1.8%	1.7%	1.8%
Random	1.4%	1.4%	1.5%	1.4%	1.5%
Returned to Duty	3.0%	3.3%	2.5%	2.7%	2.8%

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

(More than 5.6 million tests from January to December 2013)

Testing Reason	2009	2010	2011	2012	2013
Follow-Up	7.5%	6.5%	6.6%	6.4%	7.3%
For Cause	26.8%	26.9%	26.8%	26.3%	27.7%
Periodic	1.5%	1.3%	1.3%	1.3%	1.3%
Post-Accident	5.3%	5.3%	5.3%	5.5%	5.9%
Pre-Employment	3.4%	3.6%	3.5%	3.7%	3.8%
Random	5.4%	5.3%	5.2%	4.9%	5.2%
Returned to Duty	4.6%	5.2%	5.2%	5.4%	6.1%

**Positivity Rates By Drug Category – Urine Drug Tests
(For Federally-Mandated, Safety-Sensitive Workforce, as a percentage of all such tests)**

(More than 1.9 million tests from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM		0.011% ¹	0.012%	0.014%	0.017%
Amphetamines	0.29%	0.35%	0.44%	0.48%	0.51%
Cocaine	0.24%	0.24%	0.32%	0.27%	0.26%
Marijuana	0.69%	0.69%	0.64%	0.63%	0.67%
MDMA		0.005% ¹	0.003%	0.003%	0.004%
Opiates	0.21%	0.17%	0.18%	0.18%	0.19%
PCP	0.04%	0.04%	0.04%	0.03%	0.03%

¹October – December 2010

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

(More than 5.6 million tests from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM		0.013% ¹	0.015%	0.022%	0.023%
Amphetamines	0.57%	0.66%	0.77%	0.87%	0.97%
Barbiturates	0.26%	0.25%	0.26%	0.25%	0.23%
Benzodiazepines	0.84%	0.79%	0.78%	0.73%	0.74%
Cocaine	0.29%	0.25%	0.27%	0.21%	0.22%
Marijuana	2.0%	2.0%	2.0%	2.0%	2.1%
MDMA	0.015%	0.009%	0.003%	0.001%	0.002%
Methadone	0.23%	0.22%	0.20%	0.19%	0.18%
Opiates	0.45%	0.39%	0.42%	0.44%	0.46%
Oxycodones	1.0%	1.0%	1.1%	0.96%	0.88%
PCP	0.02%	0.01%	0.01%	0.01%	0.01%
Propoxyphene	0.48%	0.38%	0.06%	0.02%	0.01%

¹October – December 2010

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

(More than 7.6 million tests from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM		0.011% ¹	0.013%	0.017%	0.020%
Amphetamines	0.50%	0.58%	0.69%	0.77%	0.85%
Barbiturates	0.26%	0.25%	0.26%	0.25%	0.23%
Benzodiazepines	0.84%	0.79%	0.78%	0.73%	0.74%
Cocaine	0.28%	0.25%	0.28%	0.23%	0.23%
Marijuana	1.7%	1.7%	1.6%	1.6%	1.7%
MDMA	0.015%	0.007%	0.003%	0.002%	0.003%
Methadone	0.23%	0.22%	0.20%	0.19%	0.18%
Opiates	0.39%	0.34%	0.36%	0.37%	0.39%
Oxycodones	1.0%	1.0%	1.1%	0.96%	0.88%
PCP	0.02%	0.02%	0.02%	0.02%	0.02%
Propoxyphene	0.48%	0.38%	0.06%	0.02%	0.01%

¹October – December 2010

**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 1.9 million tests from January to December 2013)

SVT Category	2009	2010	2011	2012	2013
Acid-Base	0.03%	0.03%	0.03%	0.03%	0.03%
Invalid	0.09%	0.09%	0.09%	0.11%	0.18%
Oxidizing adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Substitution	0.06%	0.06%	0.06%	0.05%	0.05%

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

(More than 5.6 million test results from January to December 2013)

SVT Category	2009	2010	2011	2012	2013
Acid-Base	0.001%	0.001%	0.001%	0.001%	0.001%
Invalid	0.12%	0.13%	0.14%	0.15%	0.13%
Oxidizing adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.02%	0.02%	0.01%	0.01%	0.02%

**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 38 thousand non-negative test results from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM			0.62%	0.75%	0.87%
Acid-Base	1.70%	1.70%	1.60%	1.40%	1.30%
Amphetamines	17.40%	21.30%	24.60%	26.50%	26.30%
Cocaine	14.80%	14.40%	17.50%	14.90%	13.40%
Invalid	5.50%	5.30%	4.90%	6.36%	9.10%
Marijuana	41.70%	41.20%	35.60%	35.24%	34.60%
MDMA			0.14%	0.17%	0.21%
Opiates	12.60%	10.50%	9.70%	9.90%	10.00%
Oxidizing adulterants	0.01%	0.00%	0.00%	0.00%	0.00%
PCP	2.50%	2.20%	2.10%	1.80%	1.50%
Substituted	3.80%	3.60%	3.20%	3.00%	2.70%

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

(More than 266 thousand non-negative test results from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM			0.06%	0.09%	0.11%
Acid-Base	0.02%	0.03%	0.03%	0.03%	0.03%
Amphetamines	12.60%	14.70%	17.50%	19.30%	20.40%
Barbiturates	3.50%	3.50%	3.70%	3.50%	3.10%
Benzodiazepines	9.00%	8.50%	8.70%	9.60%	9.30%
Cocaine	6.40%	5.60%	6.10%	4.80%	4.60%
Invalid	2.70%	2.90%	3.20%	3.30%	2.90%
Marijuana	44.00%	45.40%	44.30%	43.40%	44.00%
MDMA			0.01%	0.01%	0.01%
Methadone	2.70%	2.70%	2.60%	2.30%	2.20%
Methaqualone	0.00%	0.00%	0.00%	0.00%	0.00%
Opiates	10.00%	8.80%	9.50%	9.80%	9.80%
Oxidizing adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Oxycodones	2.70%	2.70%	3.10%	3.00%	2.80%
PCP	0.34%	0.33%	0.32%	0.30%	0.30%
Propoxyphene	5.60%	4.50%	0.71%	0.23%	0.11%
Substituted	0.40%	0.40%	0.26%	0.31%	0.32%

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

(More than 305 thousand non-negative test results from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
6-AM			0.12%	0.17%	0.20%
Acid-Base	0.20%	0.22%	0.23%	0.20%	0.19%
Amphetamines	13.10%	15.40%	18.40%	20.20%	21.20%
Barbiturates	3.20%	3.10%	3.20%	3.10%	2.70%
Benzodiazepines	8.00%	7.60%	7.60%	8.50%	8.10%
Cocaine	7.30%	6.60%	7.50%	6.00%	5.80%
Invalid	3.00%	3.20%	3.40%	3.70%	3.70%
Marijuana	43.70%	44.90%	43.30%	42.40%	42.90%
MDMA			0.03%	0.03%	0.04%
Methadone	2.40%	2.40%	2.30%	2.00%	1.90%
Methaqualone	0.00%	0.00%	0.00%	0.00%	0.00%
Opiates	10.30%	9.00%	9.50%	9.80%	9.80%
Oxidizing adulterants	0.00%	0.00%	0.00%	0.00%	0.00%
Oxycodones	2.40%	2.40%	2.70%	2.60%	2.50%
PCP	0.56%	0.54%	0.54%	0.48%	0.44%
Propoxyphene	5.00%	4.00%	0.62%	0.20%	0.10%
Substituted	0.76%	0.76%	0.62%	0.63%	0.62%

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

(More than 800 thousand tests from January to December 2013)

2009	2010	2011	2012	2013
4.2%	4.4%	4.3%	5.5%	6.7%

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

(More than 800 thousand tests from January to December 2013)

Testing Reason	2009	2010	2011	2012	2013
Follow-Up	9.8%	10.4%	8.3%	11.4%	9.0%
For Cause	17.9%	21.2%	21.8%	21.6%	28.5%
Post-Accident	3.7%	3.9%	4.2%	4.0%	4.6%
Pre-Employment	4.3%	4.4%	4.4%	5.7%	6.7%
Random	3.6%	3.6%	3.3%	4.1%	6.9%
Returned to Duty	5.1%	4.1%	4.0%	6.3%	6.7%

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

(More than 800 thousand tests from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
Amphetamine	0.17%	0.23%	0.25%	0.43%	0.57%
Cocaine/Metabolite	0.50%	0.46%	0.41%	0.31%	0.36%
Marijuana	2.7%	2.8%	2.7%	4.0%	5.1%
Methamphetamines	0.13%	0.13%	0.12%	0.16%	0.24%
Opiates	0.86%	0.90%	0.97%	0.88%	0.83%
PCP	0.01%	0.02%	0.02%	0.02%	0.02%

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

(More than 190 thousand tests from January to December 2013)

2009	2010	2011	2012	2013
7.0%	7.2%	7.7%	5.6%	7.4%

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

(More than 190 thousand tests from January to December 2013)

Testing Reason	2009	2010	2011	2012	2013
Pre-Employment	4.8%	5.6%	6.0%	4.7%	6.0%
Random	10.2%	10.1%	10.9%	6.3%	9.1%

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

(More than 190 thousand tests from January to December 2013)

Drug Category	2009	2010	2011	2012	2013
Amphetamines (Methamphetamine)	1.2%	0.90%	0.91%	0.77%	1.2%
Cocaine	3.3%	2.3%	2.5%	2.3%	2.3%
Marijuana	3.0%	4.5%	4.8%	2.8%	4.3%
Opiates	0.15%	0.08%	0.15%	0.18%	0.19%
PCP	0.01%	0.01%	0.01%	0.01%	0.02%