

2021 Annual Report and Industry Insights

Drug Testing Index™ and Industry Insights

▶ A comprehensive analysis of workforce drug use trends



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The Quest Diagnostics Drug Testing Index™ (DTI) reveals insights into patterns of drug use among the American workforce. Published annually since 1988, 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.

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Marijuana Workforce Drug Test Positivity Continues Double-Digit Increases to Keep Overall Drug Positivity Rates at Historically High Levels



The COVID-19 pandemic did not dampen workforce drug testing positivity for marijuana, which continued to increase last year in the general U.S. workforce, according to a new analysis released today by Quest Diagnostics, the world's leading provider of diagnostic information services. This study is thought to be the first large-scale analysis of de-identified results of laboratory workforce drug tests performed during the COVID-19 pandemic.

The overall positivity rate in the combined U.S. workforce based on more than seven million urine drug tests collected between January and December 2020 was down only slightly in 2020 (4.4%) compared to 2019 (4.5%, a sixteen-year high). Positivity in the federally mandated, safety-sensitive workforce based on more than 2 million urine drug tests declined 8.3 percent (2.4% in 2019 versus 2.2% in 2020) but was still 10 percent higher than the 2016 rate (5 years prior). In the general U.S. workforce, positivity increased 3.8 percent (5.3% in 2019 versus 5.5% in 2020) and was 12.2 percent higher than in 2016.

As positivity for most drug categories, other than marijuana, declined or remained flat in the combined U.S. workforce over the past five years, amphetamines (which includes methamphetamine) persisted at 1.1 percent positive each year.

“Driven largely by surging rates of marijuana general U.S. workforce positives and steady rates of amphetamines positives, the rate of drug positivity remained stubbornly high despite seismic shifts to the workplace caused by the COVID-19 pandemic,” said Barry Sample, Ph.D., senior director of science and technology, Quest Diagnostics. “However, as we see upticks in hiring and many employees returning to the workplace, it is important that employers consider workforce drug testing as a way to keep the workplace, their customers and the community safe.”

“Impairment, whether it be by drugs, alcohol, fatigue or stress, decreases the safety of the workforce,” said Jenny Burke, senior director of impairment practice, National Safety Council. “The DTI results, reflecting decreases in many drug categories, occurred in a unique year. Even though these are down, we must continue to educate people about the impairing impacts of these substances. And, as states and the federal government consider changes to the legality of marijuana, we can’t take for granted that they also understand the impairing impact of THC. The safety of people who share the roadways and workplaces with impaired people needs to be a priority.”

Positivity down or flat for most drug categories, but increase for ecstasy

Urine drug test results in the general U.S. workforce declined in eight drug categories but stayed the same in two drug categories (excluding propoxyphene, which was withdrawn from the U.S. market a decade ago). Positivity for cocaine declined 18.5 percent (0.27% in 2019 versus 0.22% in 2020), the semi-synthetic opiates (hydrocodone/hydromorphone) declined 10.8 percent (0.37% in 2019 versus 0.33% in 2020), oxycodone group of opiates (oxycodone/oxymorphone) declined 14.7 percent (0.34% in 2019 versus 0.29% in 2020) and benzodiazepines declined 9.3 percent (0.43% in 2019 versus 0.39% in 2020). While the positivity for MDMA/MDA 3,4-Methylenedioxymethamphetamine (commonly known as ecstasy) increased by 25 percent (0.008% in 2019 versus 0.010% in 2020) and has demonstrated small, year-over-year increases, the positivity rate remains very low at 1 in every 10,000 (0.010%) tests.

Positivity rates declined in federally mandated, safety-sensitive workforce testing categories

Urine drug test results for the federally mandated, safety-sensitive workforce declined in all drug categories other than phencyclidine (PCP), which remained at 0.011 percent, same as in 2019. Of note, positivity for marijuana declined 10.2 percent (0.88% in 2019 versus 0.79% in 2020), cocaine declined 20 percent (0.25% in 2019 versus 0.20% in 2020), semi-synthetic opiates (hydrocodone/hydromorphone) declined 14.3 percent (0.35% in 2019 versus 0.30% in 2020) and the oxycodone group of opiates (oxycodone/oxymorphone) declined 19.2 percent (0.26% in 2019 versus 0.21% in 2020).

The marijuana positivity rate of post-accident test results grew faster than the rate for pre-employment testing.

Marijuana continued double-digit year-over-year increases in the general U.S. workforce, with lower positivity rates in states with only medical marijuana use or no form of legalized marijuana use versus states with legalized recreational statutes

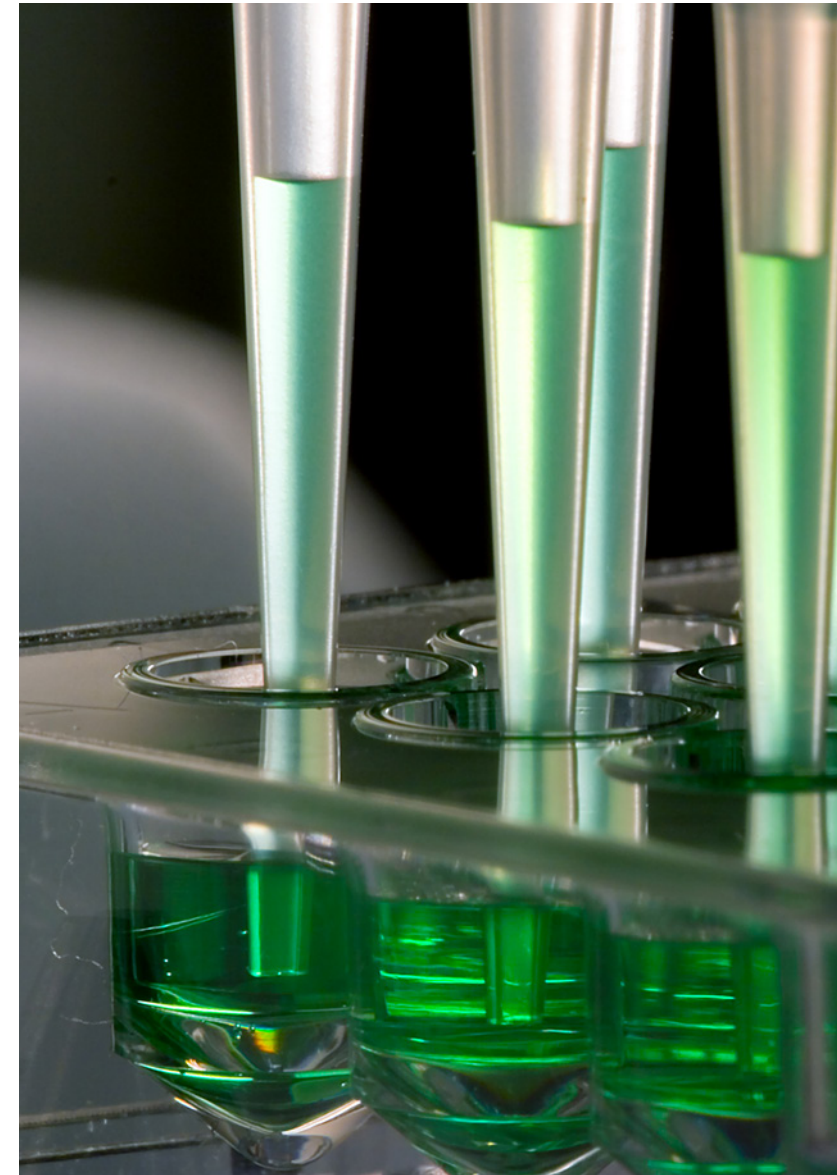
Marijuana positivity surged ahead in 2020 in the U.S. general workforce and across specimen types (urine, oral fluid, and hair). In the U.S. general workforce, marijuana positivity increased 16.1 percent in urine testing (3.1% in 2019 versus 3.6% in 2020), 35.2 percent in oral fluid testing (9.1% in 2019 versus 12.3% in 2020) and 22.5 percent in hair testing (7.1% in 2019 versus 8.7% in 2020).

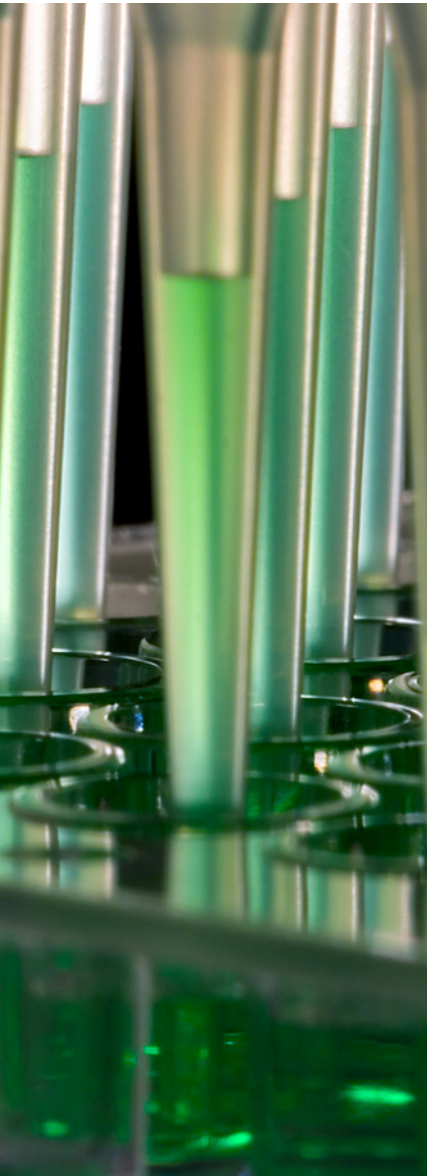
The Drug Testing Index data also showed stark differences between states that have legalized recreational marijuana use versus states that have only legalized medical marijuana use or no form of legal marijuana use. Marijuana positivity surged in states with legal recreational use statutes 118.2 percent from 2012-2020 (2.2% in 2012 versus 4.8% in 2020). In states with only medical marijuana statutes, marijuana positivity increased 68.4 percent (1.9% in 2012 versus 3.2% in 2020). In states with no medical or recreational marijuana statutes, marijuana positives increased 57.9 percent (1.9% in 2012 versus 3.0% in 2020).

“Our data suggest that marijuana positivity has increased sharply nationwide since states began to legalize marijuana in 2012. However, it appears that states where medical marijuana use alone is legal are not experiencing much higher rates of increase than states where neither medical nor recreational use is legal,” Dr. Sample said.

The positivity rate of post-accident test results grew faster than the rate of positivity for pre-employment testing

Between 2012 when the first state legalized recreational marijuana, and 2020, the gap between pre-employment and post-accident marijuana positivity increased each year. In the U.S. general workforce, in 2012, marijuana pre-employment positivity was 1.9





percent and post-accident positivity was 2.4 percent (a 26.3% difference). In 2020, pre-employment marijuana positivity was 3.7 percent and post-accident 6.4 percent (a 73% difference).

“The Drug Testing Index data shows states with recreational marijuana statutes have significantly higher positivity and the year-over-year differences between recreational states and states with medical and no legalization statutes has grown. In addition, while urine drug testing cannot determine whether an individual is under the influence or impaired at the time of test, our post-accident data suggests that marijuana use may play a role in those workplace incidents prompting a drug test,” Dr. Sample said.

Cocaine positivity lowest since 2012 general U.S. workforce

Urine drug test positivity for cocaine in the general U.S. workforce dropped to the lowest level since 2012. Positivity for cocaine declined 18.5 percent (0.27% in 2019 versus 0.22% in 2020). Positivity for cocaine over the past five years declined 21.4 percent (0.28% in 2016 versus 0.22% in 2020).

Workforce positivity increased significantly in multiple industries

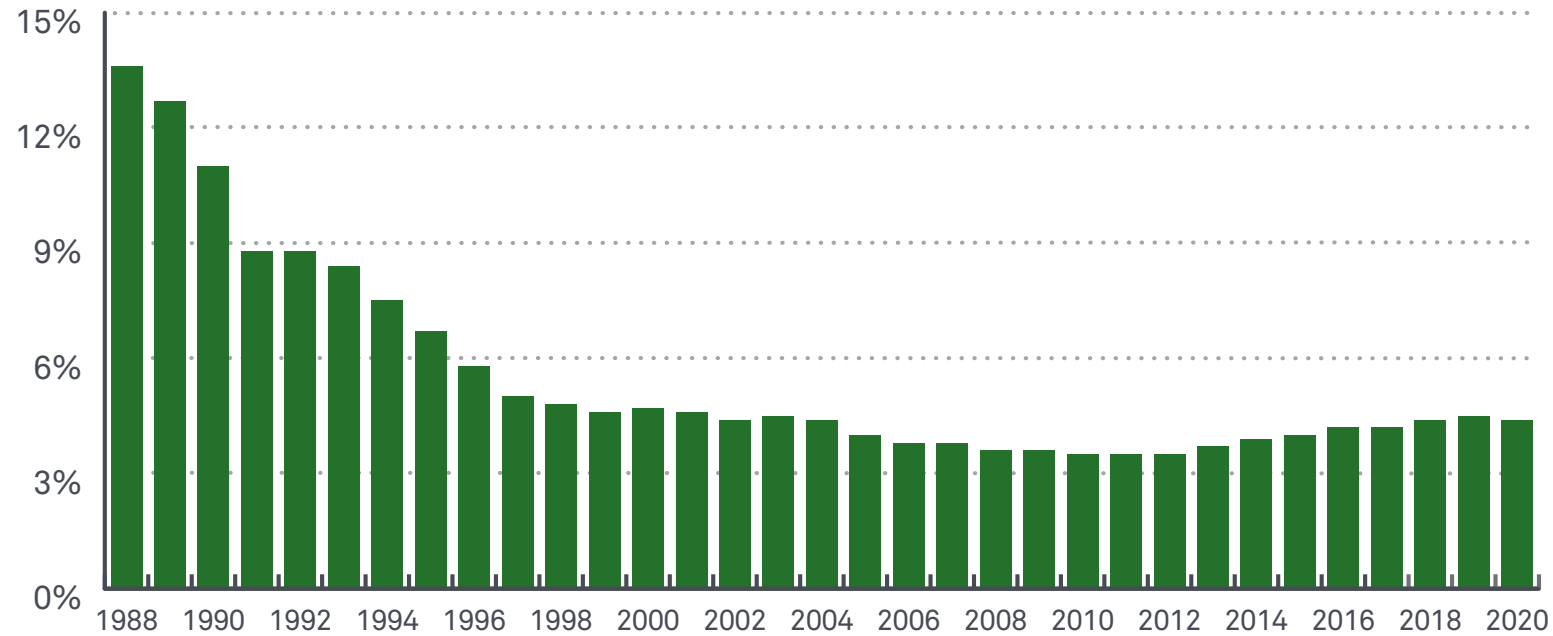
The Quest Diagnostics Drug Testing Index™ Industry Insights of general U.S. workforce positivity rates, based on more than 17 million urine drug test results between 2016 and 2020, shows year-over-year increases in overall workplace drug positivity in 6 of the 17 sectors reported. The Retail Trade industry had the highest overall positivity rates for all drug categories across all five years of the analysis (5.1% in 2016, 5.2% in 2017, 5.4% in 2018, 5.5% in 2019 and 6.2% in 2020). Accommodation and Food Services tied with Retail Trade for the highest positivity in 2020 alone (4.7% in 2016, 4.6% in 2017, 4.9% in 2018, 5.1% in 2019 and 6.2% in 2020). The Accommodations and Food Service category had the highest workforce positivity for marijuana at 6.3 percent, a relative increase of 96.9 percent over five years (3.2% in 2016 versus 6.3% in 2020).

For more information about the Quest Diagnostics Drug Testing Index, visit [QuestDiagnostics.com/DTI](https://www.questdiagnostics.com/DTI).



Annual Positivity Rates | *Annual Report*

Urine Drug Tests - For Combined U.S. Workforce



More than 7 million tests from January to December 2020

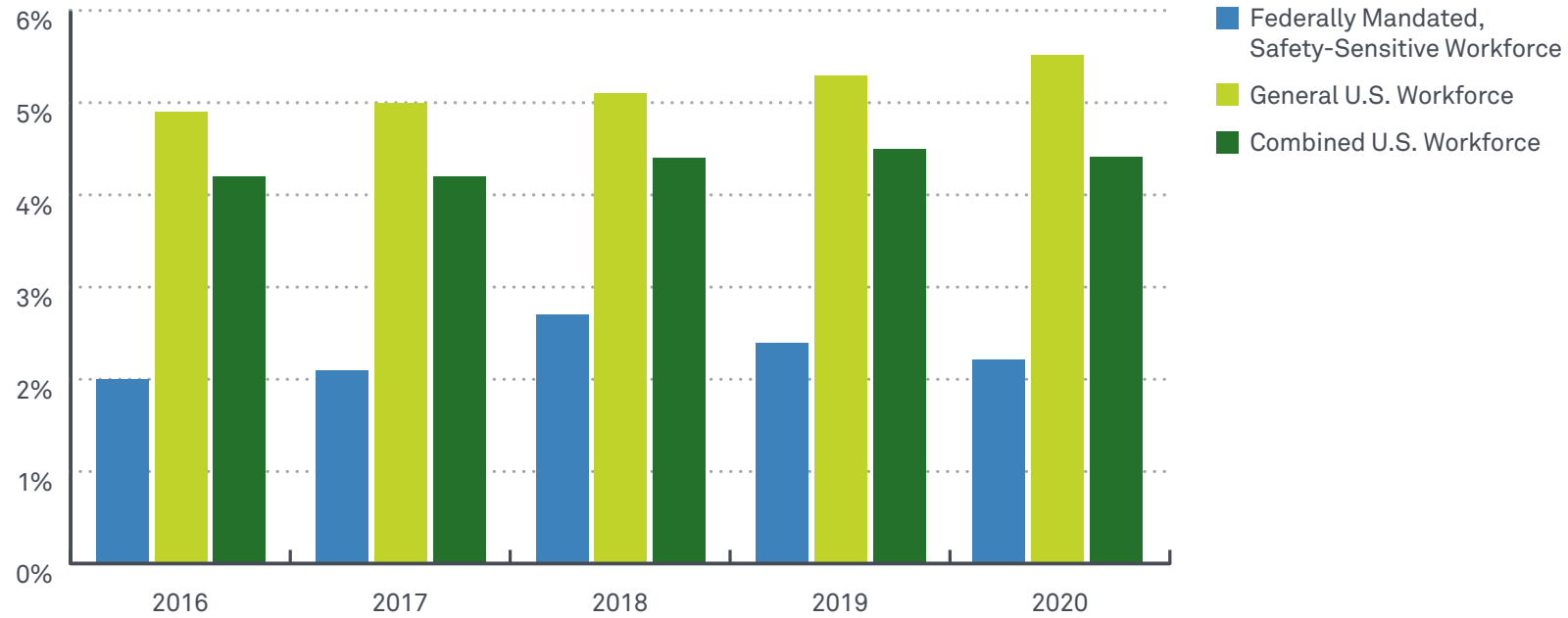
Year	Drug Positivity Rate
1988	13.6%
1989	12.7%
1990	11.0%
1991	8.8%
1992	8.8%
1993	8.4%
1994	7.5%
1995	6.7%
1996	5.8%
1997	5.0%
1998	4.8%

Year	Drug Positivity Rate
1999	4.6%
2000	4.7%
2001	4.6%
2002	4.4%
2003	4.5%
2004	4.4%
2005	4.0%
2006	3.8%
2007	3.8%
2008	3.6%
2009	3.6%

Year	Drug Positivity Rate
2010	3.5%
2011	3.5%
2012	3.5%
2013	3.7%
2014	3.9%
2015	4.0%
2016	4.2%
2017	4.2%
2018	4.4%
2019	4.5%
2020	4.4%

Positivity Rates by Testing Category | *Annual Report*

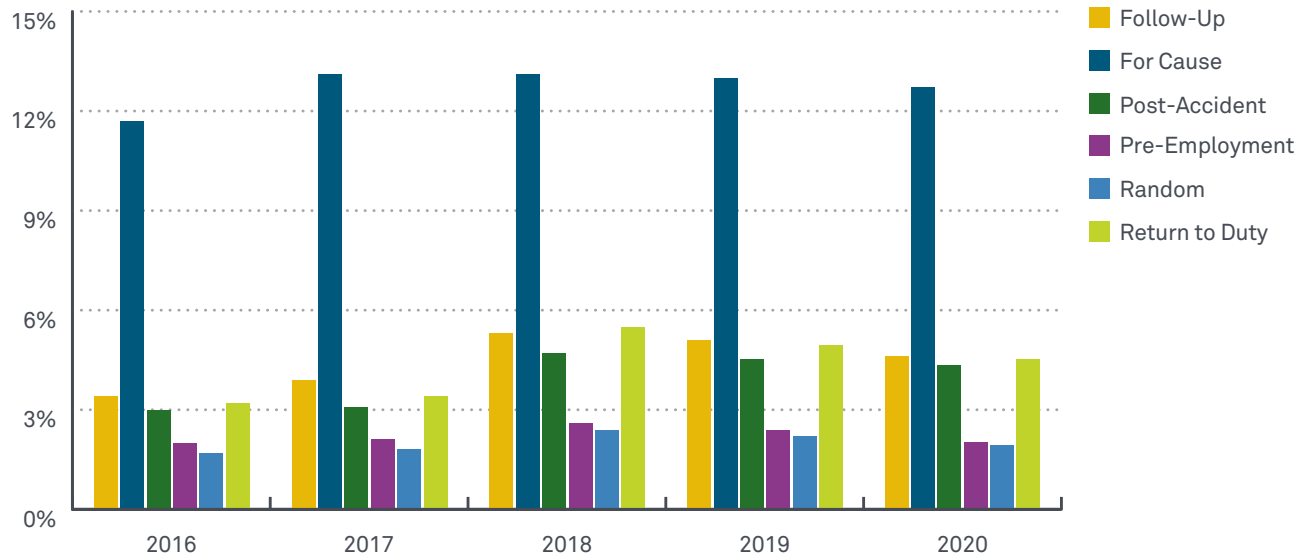
Urine Drug Tests



Testing Category	2016	2017	2018	2019	2020
Federally Mandated, Safety-Sensitive Workforce	2.0%	2.1%	2.7%	2.4%	2.2%
General U.S. Workforce	4.9%	5.0%	5.1%	5.3%	5.5%
Combined U.S. Workforce	4.2%	4.2%	4.4%	4.5%	4.4%

Positivity Rates by Testing Reason | *Annual Report*

Urine Drug Tests – For Federally Mandated, Safety-Sensitive Workforce

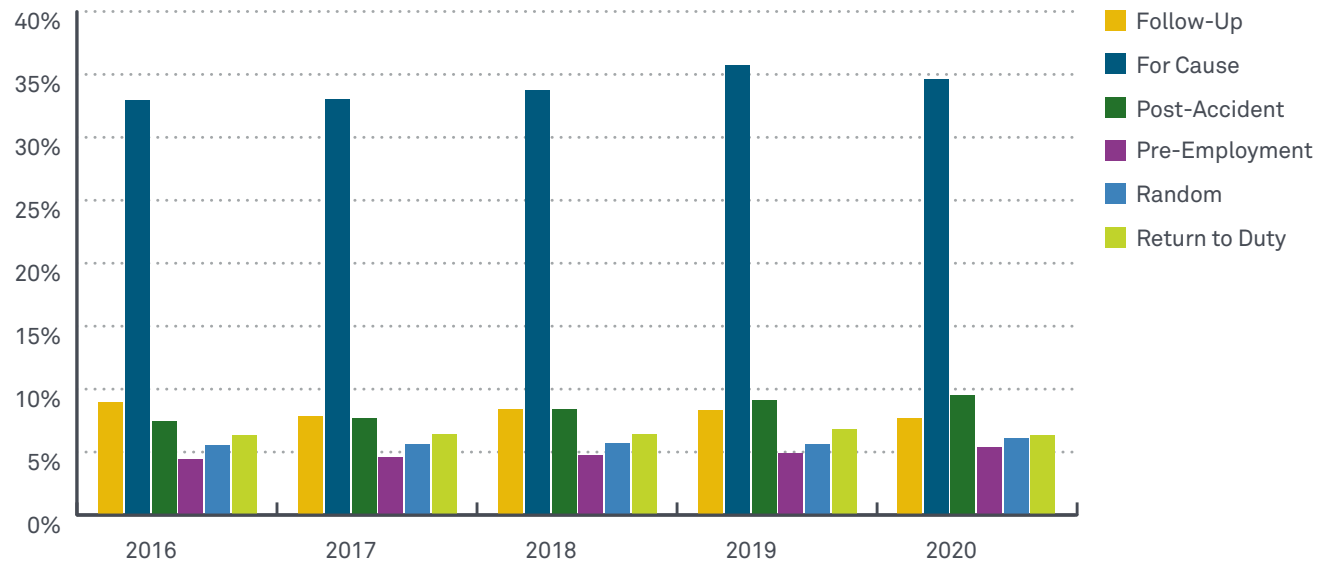


2.3 million tests from January to December 2020

Testing Reason	2016	2017	2018	2019	2020
Follow-Up	3.4%	3.9%	5.3%	5.1%	4.6%
For Cause	11.7%	13.1%	13.1%	13.0%	12.7%
Post-Accident	3.0%	3.1%	4.7%	4.5%	4.3%
Pre-Employment	2.0%	2.1%	2.6%	2.4%	2.1%
Random	1.7%	1.8%	2.4%	2.2%	2.0%
Return to Duty	3.2%	3.4%	5.5%	5.0%	4.5%

Positivity Rates by Testing Reason | *Annual Report*

Urine Drug Tests – For General U.S. Workforce

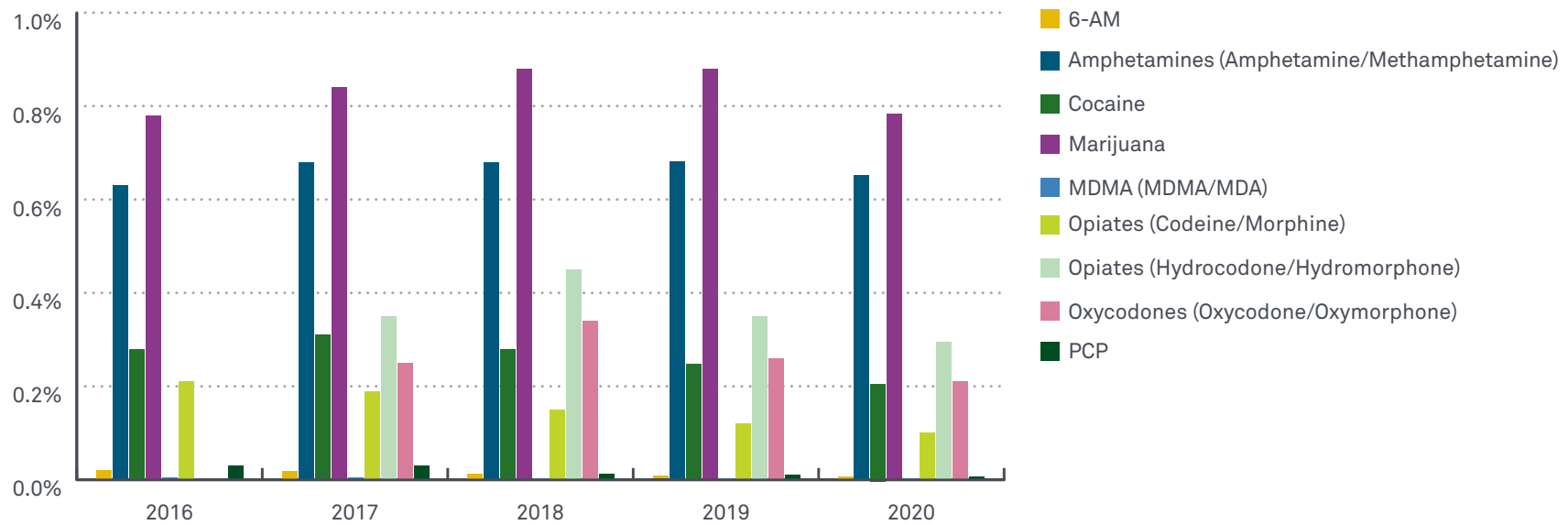


5 million tests from January to December 2020

Testing Reason	2016	2017	2018	2019	2020
Follow-Up	8.9%	7.8%	8.4%	8.3%	7.1%
For Cause	32.9%	33.0%	33.7%	35.7%	34.7%
Post-Accident	7.4%	7.7%	8.4%	9.1%	9.5%
Pre-Employment	4.4%	4.6%	4.7%	4.9%	5.2%
Random	5.5%	5.6%	5.7%	5.6%	5.8%
Return to Duty	6.3%	6.4%	6.4%	6.8%	6.2%

Positivity Rates by Drug Category | *Annual Report*

Urine Drug Tests – For Federally Mandated, Safety-Sensitive Workforce, as a Percentage of All Such Tests



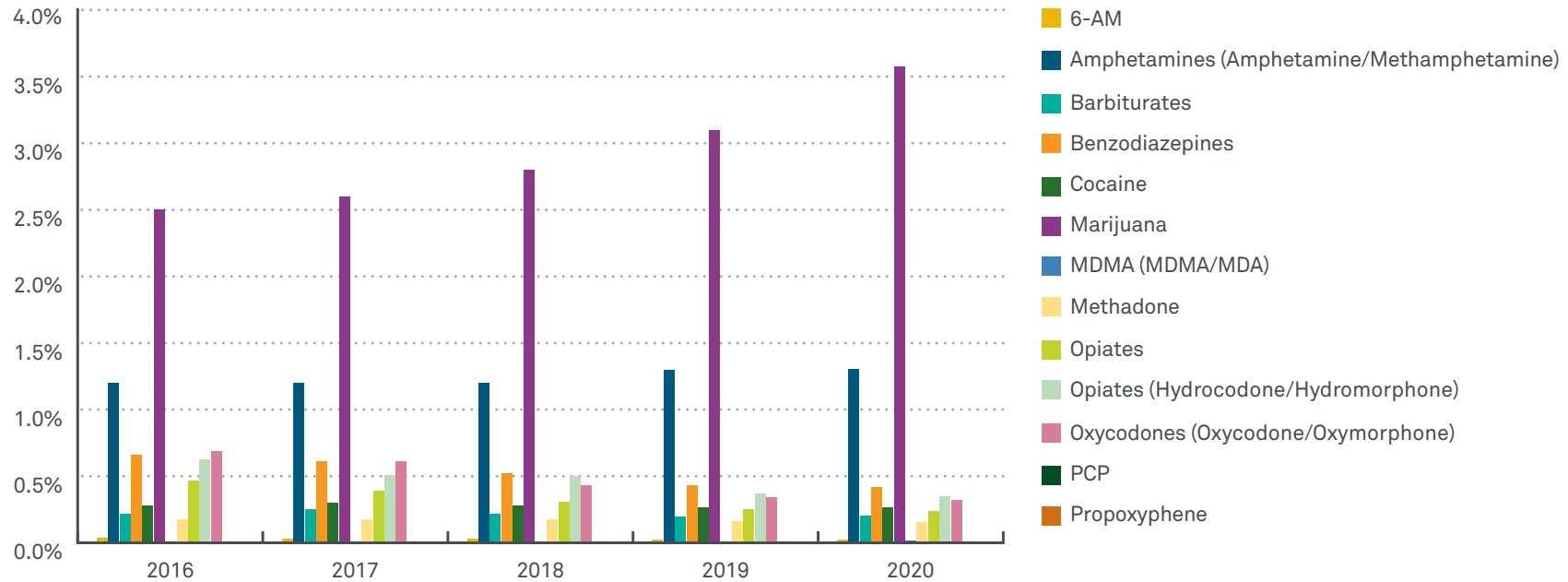
2.3 million tests from January to December 2020

Drug Category	2016	2017	2018	2019	2020
6-AM	0.02%	0.019%	0.013%	0.011%	0.008%
Amphetamines (Amphetamine/Methamphetamine)	0.63%	0.68%	0.68%	0.68%	0.64%
Cocaine	0.28%	0.31%	0.28%	0.25%	0.20%
Marijuana	0.78%	0.84%	0.88%	0.88%	0.79%
MDMA (MDMA/MDA)	0.005%	0.005%	0.003%	0.003%	0.002%
Opiates (Codeine/Morphine)	0.21%	0.19%	0.15%	0.12%	0.10%
Opiates (Hydrocodone/Hydromorphone)	-	0.35% ¹	0.45%	0.35%	0.30%
Oxycodones (Oxycodone/Oxymorphone)	-	0.25% ¹	0.34%	0.26%	0.21%
PCP	0.03%	0.03%	0.013%	0.011%	0.011%

¹2017 Federal employee testing October through December

Positivity Rates by Drug Category | *Annual Report*

Urine Drug Tests – For General U.S. Workforce, as a Percentage of All Such Tests



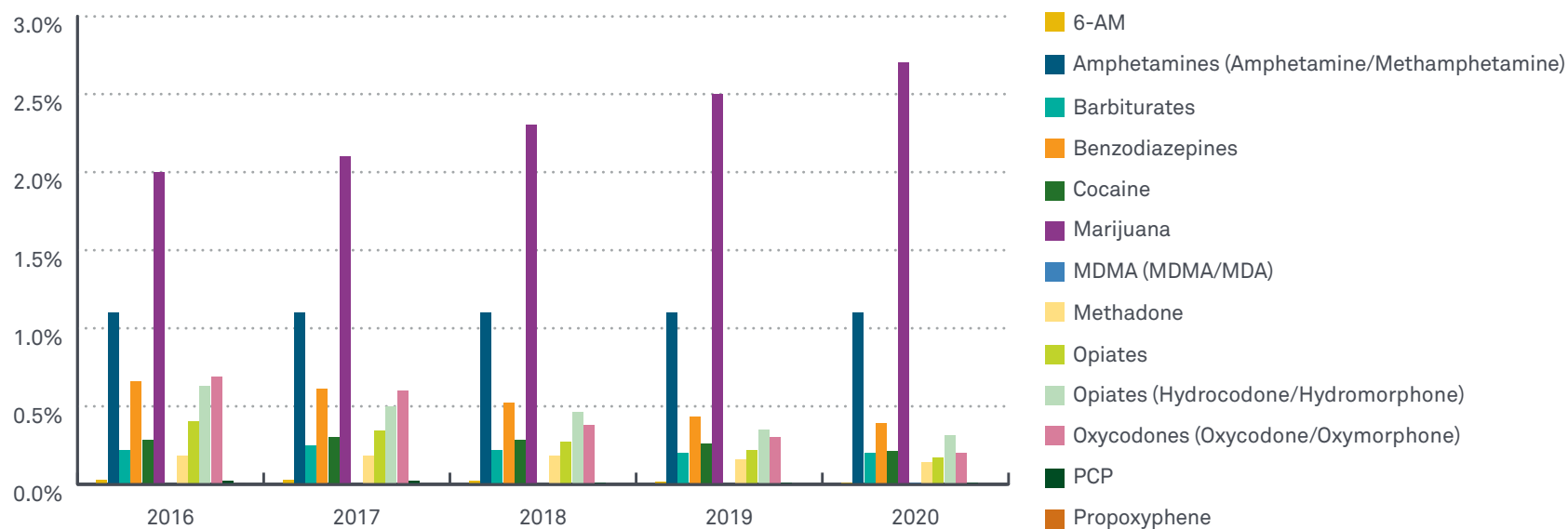
5 million tests from January to December 2020

Drug Category	2016	2017	2018	2019	2020
6-AM	0.04%	0.03%	0.03%	0.02%	0.018%
Amphetamines (Amphetamine/Methamphetamine)	1.2%	1.2%	1.2%	1.3%	1.3%
Barbiturates	0.22%	0.25%	0.22%	0.20%	0.20%
Benzodiazepines	0.66%	0.61%	0.52%	0.43%	0.39%
Cocaine	0.28%	0.30%	0.28%	0.27%	0.22%
Marijuana	2.5%	2.6%	2.8%	3.1%	3.6%
MDMA (MDMA/MDA)	0.004%	0.005%	0.006%	0.008%	0.010%

Drug Category	2016	2017	2018	2019	2020
Methadone	0.18%	0.18%	0.18%	0.16%	0.14%
Opiates	0.47%	0.39%	0.31%	0.25%	0.21%
Opiates (Hydrocodone/Hydromorphone)	0.63%	0.51%	0.50%	0.37%	0.33%
Oxycodones (Oxycodone/Oxymorphone)	0.69%	0.61%	0.43%	0.34%	0.29%
PCP	0.013%	0.013%	0.012%	0.011%	0.009%
Propoxyphene	0.002%	0.001%	0.001%	0.000%	0.001%

Positivity Rates by Drug Category | *Annual Report*

Urine Drug Tests – For Combined U.S. Workforce, as a Percentage of All Such Tests



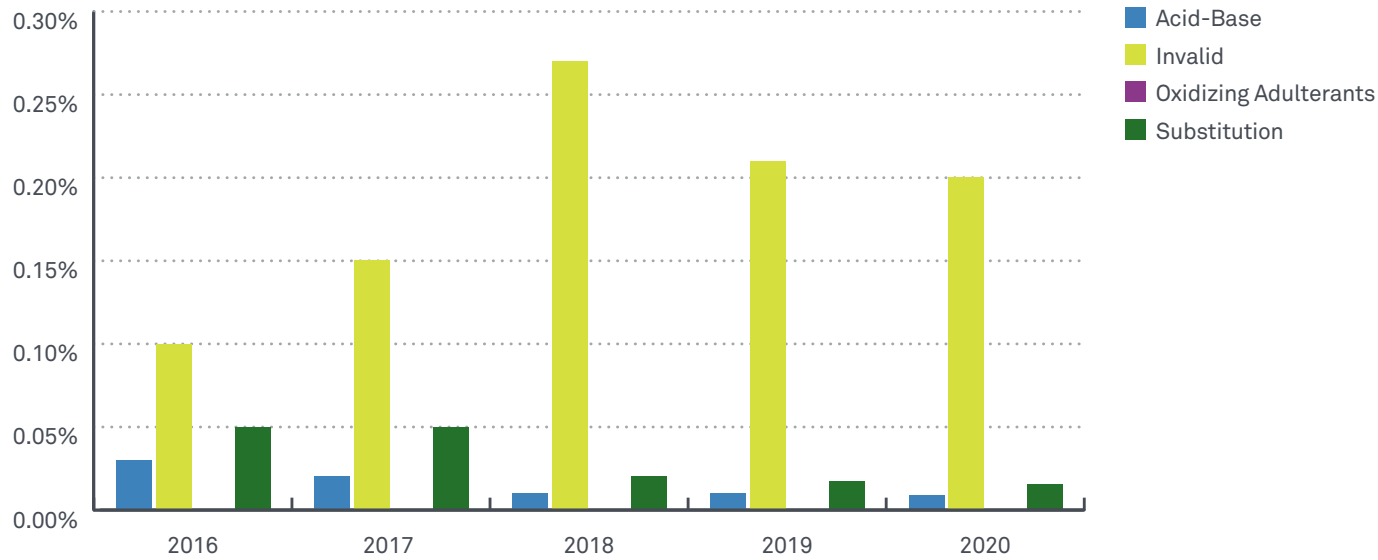
More than 7 million tests from January to December 2020

Drug Category	2016	2017	2018	2019	2020
6-AM	0.03%	0.02%	0.019%	0.015%	0.011%
Amphetamines (Amphetamine/Methamphetamine)	1.1%	1.1%	1.1%	1.1%	1.1%
Barbiturates	0.22%	0.25%	0.22%	0.20%	0.20%
Benzodiazepines	0.66%	0.61%	0.52%	0.43%	0.39%
Cocaine	0.28%	0.30%	0.28%	0.26%	0.21%
Marijuana	2.0%	2.1%	2.3%	2.5%	2.7%
MDMA (MDMA/MDA)	0.004%	0.005%	0.005%	0.005%	0.006%

Drug Category	2016	2017	2018	2019	2020
Methadone	0.18%	0.18%	0.18%	0.16%	0.14%
Opiates	0.40%	0.34%	0.27%	0.22%	0.17%
Opiates (Hydrocodone/Hydromorphone)	0.63%	0.50%	0.46%	0.35%	0.31%
Oxycodones (Oxycodone/Oxymorphone)	0.69%	0.60%	0.38%	0.30%	0.24%
PCP	0.016%	0.016%	0.012%	0.011%	0.010%
Propoxyphene	0.002%	0.001%	0.001%	0.000%	0.001%

Non-Negative Rates by Specimen Validity Test (SVT)² Category | *Annual Report*

Urine Drug Tests – For Federally Mandated, Safety-Sensitive Workforce, as a Percentage of All Such Tests



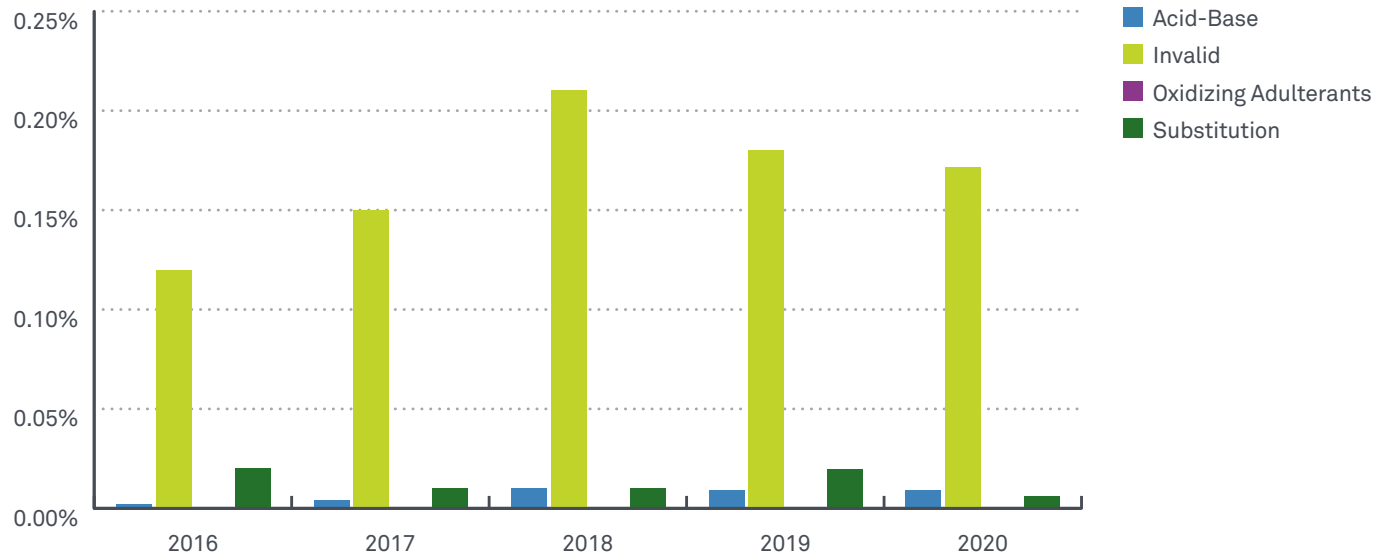
2.3 million tests from January to December 2020

SVT Category	2016	2017	2018	2019	2020
Acid-Base	0.03%	0.02%	0.013%	0.010%	0.009%
Invalid	0.10%	0.15%	0.27%	0.21%	0.20%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.05%	0.05%	0.019%	0.017%	0.016%

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.

Non-Negative Rates by Specimen Validity Test (SVT) Category | *Annual Report*

Urine Drug Tests – For General U.S. Workforce, as a Percentage of All Such Tests

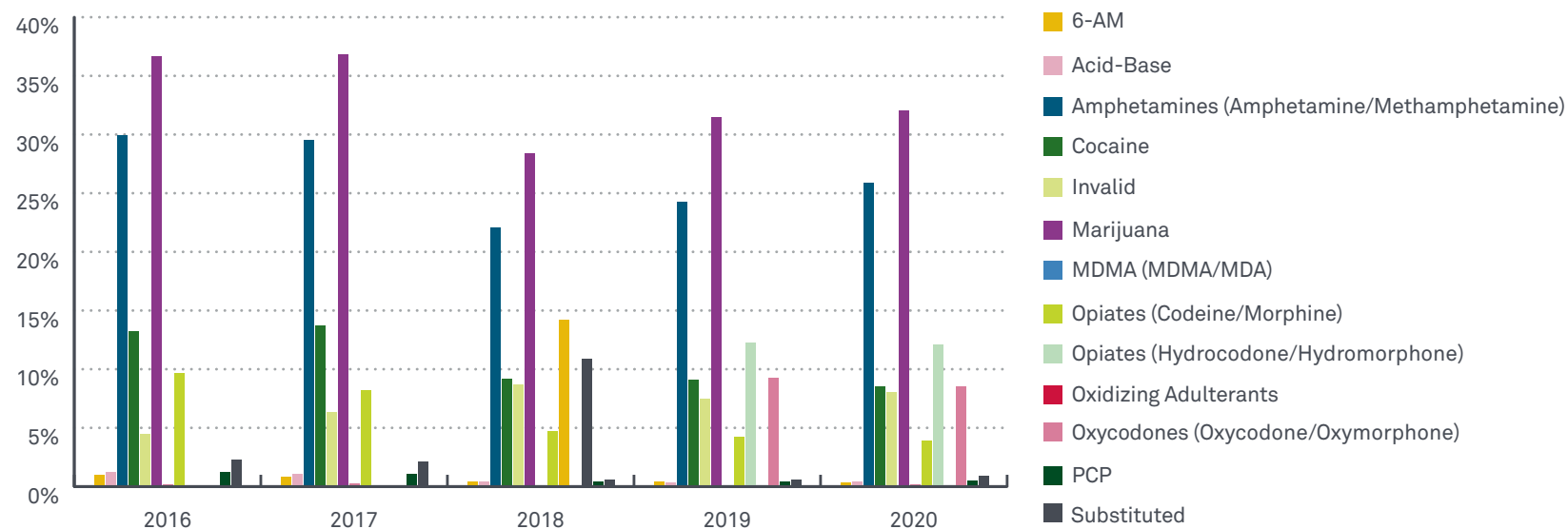


5 million tests from January to December 2020

SVT Category	2016	2017	2018	2019	2020
Acid-Base	0.002%	0.004%	0.010%	0.009%	0.009%
Invalid	0.12%	0.15%	0.21%	0.18%	0.17%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Substitution	0.015%	0.014%	0.014%	0.015%	0.012%

Non-Negative Rates by Drug/SVT Category | *Annual Report*

Urine Drug Tests – For Federally Mandated, Safety-Sensitive Workforce, as a Percentage of All Non-Negatives



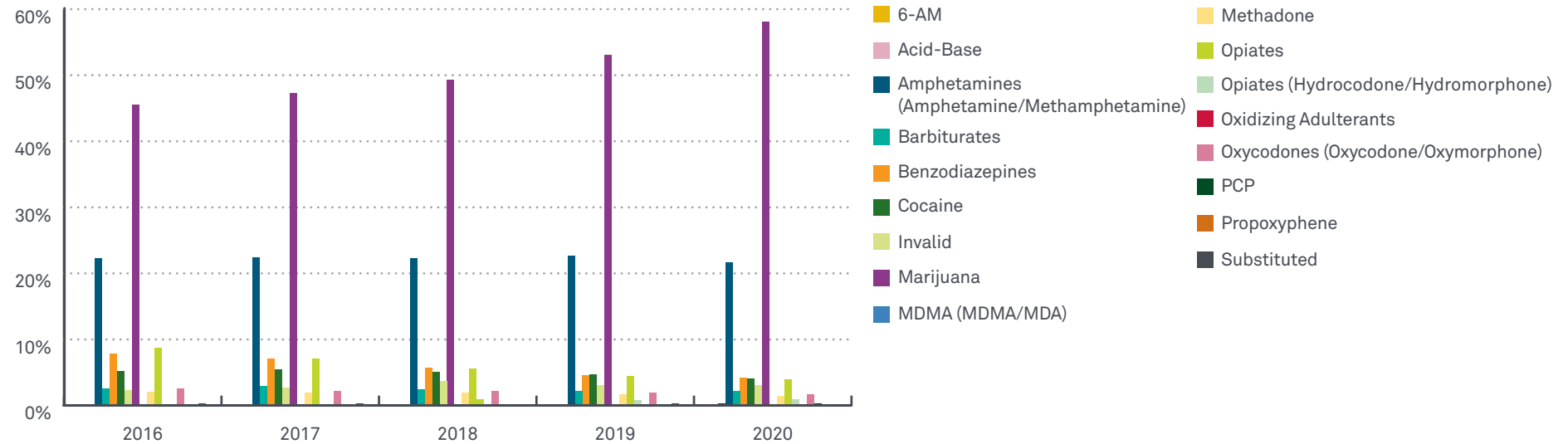
More than 57 thousand non-negative test results from January to December 2020

Drug/SVT Category	2016	2017	2018	2019	2020
6-AM	0.99%	0.82%	0.40%	0.40%	0.31%
Acid-Base	1.2%	1.0%	0.41%	0.34%	0.35%
Amphetamines (Amphetamine/Methamphetamine)	29.9%	29.5%	22.1%	24.3%	25.9%
Cocaine	13.3%	13.7%	9.2%	9.1%	8.1%
Invalid	4.5%	6.4%	8.7%	7.5%	7.9%
Marijuana	36.7%	36.8%	28.4%	31.5%	31.9%
MDMA (MDMA/MDA)	0.21%	0.23%	0.09%	0.09%	0.09%

Drug/SVT Category	2016	2017	2018	2019	2020
Opiates (Codeine/Morphine)	9.7%	8.2%	4.7%	4.2%	3.9%
Opiates (Hydrocodone/Hydromorphone)	-	-	14.2%	12.3%	12.0%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Oxycodones (Oxycodone/Oxymorphone)	-	-	10.9%	9.3%	8.5%
PCP	1.2%	1.1%	0.41%	0.41%	0.43%
Substituted	2.3%	2.2%	0.62%	0.61%	0.65%

Non-Negative Rates by Drug/SVT Category | *Annual Report*

Urine Drug Tests – For General U.S. Workforce, as a Percentage of All Non-Negatives



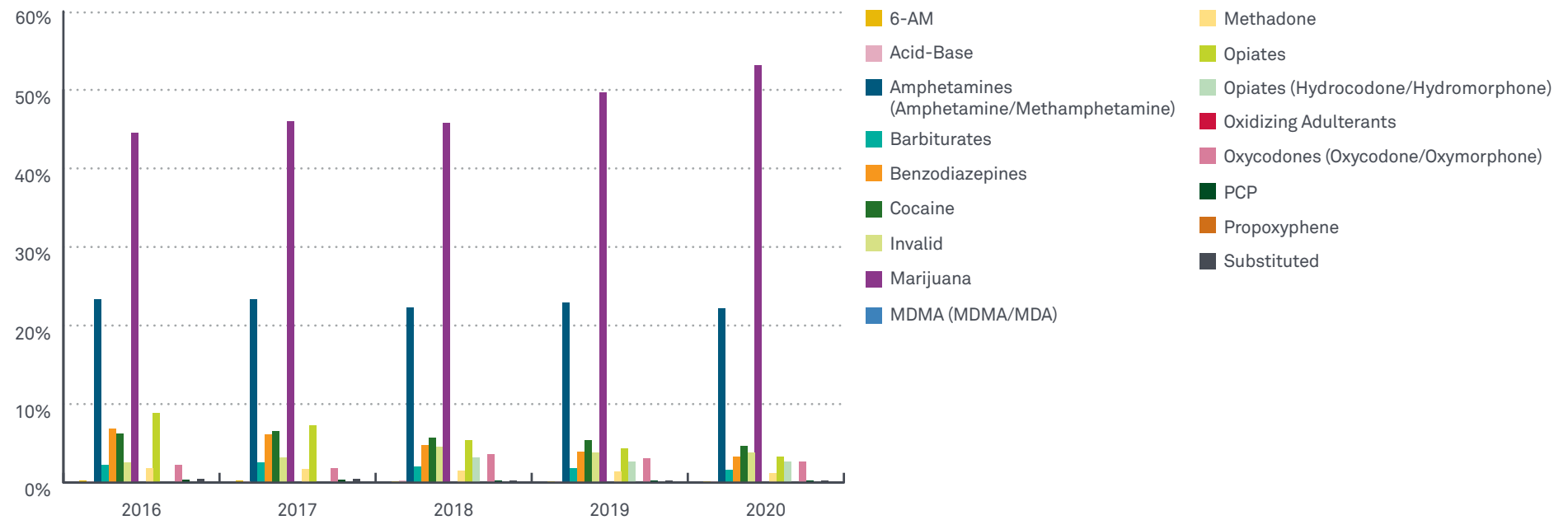
More than 295 thousand non-negative test results from January to December 2020

Drug/SVT Category	2016	2017	2018	2019	2020
6-AM	0.15%	0.12%	0.12%	0.09%	0.08%
Acid-Base	0.03%	0.07%	0.17%	0.16%	0.15%
Amphetamines (Amphetamine/Methamphetamine)	22.3%	22.4%	22.3%	22.7%	21.5%
Barbiturates	2.6%	3.0%	2.5%	2.2%	2.0%
Benzodiazepines	7.8%	7.1%	5.8%	4.6%	3.9%
Cocaine	5.2%	5.5%	5.1%	4.7%	3.7%
Invalid	2.3%	2.7%	3.7%	3.1%	3.0%
Marijuana	45.5%	47.4%	49.3%	53.1%	57.8%
MDMA (MDMA/MDA)	0.03%	0.03%	0.04%	0.05%	0.06%

Drug/SVT Category	2016	2017	2018	2019	2020
Methadone	2.1%	2.0%	1.9%	1.7%	1.4%
Opiates	8.7%	7.2%	5.6%	4.5%	3.5%
Opiates (Hydrocodone/Hydromorphone)	-	-	0.91%	0.87%	0.91%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Oxycodones (Oxycodone/Oxymorphone)	2.6%	2.1%	2.2%	1.9%	1.6%
PCP	0.24%	0.24%	0.20%	0.20%	0.16%
Propoxyphene	0.02%	0.016%	0.010%	0.005%	0.007%
Substituted	0.28%	0.26%	0.24%	0.26%	0.21%

Non-Negative Rates by Drug/SVT Category | *Annual Report*

Urine Drug Tests – For Combined U.S. Workforce, as a Percentage of All Non-Negatives



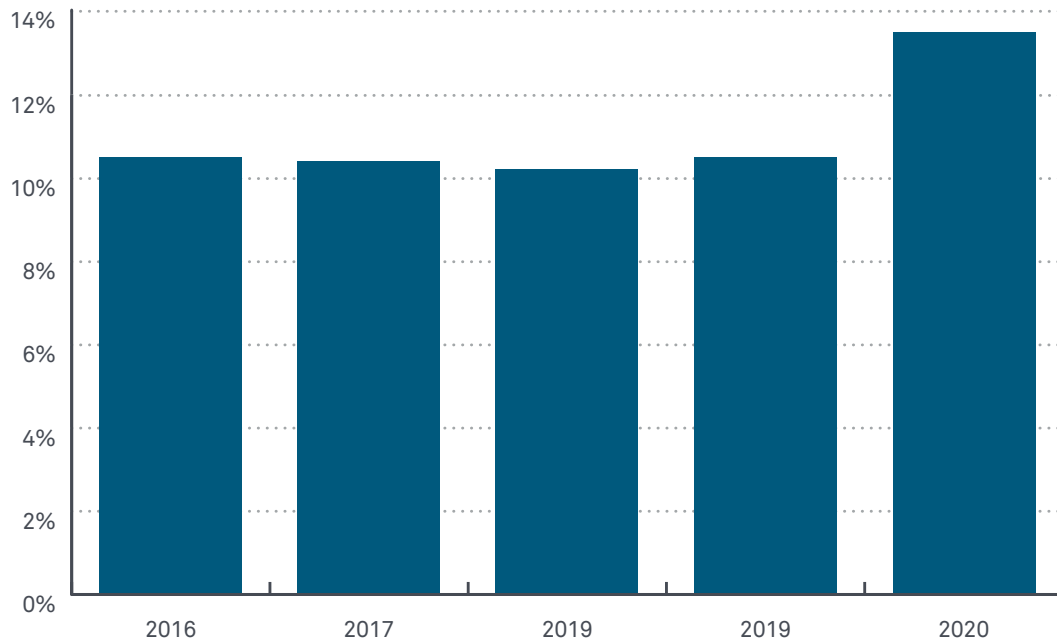
More than 350 thousand non-negative test results from January to December 2020

Drug/SVT Category	2016	2017	2018	2019	2020
6-AM	0.25%	0.21%	0.17%	0.14%	0.12%
Acid-Base	0.17%	0.20%	0.21%	0.19%	0.18%
Amphetamines (Amphetamine/Methamphetamine)	23.2%	23.4%	22.3%	22.9%	22.2%
Barbiturates	2.3%	2.6%	2.0%	1.8%	1.7%
Benzodiazepines	6.9%	6.2%	4.8%	3.9%	3.3%
Cocaine	6.2%	6.5%	5.8%	5.4%	4.4%
Invalid	2.6%	3.2%	4.5%	3.8%	3.8%
Marijuana	44.5%	46.0%	45.8%	49.7%	53.6%
MDMA (MDMA/MDA)	0.05%	0.06%	0.05%	0.06%	0.07%

Drug/SVT Category	2016	2017	2018	2019	2020
Methadone	1.8%	1.7%	1.6%	1.4%	1.1%
Opiates	8.9%	7.3%	5.5%	4.4%	3.6%
Opiates (Hydrocodone/Hydromorphone)	-	-	3.2%	2.7%	2.7%
Oxidizing Adulterants	0.000%	0.000%	0.000%	0.000%	0.000%
Oxycodones (Oxycodone/Oxymorphone)	2.3%	1.9%	3.7%	3.1%	2.7%
PCP	0.36%	0.35%	0.24%	0.23%	0.20%
Propoxyphene	0.02%	0.014%	0.008%	0.004%	0.006%
Substituted	0.52%	0.51%	0.31%	0.31%	0.28%

Positivity Rates by Testing Category | *Annual Report*

Oral Fluid Drug Tests – For General U.S. Workforce

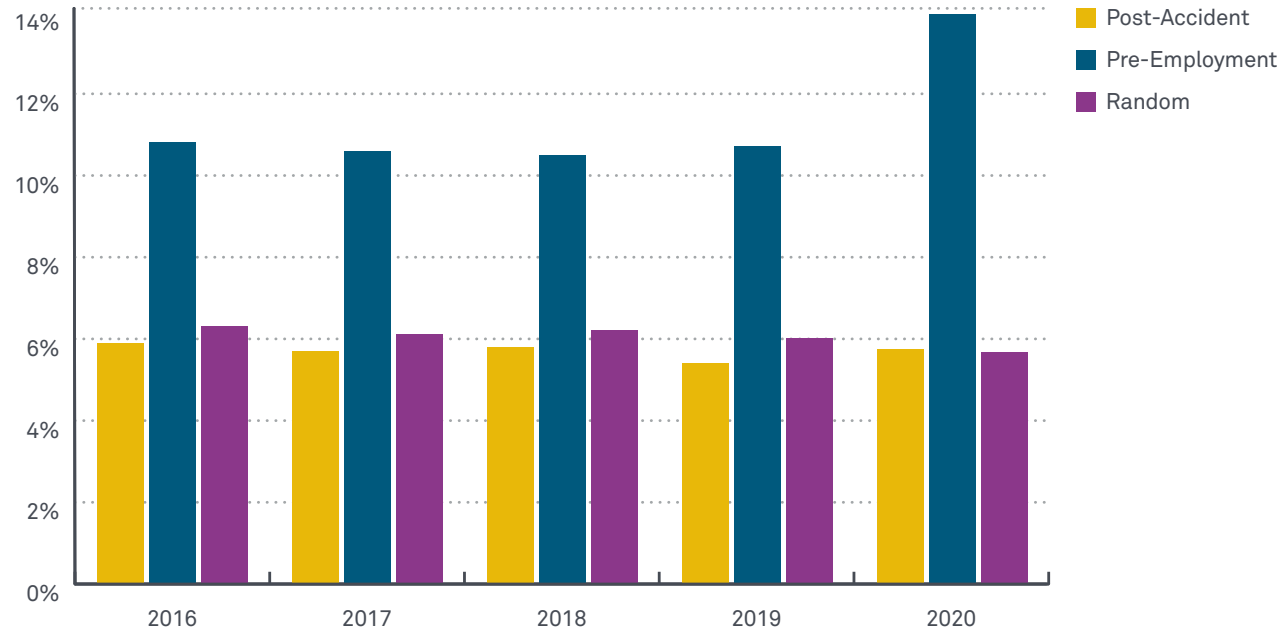


More than 2 million tests from January to December 2020

Testing Category	2016	2017	2018	2019	2020
General U.S. Workforce	10.5%	10.4%	10.2%	10.5%	13.6%

Positivity Rates by Testing Reason | *Annual Report*

Oral Fluid Drug Tests – For General U.S. Workforce

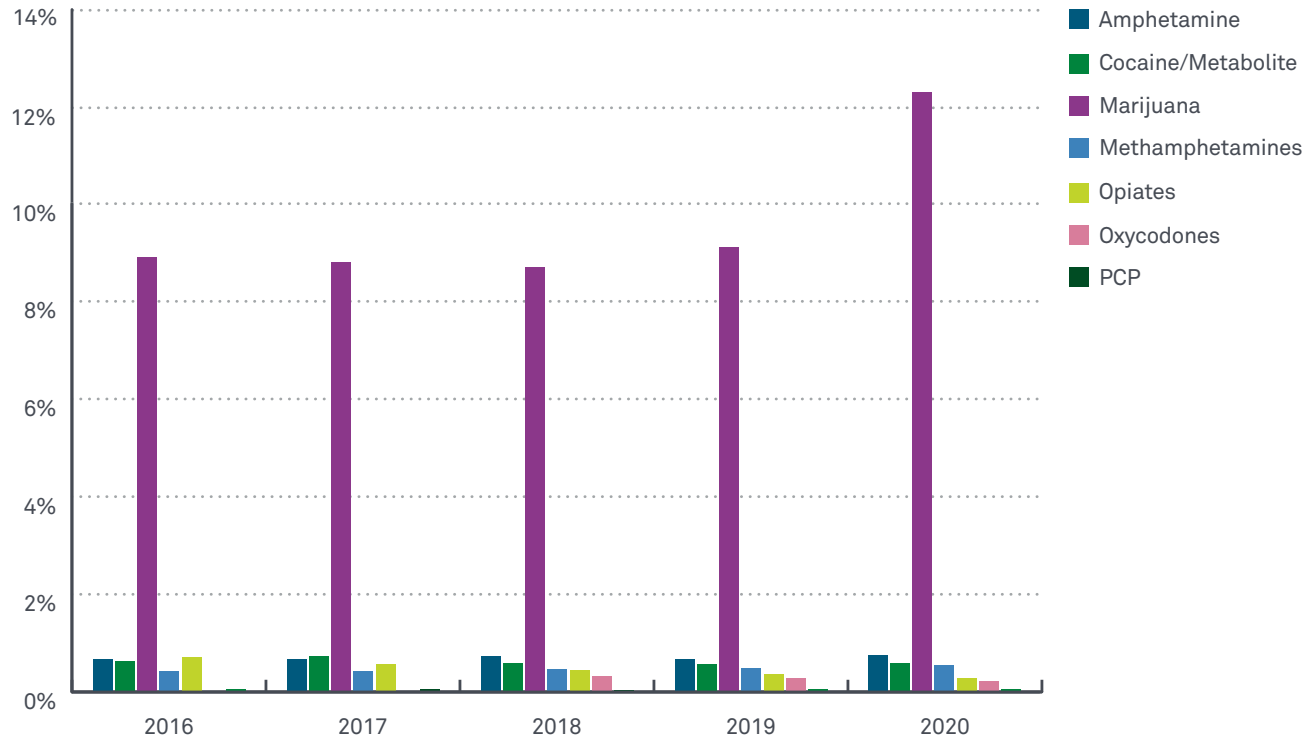


More than 2 million tests from January to December 2020

Testing Reason	2016	2017	2018	2019	2020
Post-Accident	5.9%	5.7%	5.8%	5.4%	5.8%
Pre-Employment	10.8%	10.6%	10.5%	10.7%	13.9%
Random	6.3%	6.1%	6.2%	6.0%	5.6%

Positivity Rates by Drug Category | *Annual Report*

Oral Fluid Drug Tests – For General U.S. Workforce

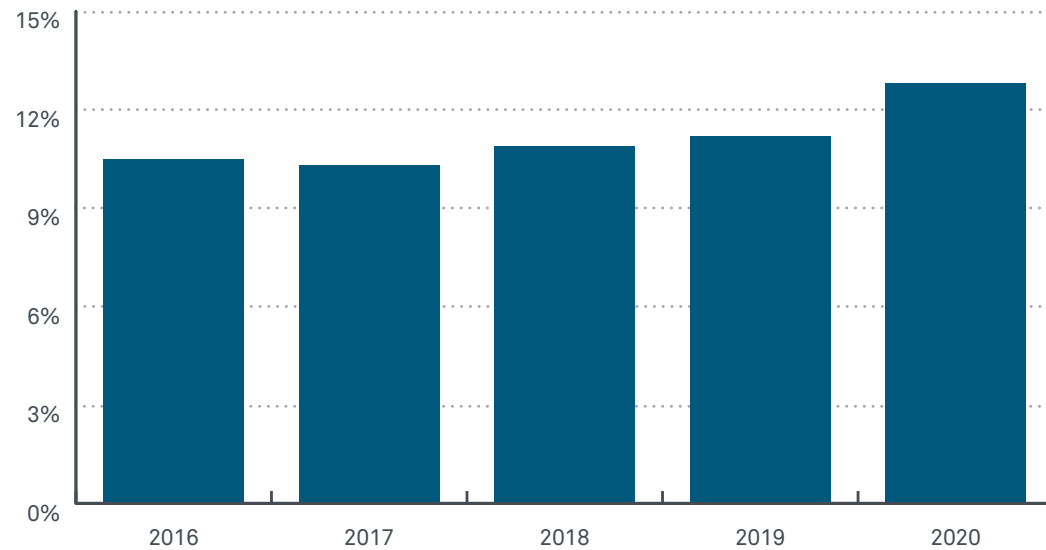


More than 2 million tests from January to December 2020

Drug Category	2016	2017	2018	2019	2020
Amphetamine	0.66%	0.66%	0.73%	0.67%	0.71%
Cocaine/Metabolite	0.63%	0.73%	0.59%	0.57%	0.58%
Marijuana	8.9%	8.8%	8.7%	9.1%	12.3%
Methamphetamines	0.42%	0.43%	0.47%	0.49%	0.53%
Opiates	0.71%	0.57%	0.44%	0.35%	0.31%
Oxycodones	-	-	0.31%	0.28%	0.24%
PCP	0.05%	0.06%	0.04%	0.05%	0.04%

Positivity Rates by Testing Category | *Annual Report*

Hair Drug Tests – For General U.S. Workforce

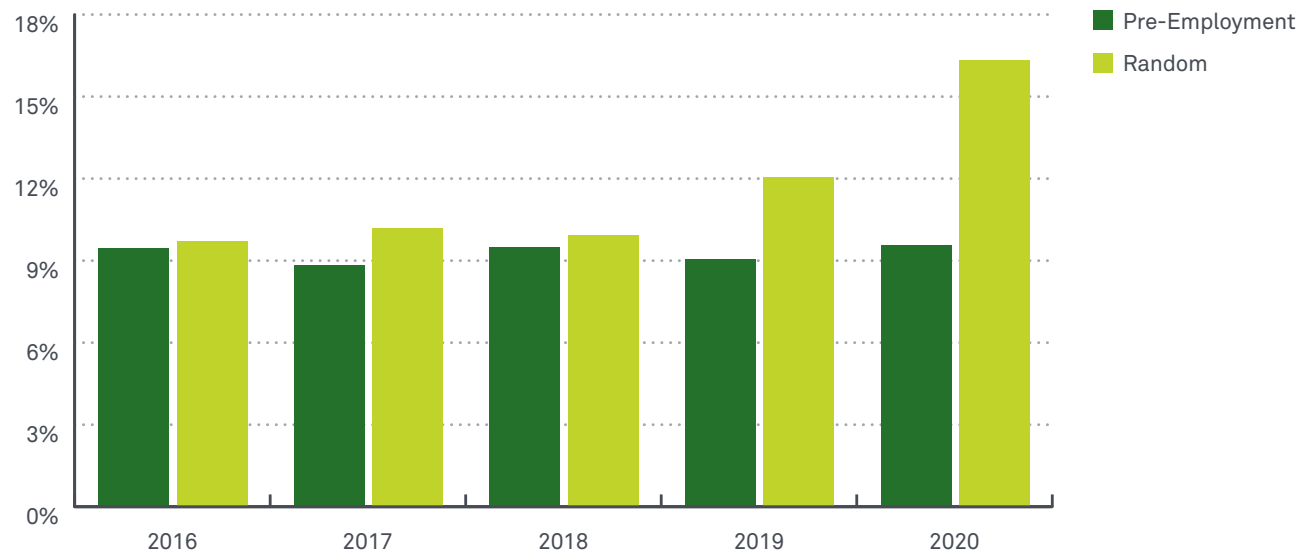


More than 75 thousand tests from January to December 2020

Testing Category	2016	2017	2018	2019	2020
General U.S. Workforce	10.5%	10.3%	10.9%	11.2%	12.8%

Positivity Rates by Testing Reason | *Annual Report*

Hair Drug Tests – For General U.S. Workforce

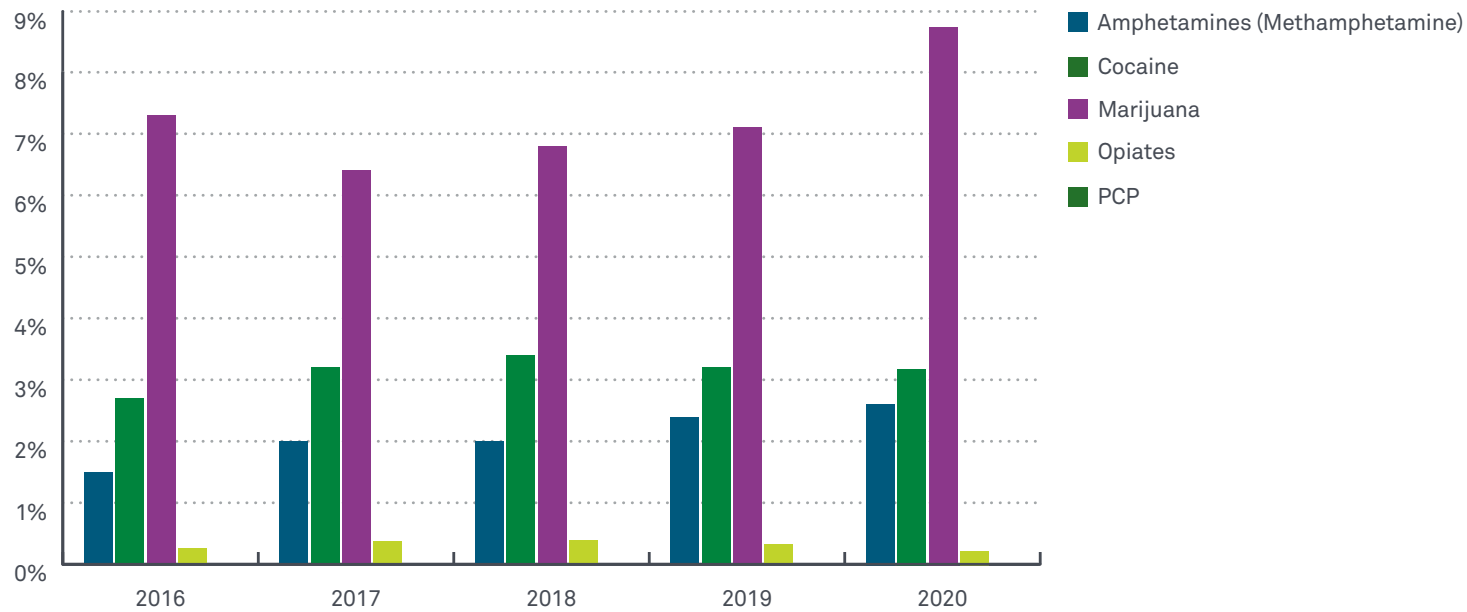


More than 75 thousand tests from January to December 2020

Testing Reason	2016	2017	2018	2019	2020
Pre-Employment	9.5%	8.9%	9.4%	9.0%	9.8%
Random	10.0%	10.6%	10.1%	12.0%	16.7%

Positivity Rates by Drug Category | *Annual Report*

Hair Drug Tests – For General U.S. Workforce

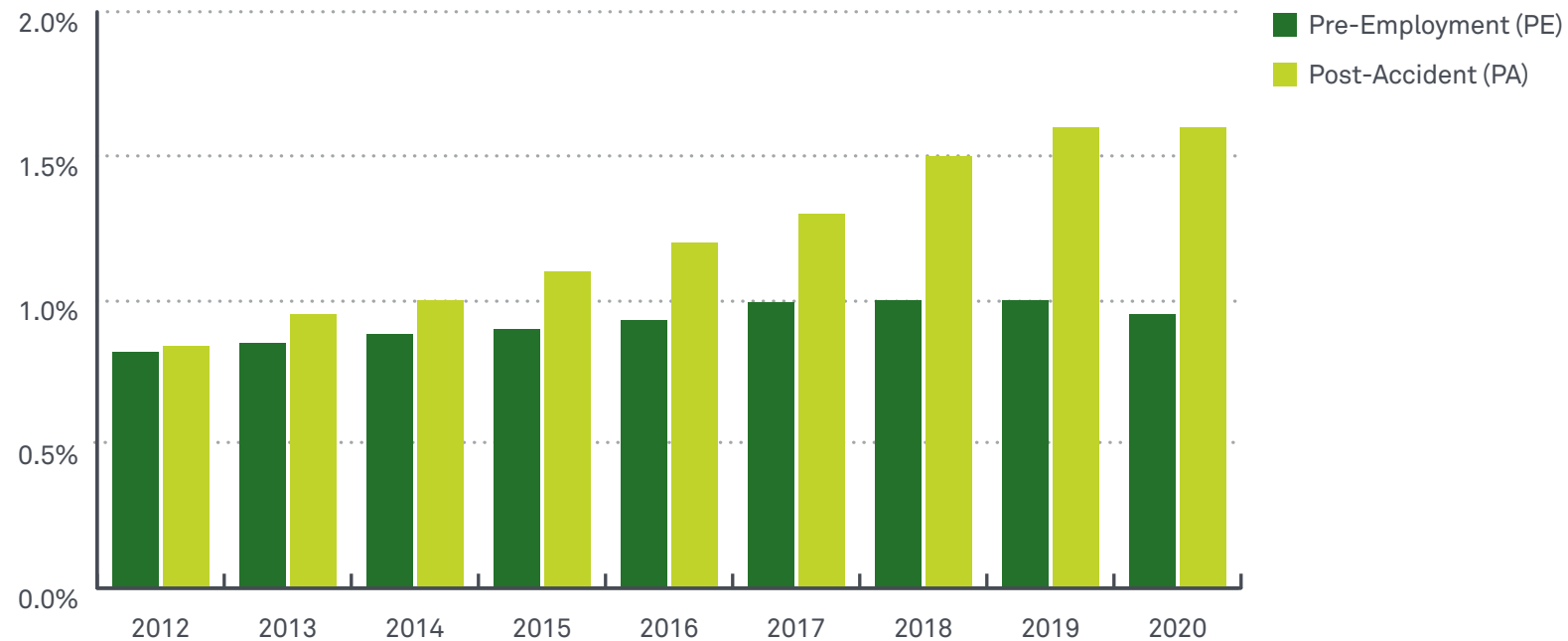


More than 75 thousand tests from January to December 2020

Drug Category	2016	2017	2018	2019	2020
Amphetamines (Methamphetamine)	1.5%	2.0%	2.0%	2.4%	2.6%
Cocaine	2.7%	3.2%	3.4%	3.2%	3.2%
Marijuana	7.3%	6.4%	6.8%	7.1%	8.7%
Opiates	0.27%	0.38%	0.39%	0.32%	0.29%
PCP	0.012%	0.014%	0.016%	0.012%	0.03%

Post-Accident vs. Pre-Employment Positivity Rates for Marijuana | *Annual Report*

For Federally Mandated, Safety-Sensitive Workforce, as a percentage of all tests for Marijuana Metabolite

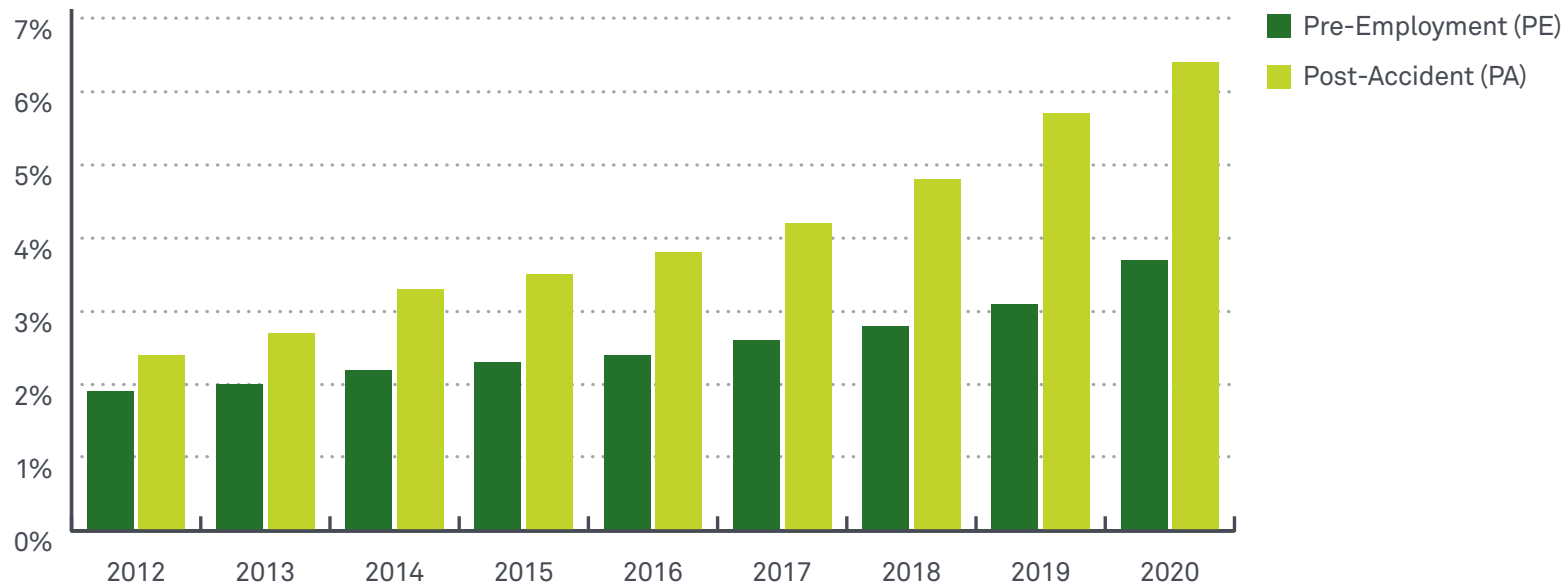


2.3 million tests from January to December 2020

Drug Category	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pre-Employment (PE)	0.82%	0.85%	0.88%	0.90%	0.93%	0.99%	1.0%	1.0%	0.95%
Post-Accident (PA)	0.84%	0.95%	1.0%	1.1%	1.2%	1.3%	1.5%	1.6%	1.6%
% Difference PE vs. PA	2.4%	11.8%	13.6%	22.2%	29.0%	31.3%	50.0%	60.0%	68.4%

Post-Accident vs. Pre-Employment Positivity Rates for Marijuana | *Annual Report*

For General U.S. Workforce, as a percentage of all tests for Marijuana Metabolite

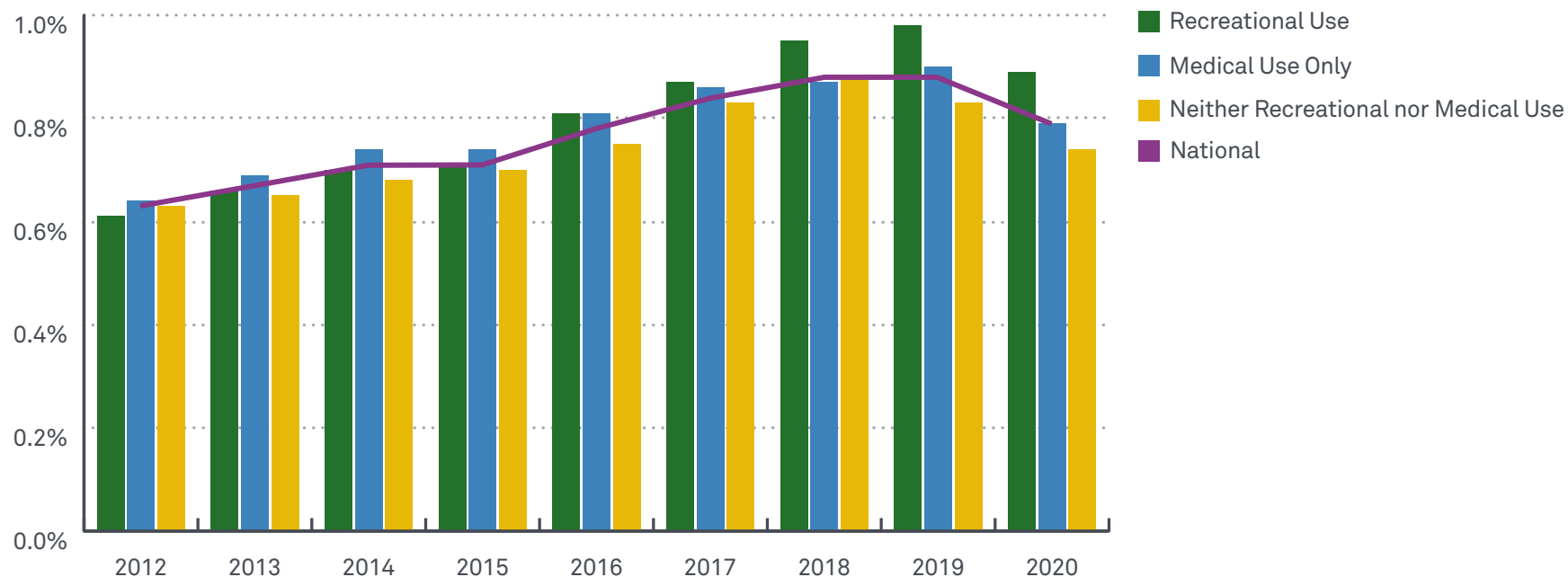


5 million tests from January to December 2020

Drug Category	2012	2013	2014	2015	2016	2017	2018	2019	2020
Pre-Employment (PE)	1.9%	2.0%	2.2%	2.3%	2.4%	2.6%	2.8%	3.1%	3.7%
Post-Accident (PA)	2.4%	2.7%	3.3%	3.5%	3.8%	4.2%	4.8%	5.7%	6.4%
% Difference PE vs. PA	26.3%	35.0%	50.0%	52.2%	58.3%	61.5%	71.4%	83.9%	73.0%

Marijuana Positivity by 2020 State Legalized Use Status – Urine Drug Tests | *Annual Report*

For Federally Mandated, Safety-Sensitive Workforce, as a percentage of all tests for Marijuana Metabolite

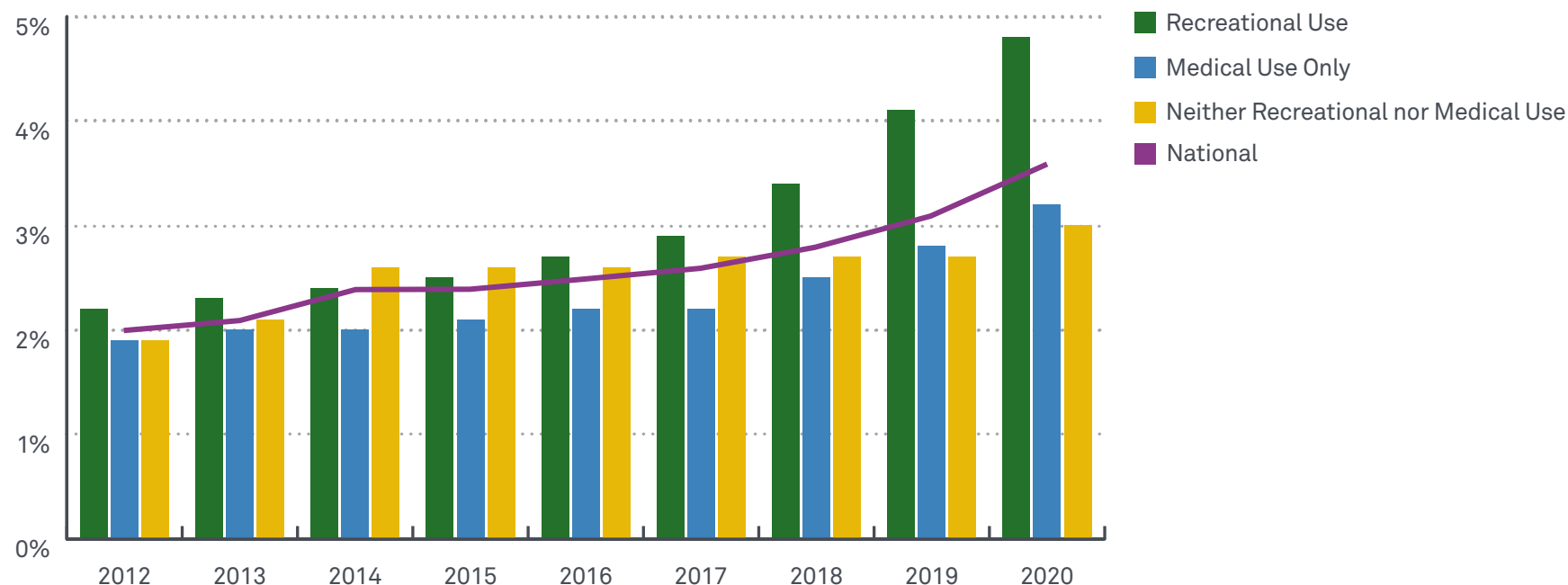


2.3 million tests from January to December 2020

Drug Category	2012	2013	2014	2015	2016	2017	2018	2019	2020
Recreational Use	0.61%	0.66%	0.70%	0.71%	0.81%	0.87%	0.95%	0.98%	0.89%
Medical Use Only	0.64%	0.69%	0.74%	0.74%	0.81%	0.86%	0.87%	0.90%	0.79%
Neither Recreational nor Medical Use	0.63%	0.65%	0.68%	0.70%	0.75%	0.83%	0.88%	0.83%	0.74%
National	0.63%	0.67%	0.71%	0.71%	0.78%	0.84%	0.88%	0.88%	0.79%

Marijuana Positivity by 2020 State Legalized Use Status – Urine Drug Tests | *Annual Report*

For General U.S. Workforce, as a percentage of all tests for Marijuana Metabolite



5 million tests from January to December 2020

Drug Category	2012	2013	2014	2015	2016	2017	2018	2019	2020
Recreational Use	2.2%	2.3%	2.4%	2.5%	2.7%	2.9%	3.4%	4.1%	4.8%
Medical Use Only	1.9%	2.0%	2.0%	2.1%	2.2%	2.2%	2.5%	2.8%	3.2%
Neither Recreational nor Medical Use	1.9%	2.1%	2.6%	2.6%	2.6%	2.7%	2.7%	2.7%	3.0%
National	2.0%	2.1%	2.4%	2.4%	2.5%	2.6%	2.8%	3.1%	3.6%

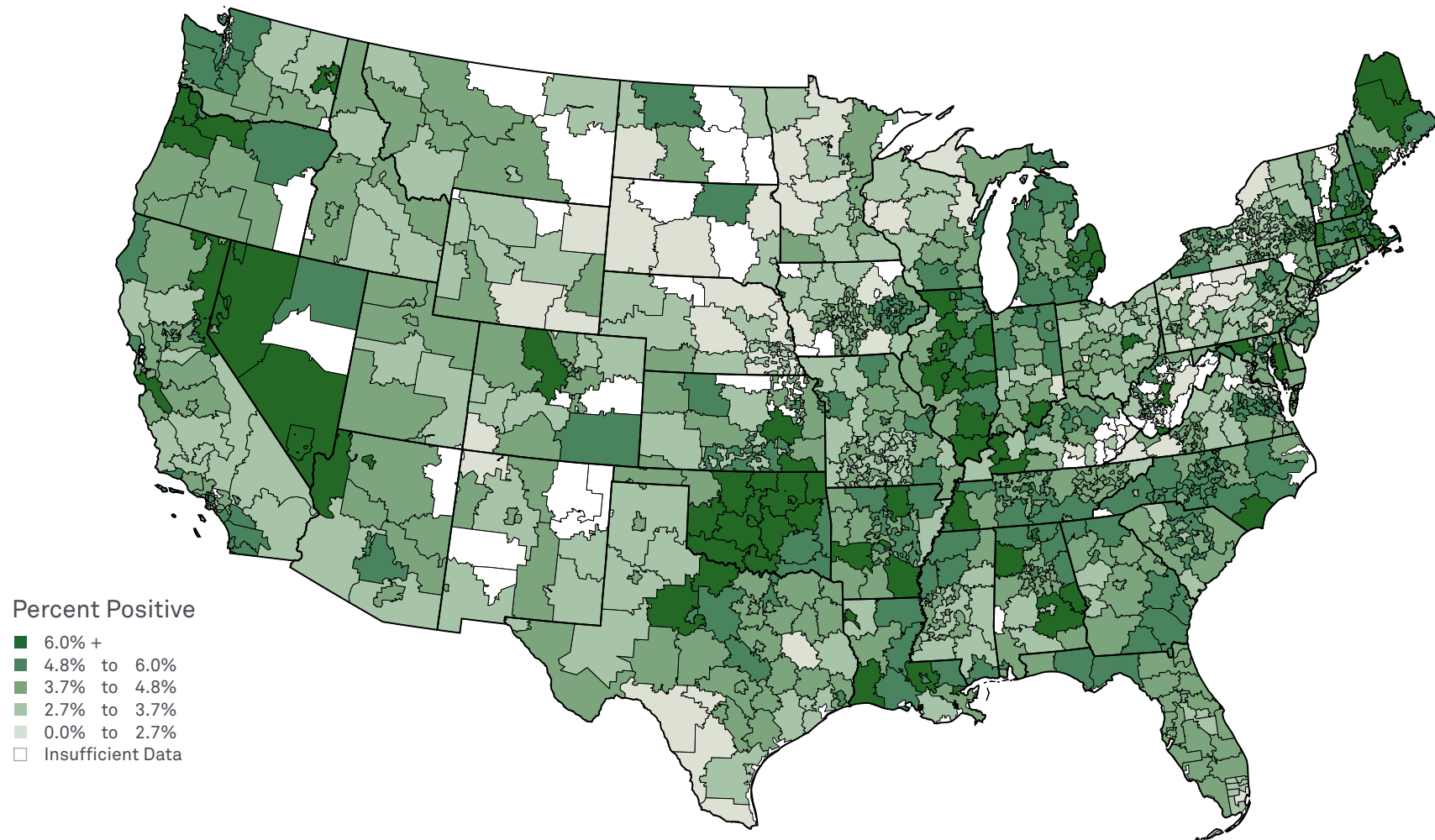
3-Digit Zip Code Drug Positivity Maps

Urine Drug Tests – For Combined U.S. Workforce

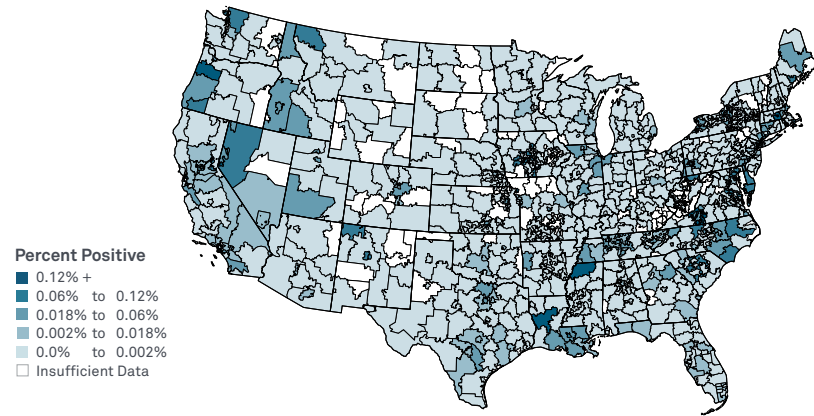
January - December 2020

For an interactive map with positivity rates and trend lines by three-digit zip code in the United States, visit [QuestDiagnostics.com/DrugMap](https://www.questdiagnostics.com/DrugMap).

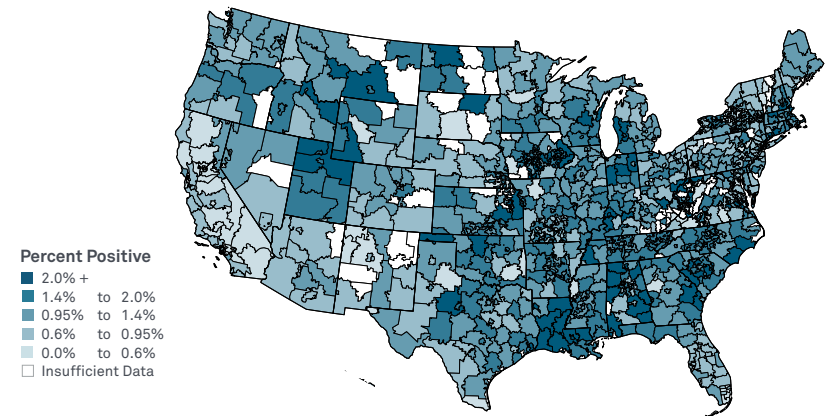
Overall Positivity



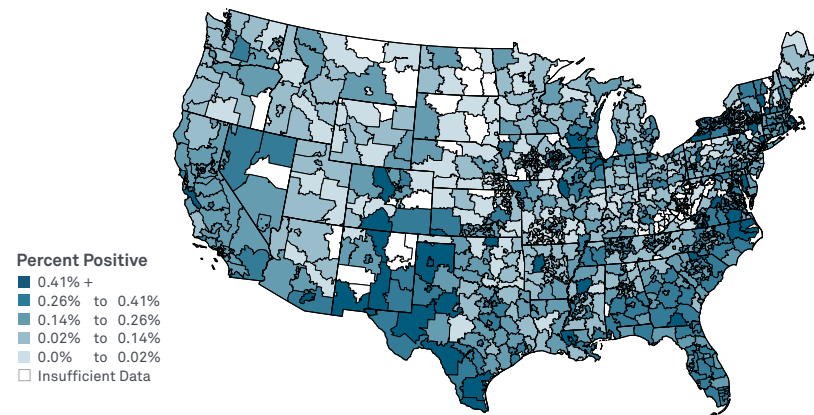
6-AM Positivity



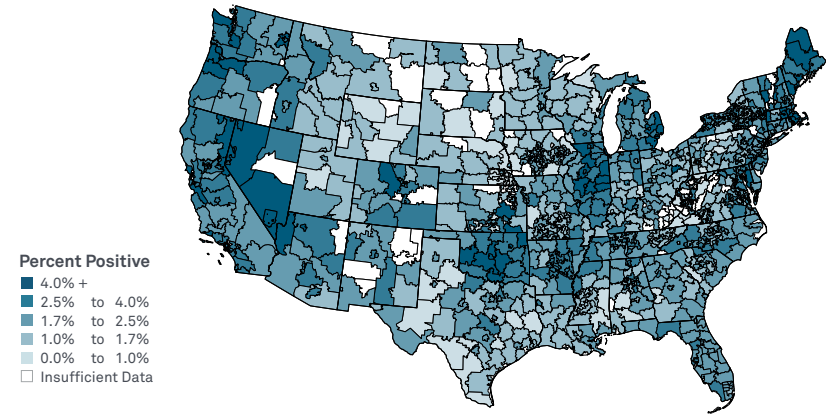
Amphetamines Positivity



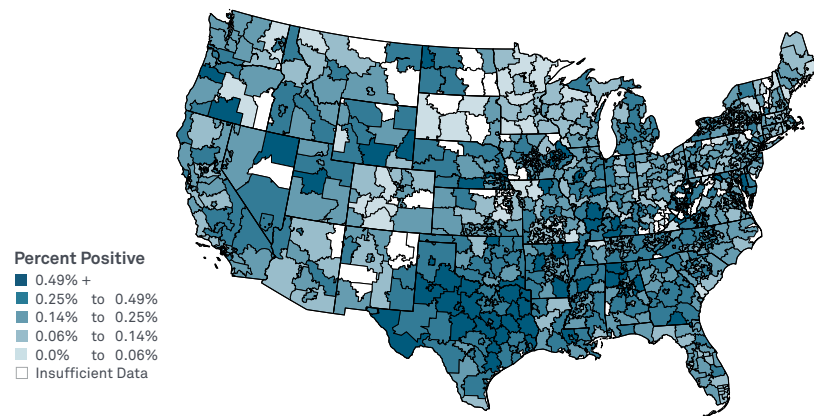
Cocaine Positivity



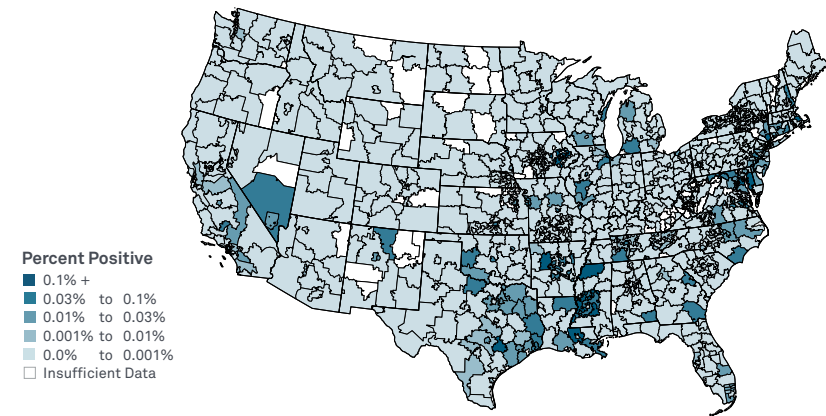
Marijuana Positivity



Opiates Positivity



PCP Positivity





Drug Testing Index™ Industry Insights

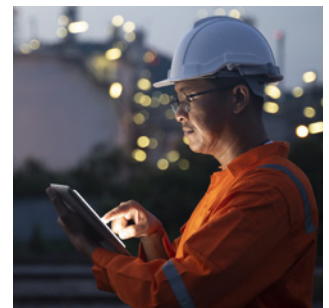
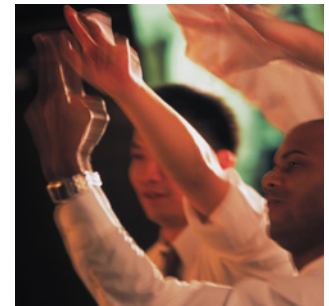
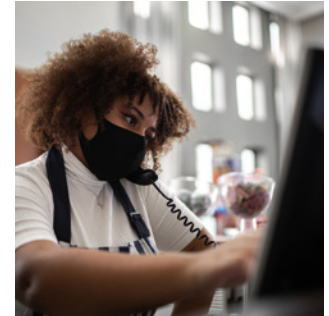
Quest examines patterns of industry-specific workplace drug use among the American workforce

The North American Industry Classification System (NAICS) is the standard used by Federal statistical agencies of Canada, Mexico, and the U.S., in classifying business establishments for the purpose of collecting, analyzing, and publishing statistical data related to the economy. Defining an industry using a production-oriented concept means companies with the same NAICS code share production processes and technologies when producing goods and services. Simply put, a NAICS code identifies a company's primary business activity and allows a comparison of companies in like industries across the continent.

Using a hierarchical structure, NAICS is a six-digit coding system that classifies all economic activity into 20 industry sectors. Five sectors produce goods and 15 provide some type of service. Each digit in a NAICS code gradually narrows the categories. The first two digits of the NAICS code indicate the industry sector — the largest business sector in which a company operates. The third digit is the subsector and the fourth digit is the industry group. The fifth digit designates the NAICS industry and the sixth and final digit designates a company's national industry.

In 1997, the Standard Industrial Classification (SIC) 4-digit system was replaced by NAICS to simplify and modernize the comparison of industries. NAICS undergoes a planned review every five years to ensure it remains relevant.

Our data was classified by the industry sector identifier of a company's headquarters location using the most recent system, *2017 NAICS Manual: United States*, detailing 1,057 industries. For more information, visit www.census.gov/eos/www/naics/.





North American Industry Classification System

Methodology

This report of drug use patterns by industry is based on a five-year analysis of American companies who drug test with Quest Diagnostics. Data from more than 14 million urine drug tests includes overall positivity rates by industry and by drug category for marijuana, cocaine, opiates, amphetamines, amphetamine, and methamphetamine.

- Data includes laboratory-based urine drug tests submitted by the general U.S. workforce for routine testing. Rehabilitation, criminal justice, and federally-mandated, safety-sensitive testing data are excluded. Positive results are tabulated prior to Medical Review Officer (MRO) evaluation.
- Each company is categorized by a single NAICS code. If a company can be categorized by multiple NAICS codes, it is assigned one code based on its largest revenue-producing report.
- An industry must meet an average annual minimum volume of at least 50,000 urine drug tests to be included in our output. Three NAICS sectors are not included in our data due to insufficient volume. Those sectors are: Agriculture, Forestry, Fishing and Hunting (11); Management of Companies & Enterprises (55); and Arts, Entertainment & Recreation (71).
- Shifts in customers and testing volume may influence positivity rates over time.
- More than 90 percent of our general U.S. workforce urine testing volume has been categorized. Data is excluded if a company is unable to be reliably classified into a category.

Industry Descriptions



21 | Mining

Activities of this sector are extracting naturally occurring mineral solids, such as coal and ore; liquid minerals, such as crude petroleum; and gases, such as natural gas; and beneficiating (e.g., crushing, screening, washing, and flotation) and other preparation at the mine site, or as part of mining activity.



22 | Utilities

Activities of this sector are generating, transmitting, and/or distributing electricity, gas, steam, and water and removing sewage through a permanent infrastructure of lines, mains, and pipe.



23 | Construction

Activities of this sector are erecting buildings and other structures (including additions); heavy construction other than buildings; and alterations, reconstruction, installation, and maintenance and repairs.



31-33 | Manufacturing

Activities of this sector are the mechanical, physical, or chemical transformation of materials, substances, or components into new products.



42 | Wholesale Trade

Activities of this sector are selling or arranging for the purchase or sale of goods for resale; capital or durable nonconsumer goods; and raw and intermediate materials and supplies used in production; and providing services incidental to the sale of the merchandise.



44-45 | Retail Trade

Activities of this sector are retailing merchandise generally in small quantities, to the general public and providing services incidental to the sale of the merchandise.



48-49 | Transportation & Warehousing

Activities of this sector are providing transportation of passengers and cargo, warehousing and storing goods, scenic and sightseeing transportation, and supporting these activities.



51 | Information

Activities of this sector are distributing information and cultural products, providing the means to transmit or distribute these products as data or communications, and processing data.



52 | Finance & Insurance

Activities of this sector involve the creation, liquidation, or change in ownership of financial assets (financial transactions) and/or facilitating financial transactions.



53 | Real Estate, Rental & Leasing

Activities of this sector are renting, leasing, or otherwise allowing the use of tangible or intangible assets (except copyrighted works), and providing related services.



54 | Professional, Scientific & Technical Services

Activities of this sector are performing professional, scientific, and technical services for the operations of other organizations.



56 | Administrative Support, Waste Management & Remediation Services

Activities of this sector are performing routine support activities for the day-to-day operations of other organizations.



61 | Educational Services

Activities of this sector are providing instruction and training in a wide variety of subjects.



62 | Health Care & Social Assistance

Activities of this sector are providing health care and social assistance for individuals.



72 | Accommodation & Food Services

Activities of this sector are providing customers with lodging and/or preparing meals, snacks, and beverages for immediate consumption.



81 | Other Services (except Public Administration)

Activities of this sector are providing services not elsewhere specified, including repairs, religious activities, grantmaking, advocacy, laundry, personal care, death care, and other personal services.



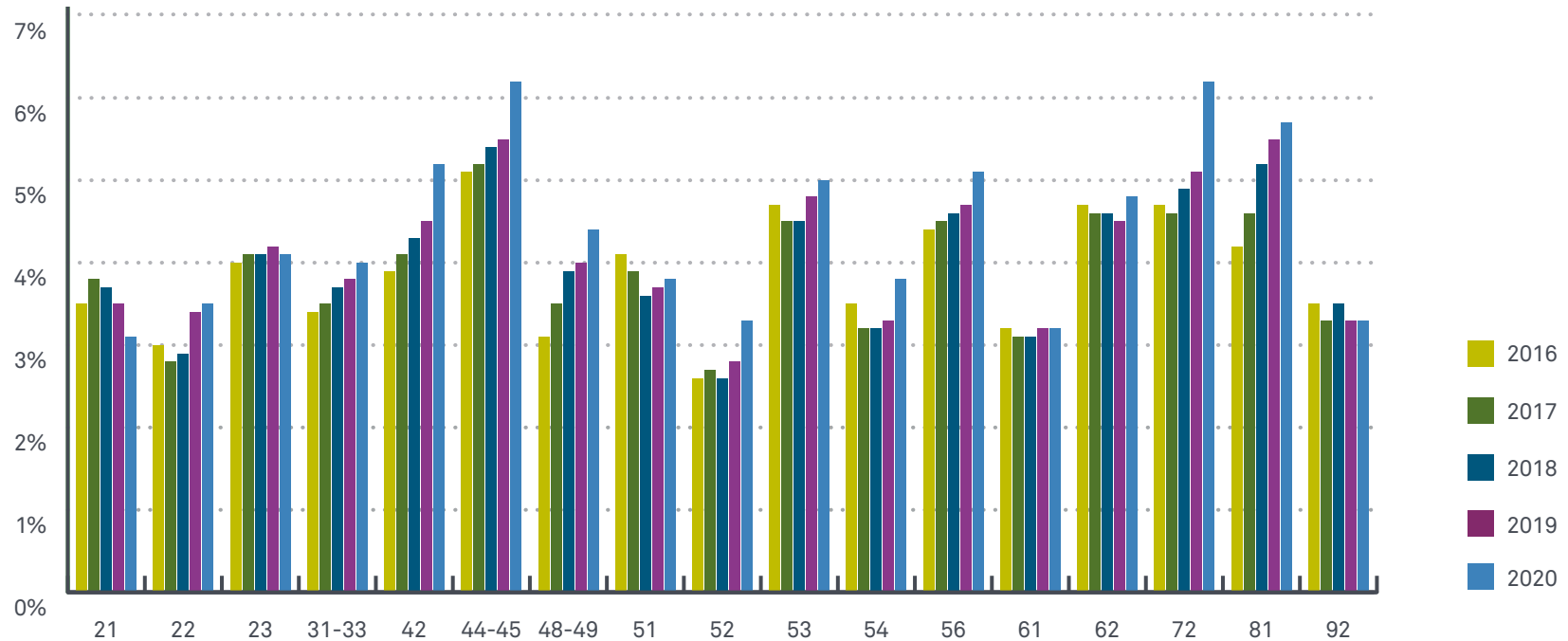
92 | Public Administration

Activities of this sector are administration, management, and oversight of public programs by Federal, State, and local governments.

Source: United States Census Bureau, Office of Management and Budget

Overall Positivity Rates | *Industry Insights*

Urine Drug Tests - General U.S. Workforce

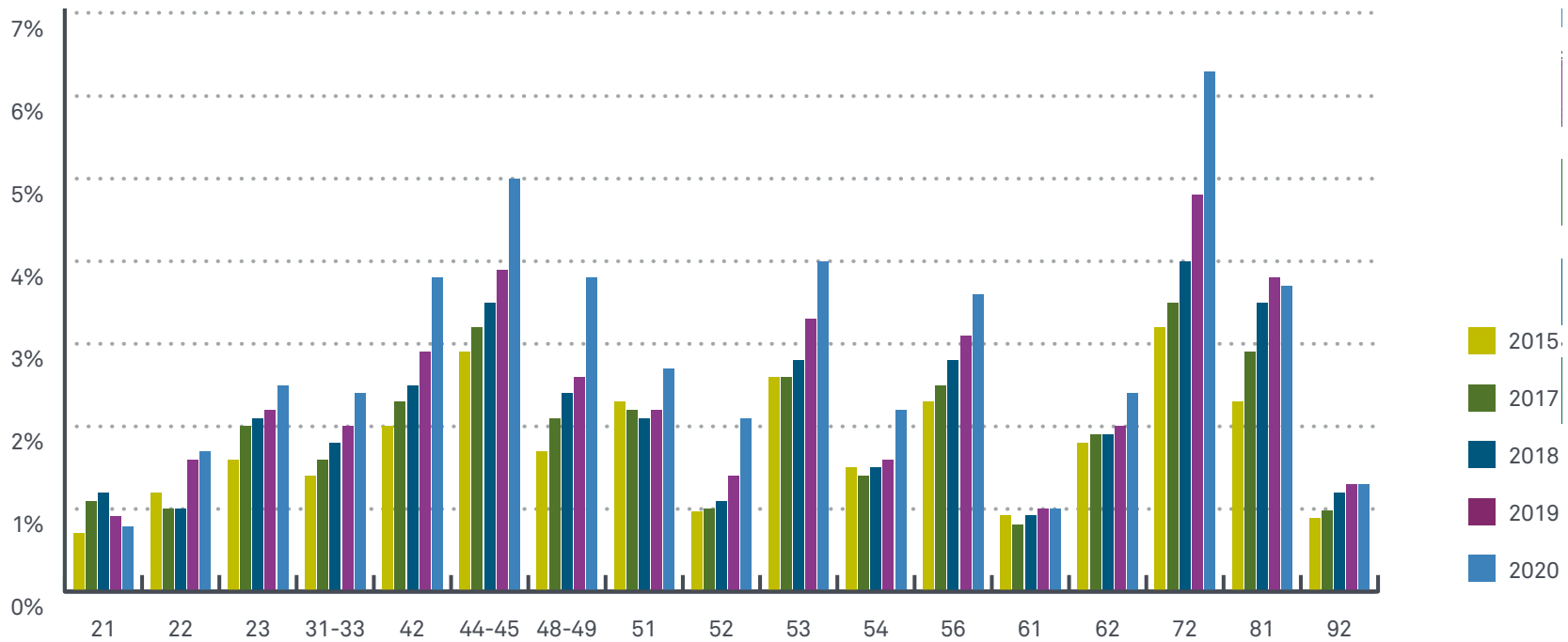


Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	4.7%	4.6%	4.9%	5.1%	6.2%
Administrative Support, Waste Management & Remediation Services ⁵⁶	4.4%	4.5%	4.6%	4.7%	5.1%
Construction ²³	4.0%	4.1%	4.1%	4.2%	4.1%
Educational Services ⁶¹	3.2%	3.1%	3.1%	3.2%	3.2%
Finance & Insurance ⁵²	2.6%	2.7%	2.6%	2.8%	3.3%
Health Care & Social Assistance ⁶²	4.7%	4.6%	4.6%	4.5%	4.8%
Information ⁵¹	4.1%	3.9%	3.6%	3.7%	3.8%
Manufacturing ³¹⁻³³	3.4%	3.5%	3.7%	3.8%	4.0%

Industry	2016	2017	2018	2019	2020
Mining ²¹	3.5%	3.8%	3.7%	3.5%	3.1%
Other Services (except Public Administration) ⁸¹	4.2%	4.6%	5.2%	5.5%	5.7%
Professional, Scientific & Technical ⁵⁴	3.5%	3.2%	3.2%	3.3%	3.8%
Public Administration ⁹²	3.5%	3.3%	3.5%	3.3%	3.3%
Real Estate, Rental & Leasing ⁵³	4.7%	4.5%	4.5%	4.8%	5.0%
Retail Trade ⁴⁴⁻⁴⁵	5.1%	5.2%	5.4%	5.5%	6.2%
Transportation & Warehousing ⁴⁸⁻⁴⁹	3.1%	3.5%	3.9%	4.0%	4.4%
Utilities ²²	3.0%	2.8%	2.9%	3.4%	3.5%
Wholesale Trade ⁴²	3.9%	4.1%	4.3%	4.5%	5.2%

Positivity Rates by Drug: Marijuana | *Industry Insights*

Urine Drug Tests - General U.S. Workforce



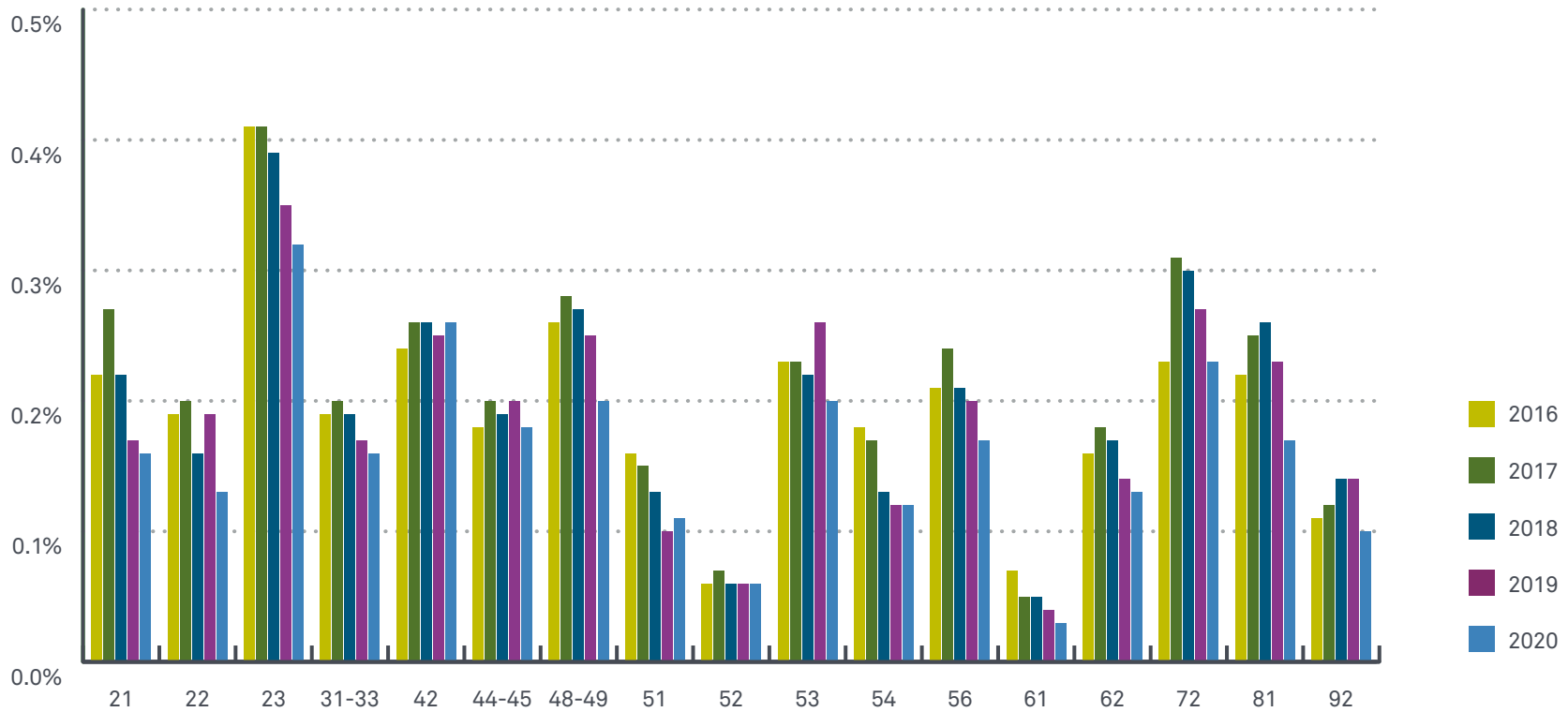
Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	3.2%	3.5%	4.0%	4.8%	6.3%
Administrative Support, Waste Management & Remediation Services ⁵⁶	2.3%	2.5%	2.8%	3.1%	3.6%
Construction ²³	1.6%	2.0%	2.1%	2.2%	2.5%
Educational Services ⁶¹	0.92%	0.81%	0.92%	1.0%	1.0%
Finance & Insurance ⁵²	0.97%	1.0%	1.1%	1.4%	2.1%
Health Care & Social Assistance ⁶²	1.8%	1.9%	1.9%	2.0%	2.4%
Information ⁵¹	2.3%	2.2%	2.1%	2.2%	2.7%
Manufacturing ³¹⁻³³	1.4%	1.6%	1.8%	2.0%	2.4%

Industry	2016	2017	2018	2019	2020
Mining ²¹	0.71%	1.1%	1.2%	0.91%	0.79%
Other Services (except Public Administration) ⁸¹	2.3%	2.9%	3.5%	3.8%	3.7%
Professional, Scientific & Technical ⁵⁴	1.5%	1.4%	1.5%	1.6%	2.2%
Public Administration ⁹²	0.89%	0.98%	1.2%	1.3%	1.3%
Real Estate, Rental & Leasing ⁵³	2.6%	2.6%	2.8%	3.3%	4.0%
Retail Trade ⁴⁴⁻⁴⁵	2.9%	3.2%	3.5%	3.9%	5.0%
Transportation & Warehousing ⁴⁸⁻⁴⁹	1.7%	2.1%	2.4%	2.6%	3.8%
Utilities ²²	1.2%	1.0%	1.0%	1.6%	1.7%
Wholesale Trade ⁴²	2.0%	2.3%	2.5%	2.9%	3.8%

(More than 17 million tests from 2016 - 2020)

Positivity Rates by Drug: Cocaine | *Industry Insights*

Urine Drug Tests - General U.S. Workforce

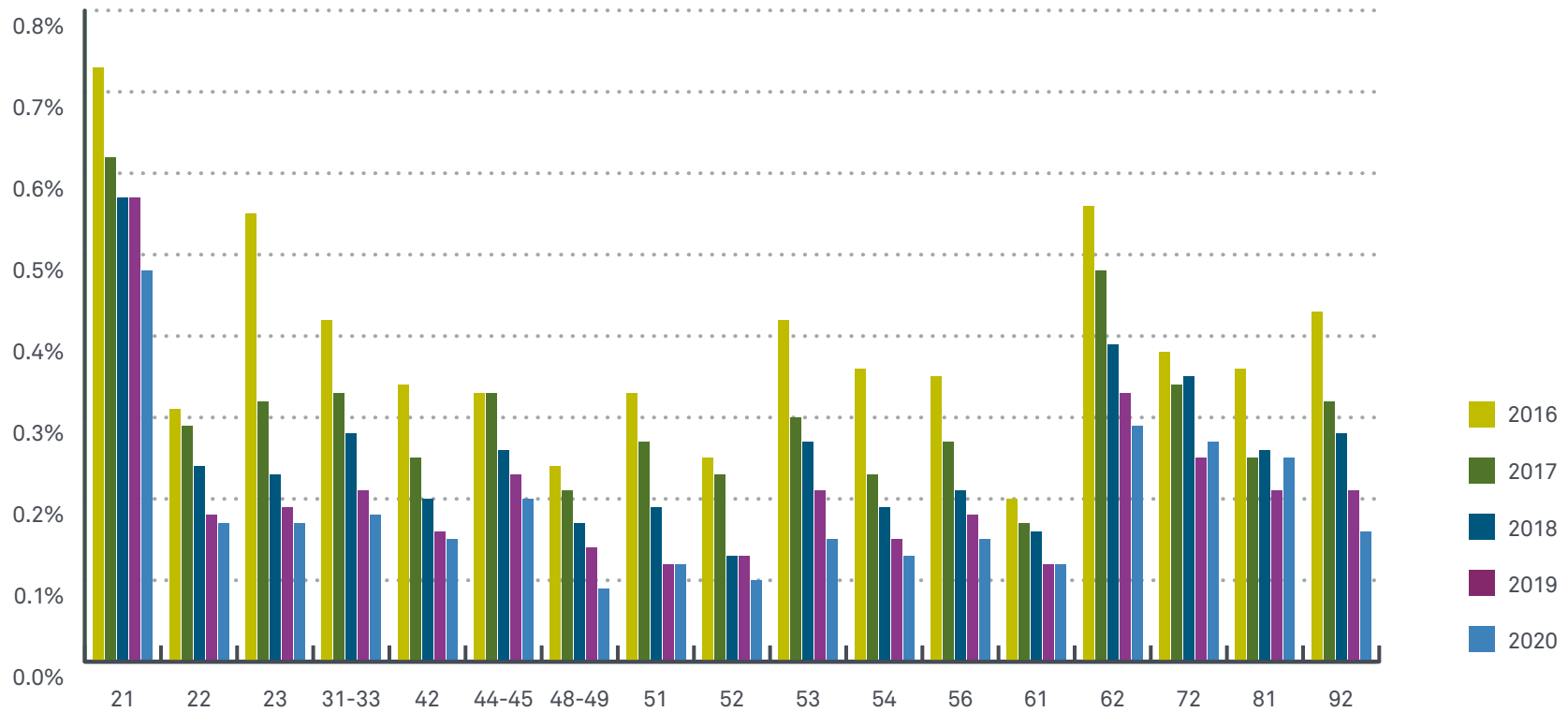


Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	0.23%	0.31%	0.30%	0.27%	0.23%
Administrative Support, Waste Management & Remediation Services ⁵⁶	0.21%	0.24%	0.21%	0.20%	0.17%
Construction ²³	0.41%	0.41%	0.39%	0.35%	0.32%
Educational Services ⁶¹	0.07%	0.05%	0.05%	0.04%	0.03%
Finance & Insurance ⁵²	0.06%	0.07%	0.06%	0.06%	0.06%
Health Care & Social Assistance ⁶²	0.16%	0.18%	0.17%	0.14%	0.13%
Information ⁵¹	0.16%	0.15%	0.13%	0.10%	0.11%
Manufacturing ³¹⁻³³	0.19%	0.20%	0.19%	0.17%	0.16%

Industry	2016	2017	2018	2019	2020
Mining ²¹	0.22%	0.27%	0.22%	0.17%	0.16%
Other Services (except Public Administration) ⁸¹	0.22%	0.25%	0.26%	0.23%	0.17%
Professional, Scientific & Technical ⁵⁴	0.18%	0.17%	0.13%	0.12%	0.12%
Public Administration ⁹²	0.11%	0.12%	0.14%	0.14%	0.10%
Real Estate, Rental & Leasing ⁵³	0.23%	0.23%	0.22%	0.26%	0.20%
Retail Trade ⁴⁴⁻⁴⁵	0.18%	0.20%	0.19%	0.20%	0.18%
Transportation & Warehousing ⁴⁸⁻⁴⁹	0.26%	0.28%	0.27%	0.25%	0.20%
Utilities ²²	0.19%	0.20%	0.16%	0.19%	0.13%
Wholesale Trade ⁴²	0.24%	0.26%	0.26%	0.25%	0.26%

Positivity Rates by Drug: Opiates | *Industry Insights*

Urine Drug Tests - General U.S. Workforce



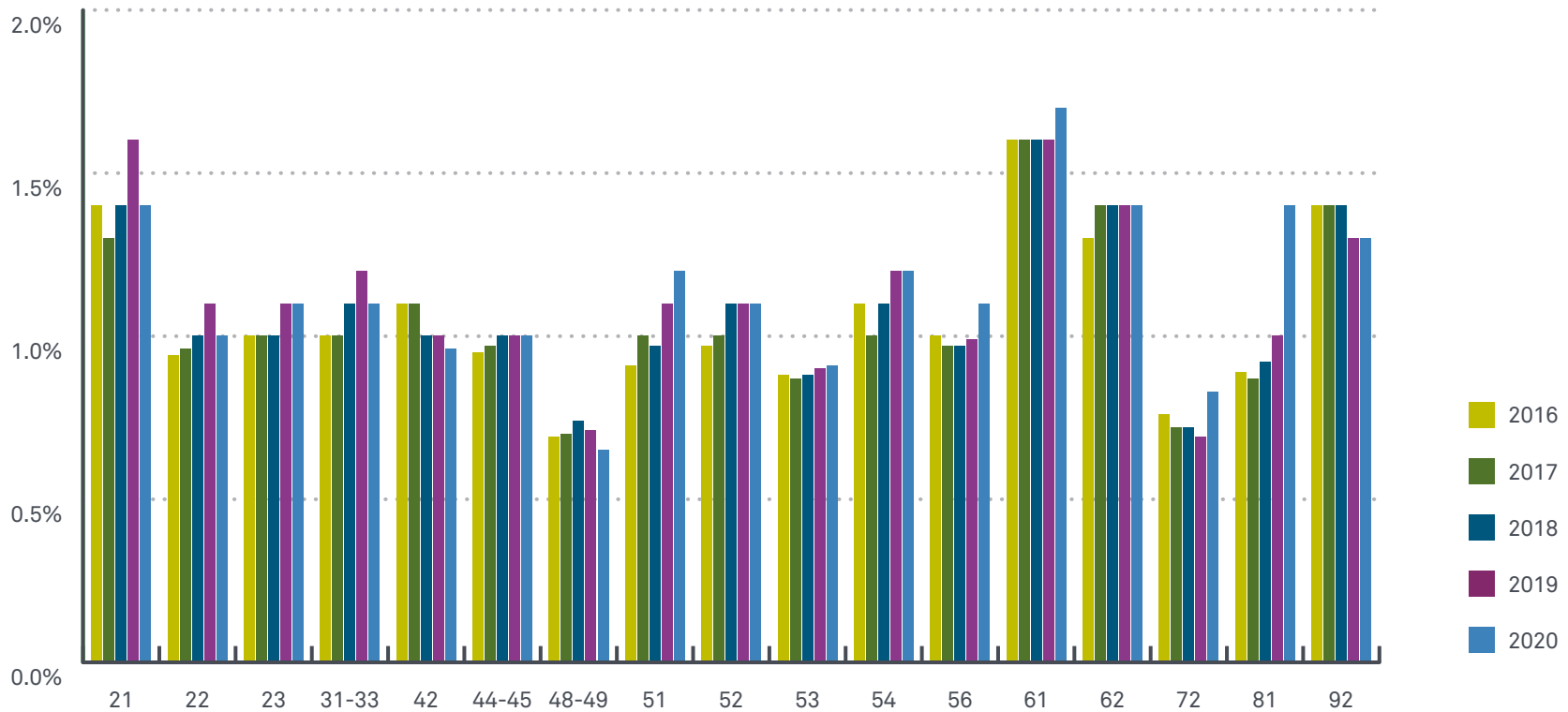
Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	0.38%	0.34%	0.35%	0.25%	0.27%
Administrative Support, Waste Management & Remediation Services ⁵⁶	0.35%	0.27%	0.21%	0.18%	0.15%
Construction ²³	0.55%	0.32%	0.23%	0.19%	0.17%
Educational Services ⁶¹	0.20%	0.17%	0.16%	0.12%	0.12%
Finance & Insurance ⁵²	0.25%	0.23%	0.13%	0.13%	0.10%
Health Care & Social Assistance ⁶²	0.56%	0.48%	0.39%	0.33%	0.29%
Information ⁵¹	0.33%	0.27%	0.19%	0.12%	0.12%
Manufacturing ³¹⁻³³	0.42%	0.33%	0.28%	0.21%	0.18%

Industry	2016	2017	2018	2019	2020
Mining ²¹	0.73%	0.62%	0.57%	0.57%	0.48%
Other Services (except Public Administration) ⁸¹	0.36%	0.25%	0.26%	0.21%	0.25%
Professional, Scientific & Technical ⁵⁴	0.36%	0.23%	0.19%	0.15%	0.13%
Public Administration ⁹²	0.43%	0.32%	0.28%	0.21%	0.16%
Real Estate, Rental & Leasing ⁵³	0.42%	0.30%	0.27%	0.21%	0.15%
Retail Trade ⁴⁴⁻⁴⁵	0.33%	0.33%	0.26%	0.23%	0.20%
Transportation & Warehousing ⁴⁸⁻⁴⁹	0.24%	0.21%	0.17%	0.14%	0.09%
Utilities ²²	0.31%	0.29%	0.24%	0.18%	0.17%
Wholesale Trade ⁴²	0.34%	0.25%	0.20%	0.16%	0.15%

(More than 17 million tests from 2016 - 2020)

Positivity Rates by Drug: Amphetamines (Amphetamine and Methamphetamine) | *Industry Insights*

Urine Drug Tests - General U.S. Workforce

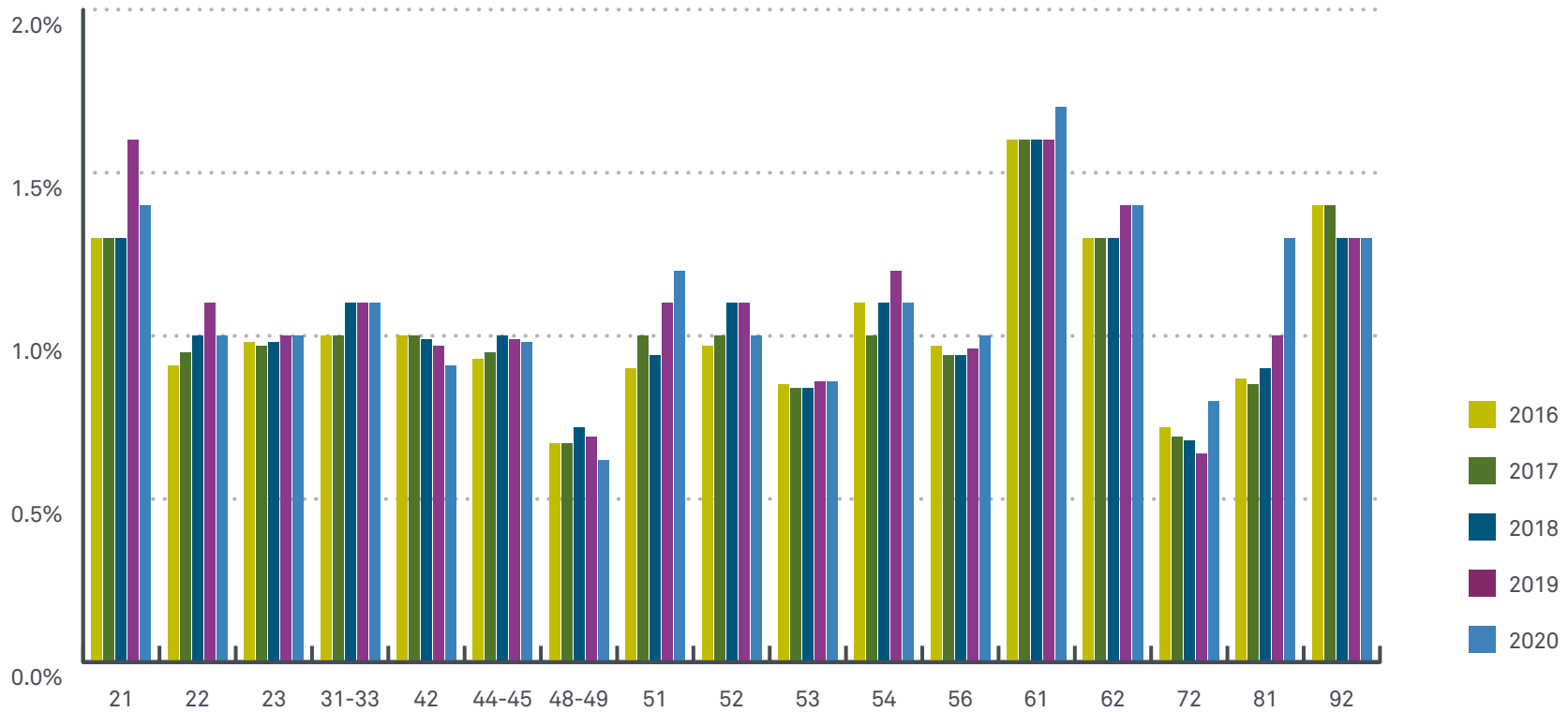


Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	0.76%	0.72%	0.72%	0.69%	0.83%
Administrative Support, Waste Management & Remediation Services ⁵⁶	1.0%	0.97%	0.97%	0.99%	1.1%
Construction ²³	1.0%	1.0%	1.0%	1.1%	1.1%
Educational Services ⁶¹	1.6%	1.6%	1.6%	1.6%	1.7%
Finance & Insurance ⁵²	0.97%	1.0%	1.1%	1.1%	1.1%
Health Care & Social Assistance ⁶²	1.3%	1.4%	1.4%	1.4%	1.4%
Information ⁵¹	0.91%	1.0%	0.97%	1.1%	1.2%
Manufacturing ³¹⁻³³	1.0%	1.0%	1.1%	1.2%	1.1%

Industry	2016	2017	2018	2019	2020
Mining ²¹	1.4%	1.3%	1.4%	1.6%	1.4%
Other Services (except Public Administration) ⁸¹	0.89%	0.87%	0.92%	1.0%	1.4%
Professional, Scientific & Technical ⁵⁴	1.1%	1.0%	1.1%	1.2%	1.2%
Public Administration ⁹²	1.4%	1.4%	1.4%	1.3%	1.3%
Real Estate, Rental & Leasing ⁵³	0.88%	0.87%	0.88%	0.90%	0.91%
Retail Trade ⁴⁴⁻⁴⁵	0.95%	0.97%	1.0%	1.0%	1.0%
Transportation & Warehousing ⁴⁸⁻⁴⁹	0.69%	0.70%	0.74%	0.71%	0.65%
Utilities ²²	0.94%	0.96%	1.0%	1.1%	1.0%
Wholesale Trade ⁴²	1.1%	1.1%	1.0%	1.0%	0.96%

Positivity Rates by Drug: Amphetamine | *Industry Insights*

Urine Drug Tests - General U.S. Workforce



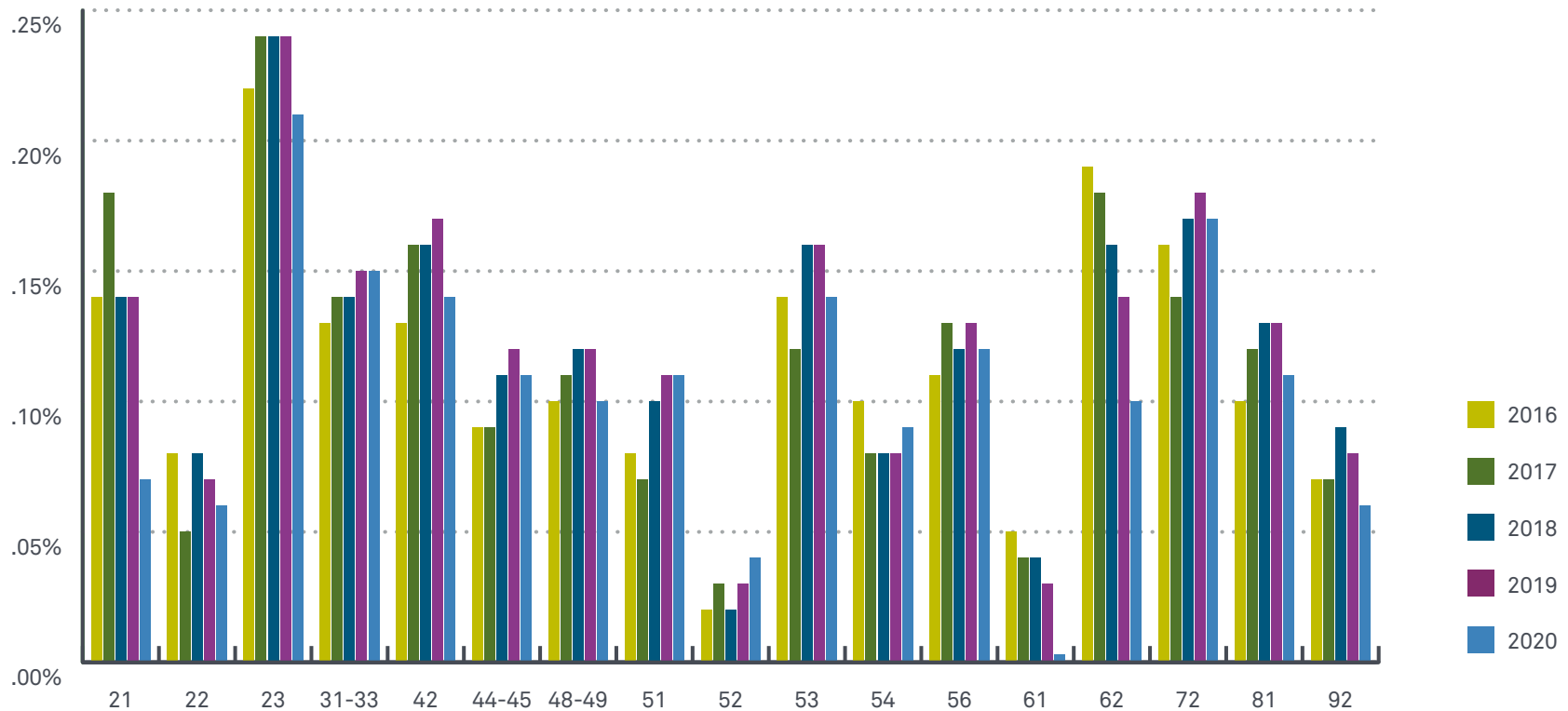
Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	0.72%	0.69%	0.68%	0.64%	0.80%
Administrative Support, Waste Management & Remediation Services ⁵⁶	0.97%	0.94%	0.94%	0.96%	1.0%
Construction ²³	0.98%	0.97%	0.98%	1.0%	1.0%
Educational Services ⁶¹	1.6%	1.6%	1.6%	1.6%	1.7%
Finance & Insurance ⁵²	0.97%	1.0%	1.1%	1.1%	1.0%
Health Care & Social Assistance ⁶²	1.3%	1.3%	1.3%	1.4%	1.4%
Information ⁵¹	0.90%	1.0%	0.94%	1.1%	1.2%
Manufacturing ³¹⁻³³	1.0%	1.0%	1.1%	1.1%	1.1%

Industry	2016	2017	2018	2019	2020
Mining ²¹	1.3%	1.3%	1.3%	1.6%	1.4%
Other Services (except Public Administration) ⁸¹	0.87%	0.85%	0.90%	1.0%	1.3%
Professional, Scientific & Technical ⁵⁴	1.1%	1.0%	1.1%	1.2%	1.1%
Public Administration ⁹²	1.4%	1.4%	1.3%	1.3%	1.3%
Real Estate, Rental & Leasing ⁵³	0.85%	0.84%	0.84%	0.86%	0.86%
Retail Trade ⁴⁴⁻⁴⁵	0.93%	0.95%	1.0%	0.99%	0.98%
Transportation & Warehousing ⁴⁸⁻⁴⁹	0.67%	0.67%	0.72%	0.69%	0.62%
Utilities ²²	0.91%	0.95%	1.0%	1.1%	1.0%
Wholesale Trade ⁴²	1.0%	1.0%	0.99%	0.97%	0.91%

(More than 17 million tests from 2016 - 2020)

Positivity Rates by Drug: Methamphetamine | *Industry Insights*

Urine Drug Tests - General U.S. Workforce



Industry	2016	2017	2018	2019	2020
Accommodation & Food Services ⁷²	0.16%	0.14%	0.17%	0.18%	0.17%
Administrative Support, Waste Management & Remediation Services ⁵⁶	0.11%	0.13%	0.12%	0.13%	0.12%
Construction ²³	0.22%	0.24%	0.24%	0.24%	0.21%
Educational Services ⁶¹	0.05%	0.04%	0.04%	0.03%	0.03%
Finance & Insurance ⁵²	0.02%	0.03%	0.02%	0.03%	0.04%
Health Care & Social Assistance ⁶²	0.19%	0.18%	0.16%	0.14%	0.10%
Information ⁵¹	0.08%	0.07%	0.10%	0.11%	0.11%
Manufacturing ³¹⁻³³	0.13%	0.14%	0.14%	0.15%	0.15%

Industry	2016	2017	2018	2019	2020
Mining ²¹	0.14%	0.18%	0.14%	0.14%	0.07%
Other Services (except Public Administration) ⁸¹	0.10%	0.12%	0.13%	0.13%	0.11%
Professional, Scientific & Technical ⁵⁴	0.10%	0.08%	0.08%	0.08%	0.09%
Public Administration ⁹²	0.07%	0.07%	0.09%	0.08%	0.06%
Real Estate, Rental & Leasing ⁵³	0.14%	0.12%	0.16%	0.16%	0.14%
Retail Trade ⁴⁴⁻⁴⁵	0.09%	0.09%	0.11%	0.12%	0.11%
Transportation & Warehousing ⁴⁸⁻⁴⁹	0.10%	0.11%	0.12%	0.12%	0.10%
Utilities ²²	0.08%	0.05%	0.08%	0.07%	0.06%
Wholesale Trade ⁴²	0.13%	0.16%	0.16%	0.17%	0.14%



About Quest Diagnostics

Quest Diagnostics helps empower 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 healthcare management. Quest annually serves one in three adult Americans and half the physicians and hospitals in the United States, and our 47,000 employees understand that, in the right hands and with the right context, our diagnostic insights can inspire actions that transform lives.

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