



One in Two Adolescents Misuse Their Prescription Drugs, Study Shows

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Analysis by Quest Diagnostics of 2.5 million de-identified test results finds about half of patients of all ages are still taking opioids and other potentially addictive medications inappropriately

MADISON, N.J., Sept. 10, 2015 /PRNewswire/ -- Although prescription drug misuse is on the decline among adolescents, one in two patients tested between the ages of 10 and 17 years are not using their medications appropriately, potentially putting their health at risk, according to an analysis by Quest Diagnostics (NYSE: DGX), the world's leading provider of diagnostic information services.



However, patients in the 10-17 years age group also showed the greatest improvement in appropriate prescription drug use compared to all other age groups over a four-year period. In 2011, 70% of adolescents tested by Quest Diagnostics showed evidence of prescription drug misuse compared to 52% in 2014. These findings align with research from the National Institute of Drug Abuse, which revealed a decline in high school students' misuse of prescription drugs over the past two years.^[1]

The Quest Diagnostics Health Trends™ study, Prescription Drug Misuse in America: Diagnostic Insights in the Continuing Drug Epidemic Battle, is based on an analysis of approximately 2.5 million de-identified test results on patients of all ages in 48 states and the District of Columbia. According to the analysis, the overall rate of prescription drug misuse for all ages was 53% in 2014, a decline of 16% relative to the rate of 63% in 2011. Drug misuse is defined as evidence, based on lab test results, that a patient is using or combining non-prescribed drugs or skipping doses in a manner that is inconsistent with the ordering physician's directions. Quest's prescription drug monitoring test services help to identify evidence of use of up to 26 prescription and illicit drugs, such as opioids and marijuana.

The study is available at www.QuestDiagnostics.com/HealthTrends

"The Quest analysis shows that while our nation is making great strides to curb drug abuse and misuse, we have a long road ahead before we can declare victory on the prescription drug epidemic," said Leland F. McClure, PhD, director, medical science liaison, Quest Diagnostics. "By every means of slicing the Quest test data – age, gender, geography, and payer type – we observed significant patterns of misuse in our nationally representative database. This is troubling because it strongly suggests, using objective lab data, that there truly is no good way to predict which patient may abuse a prescribed therapy -- everyone is potentially at risk."

The findings of high misuse rates among adolescents follows the U.S. Food and Drug Administration approval in August 2015 of the opioid pain reliever OxyContin (oxycodone) for children 11–16 years old whose pain is severe enough to require daily around-the-clock long-term treatment and for which alternative options are inadequate.

"Having more options for pain relief is a great potential benefit for children experiencing significant pain," said Dr. McClure. "But our data is also a stark reminder that diligent monitoring of prescription drug regimens in young patients is absolutely critical."

Other key findings from the study:

- All patients are at risk of prescription misuse. The high rate of prescription medication misuse (53%) was observed across all age groups and in both genders, as well as across patients enrolled in different types of health plans (Medicaid, Medicare and private payer).
- The type of drugs misused varies by age. In adults 30 years of age and older, the two drug groups most likely to be misused, based on test results, were oxycodone and opiates. In children less than 10 years of age, amphetamines and opiates were most likely to be implicated in misuse. In patients 10-29 years of age, the leading drug groups associated with evidence of misuse were marijuana and opiates.
- Some states and regions are curbing prescription drug misuse better than others. California, Florida, Georgia, Kentucky, New York, Pennsylvania, and Tennessee all showed marked improvement in their inconsistency rates from 2011-2014. On a regional basis, the Mountain States and Great Plains states (Colorado, Montana, North Dakota, South Dakota, Utah, and Wyoming) had the highest inconsistency rate, at 61%, while New York and New Jersey together had the lowest inconsistency rate, at 41%.
- Patterns of drug misuse shift over the past four years. The percentage of patients who did not take their medications

consistently, suggesting they are skipping doses, increased from 40% in 2011 to 44% in 2014. Additionally, 35% of patients tested in 2014 showed evidence of combining drugs without a clinician's oversight, compared to 32% in 2011, indicating heightened potential for dangerous drug combinations.

The analysis was based on clinical lab testing performed by Quest Diagnostics' laboratories as part of the company's prescription drug monitoring services.

Study Strengths and Limitations

The study's strengths are its size and national scope; use of an objective laboratory method, versus surveys or polls, which may be subject to user misrepresentation or error; confirmation of all positive drug screens by mass spectrometry, the most advanced drug testing method; and for consistency rate analysis the inclusion of patients under care by clinicians in a primary care or pain-management setting, but exclusion of those in drug rehabilitation or addiction treatment settings, where unusually high rates of drug misuse may be expected.

Study limitations include geographic disparities; inability to confirm drug misuse through access to medical records or clinical evaluation; and technical factors and patient variations, such as drug metabolism and hydration state, that may affect the reliability of a minority of results. Quest Diagnostics does not provide services to all clinicians in the U.S., so results are not broadly representative of all patients taking prescription medications in the U.S. It is also possible some clinicians tested patients due to appropriate suspicions of drug misuse, and that some clinicians omitted to specify all drugs prescribed for the patient on a test order, skewing some results.

The company's Quest Diagnostics Health Trends studies are performed in compliance with applicable privacy regulations, the company's strict privacy policies and as approved by the Western Institutional Review Board.

About Quest Diagnostics Health Trends™

Quest Diagnostics Health Trends reports provide diagnostic-based insights into disease and wellness in the United States based on analysis of de-identified test results from Quest Diagnostics. The company maintains the largest private clinical laboratory database in the United States, based on 20 billion tests results. Quest Diagnostics Health Trends reports are published in peer reviewed medical journals and as a public service to inspire people, health care providers and policy makers to take actions leading to better health outcomes. Previous reports have focused on allergies and asthma, cervical cancer, chronic kidney disease, diabetes, heart disease, influenza, pregnancy, rotavirus and workplace wellness. Quest Diagnostics also produces the Quest Diagnostics Drug Testing Index™, an analysis of workplace drug positivity trends. Visit QuestDiagnostics.com/HealthTrends

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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^[1] Monitoring the Future survey, National Institute of Drug Abuse, 2014

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