



## Illicit Drug and Opioid Use Disorders among Non-Metropolitan Residents

Tyrone F. Borders, PhD; Hefei Wen, PhD

### Overview of Key Findings

Illicit drug use disorder rates are similar across metropolitan and non-metropolitan areas and did not decline from 2011-2013 to 2014-2015 despite the implementation of major substance use treatment policies over this time period. Among non-metropolitan residents in 2014-2015:

- 0.20% (n=57,803) had a past year heroin use disorder, a significant increase from 2011-2013.
- 1.00% (n=297,562) had a past year prescription pain reliever disorder.
- 1.09% (n=320,363) had a past year opioid use disorder.
- 2.86% (n=838,316) had a past year illicit drug use disorder of any type.

### Background and Purpose

Little research has investigated the prevalence of illicit drug use disorders among non-metropolitan (rural) residents. Estimates from the National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)-III conducted in 2012-2013 indicated that 4.1% of urban and 3.0% of rural adults ages 18 and older satisfied criteria for a past year drug use disorder.<sup>1,2</sup> Rising opioid use mortality rates have heightened concerns about both heroin and prescription pain reliever misuse.<sup>3</sup> According to the NESARC-I and NESARC-III, the lifetime prevalence of a heroin use disorder increased from 0.13% to 0.53% among rural adults between 2001-2002 and 2012-2013.<sup>4</sup> This brief provides up-to-date estimates of:

1. Non-metropolitan and metropolitan past year prevalence rates of any illicit drug, opioid, heroin, and prescription pain reliever use disorders among adults ages 18-64; and
2. Temporal changes in past year illicit drug use disorder prevalence rates.

### Methods

**Data.** We conducted analyses of nationally representative data from the National Survey on Drug Use and Health (NSDUH), a series of nationally representative surveys administered in-person and the primary source of information on substance use behaviors by the U.S. household population. Metropolitan and non-metropolitan status was defined according to U.S. Office of Management and Budget definitions. We combined several years of data to compare and contrast temporal changes amongst metropolitan (unweighted N=228,931; weighted N=162,180,514) and other non-metropolitan adults (unweighted N=59,629; weighted N=29,332,673). These years correspond to major substance use treatment policy changes (implementation of initial parity laws in 2008-2010, early insurance expansions in 2011-2013, and clarification of parity laws and further insurance expansions in 2014-2015). We limited analyses to individuals 18-64 years of age as younger individuals have different drug use profiles and older individuals were not as affected by substance use treatment policies.

**Dependent Variables.** Past year drug use disorders were determined according to Diagnostic and Statistical Manual (DSM)-IV symptom and impairment criteria. Illicit drug use includes the use of illegal drugs and the non-medical use of legal controlled substances. Types of drugs included marijuana, cocaine, heroin, hallucinogens, inhalants, methamphetamine, pain medications, tranquilizers, stimulants, and sedatives. We examined the presence of any past year drug use disorder as well as the prevalence of any past year opioid disorder, a past year heroin use disorder, and a past year prescription pain reliever use disorder. The majority of prescription pain relievers are opioids (i.e., hydrocodone, oxycodone, tramadol, morphine, fentanyl, buprenorphine, oxymorphone, and hydromorphone products; Demerol; and Methadone); other pain relievers account for only 0.3% of past year prescription pain reliever use according to estimates from the 2015 NSDUH.<sup>5</sup>

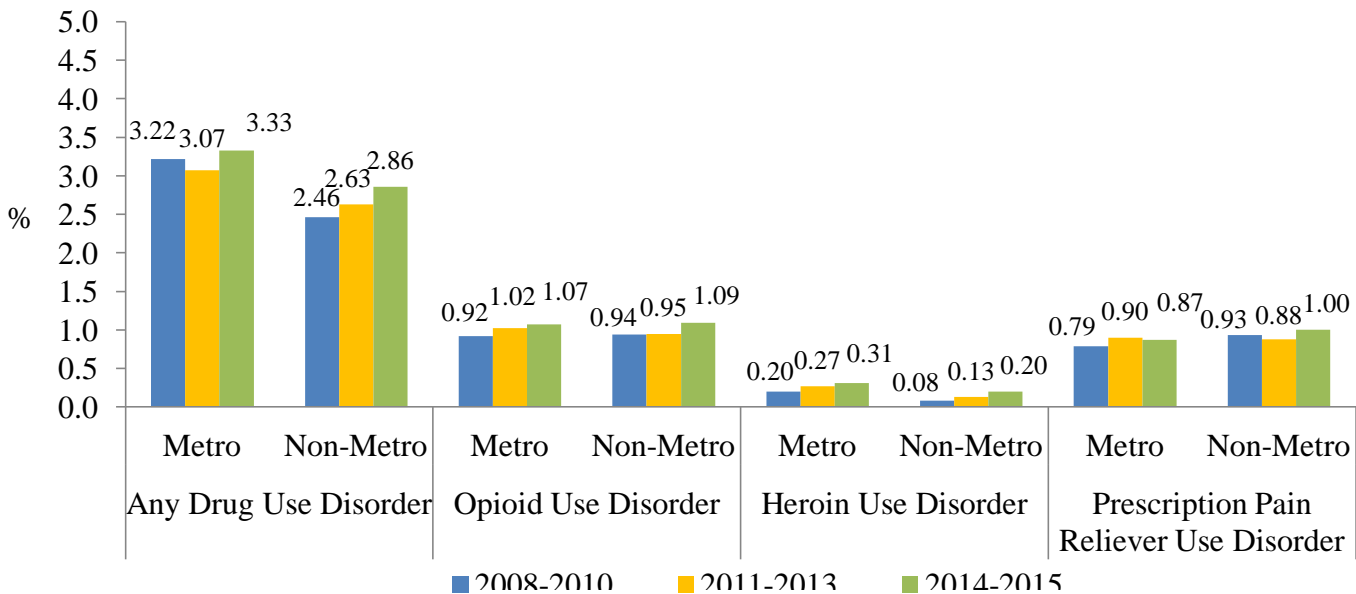
**Independent Variables.** In addition to time periods and metropolitan/non-metropolitan residence, we adjusted for other covariates that could be associated with drug use disorders. Demographics included age (18-25, 26-34, 35-49, and 50-64 years), gender, and race/ethnicity (Hispanic, black/African American, Asian, other, and non-Hispanic white). Social characteristics were marital status (never married, divorced, widowed, and married) and education (< high school graduate, high school graduate, some college, and college graduate). Economic characteristics were employment (unemployed, part-time, other, and full-time employment); household income (< 100%, 100%-200%, and > 200% of the Federal poverty level); and health insurance (Medicaid, private insurance, other insurance, and no insurance).

**Analysis.** We conducted descriptive and bivariate analyses to compare and contrast prevalence rates for drug use disorders across metropolitan and non-metropolitan areas and time periods. Next, we conducted logistic regression analyses to test for metropolitan versus non-metropolitan differences in the odds of drug use disorders after adjusting for 1) demographic characteristics only and 2) demographic, social, and economic characteristics. All analyses accounted for the NSDUH’s complex sampling scheme and weights.

**Findings**

Weighted prevalence rates (%) for past year drug use disorders are shown in Figure 1.

**Figure 1. Past Year Drug Use Disorder Prevalence (%) over Time by Metropolitan Residence**



Note: Crude prevalence rates are expressed as a % and are population-weighted.

The prevalence of any type of past year drug use disorder was statistically significantly ( $P < .05$ ) higher among metropolitan than non-metropolitan adults ages 18-64 in unadjusted and adjusted analyses. The prevalence of any drug use disorder increased significantly among metropolitan residents from 2011-2013 to 2014-2015. The prevalence of a past year opioid use disorder was comparable among non-metropolitan and metropolitan adults ages 18-64 in unadjusted and adjusted analyses; these non-significant differences were stable over time. The prevalence of a past year heroin use disorder was significantly higher among metropolitan than non-metropolitan adults at each time period in unadjusted and adjusted analyses. Adjusting for demographic, social, and economic factors, the prevalence of a heroin use disorder increased among non-metropolitan adults from 2011-2013 to 2014-2015 and among metropolitan adults from 2008-2010 to 2011-2013. Lastly, the prevalence of a prescription pain reliever use disorder remained similar among metropolitan and non-metropolitan adults at each time period in unadjusted and adjusted analyses. However, the prevalence increased significantly among metropolitan adults from 2008-2010 to 2011-2013 after adjusting for demographic, social, and economic factors.

### Conclusions and Potential Policy Implications

Using nationally representative data collected as part of the NSDUH, the findings presented here provide up-to-date estimates of the prevalence of drug use disorders among metropolitan and non-metropolitan adults 18-64 years of age. Similar to prior findings from the NESARC-III, we found that drug use prevalence rates are only slightly higher among metropolitan than non-metropolitan adults.<sup>2</sup> Recent reports have drawn attention to prescription drug misuse in rural communities,<sup>6</sup> but very little prior empirical research has actually compared and contrasted prescription pain reliever disorder rates among metropolitan and non-metropolitan adults. Using 2015 NSDUH data, a recent study reported that prescription pain reliever use disorder prevalence was similar among metropolitan and non-metropolitan users of prescription pain relievers.<sup>7</sup> This brief provides up-to-date estimates indicating that prescription pain reliever prevalence rates are similar among adults ages 18-64 in metropolitan and non-metropolitan counties. This report's findings also raise concerns about increases in heroin use disorders among non-metropolitan and metropolitan adults in recent years, or from 2011-2013 to 2014-2015. Heroin is more frequently injected than prescription pain relievers and is associated with Hepatitis C and HIV transmission.<sup>8</sup> Moreover, because the compounds contained in heroin are often unknown, it is associated with a higher risk of overdose mortality than prescription pain reliever use.<sup>8</sup>

Potential policy issues emerging from our research include:

- 1) Insurance reimbursements for screening, brief intervention, and referral to treatment (SBIRT)<sup>9,10</sup> in rural primary care settings to help prevent the development of drug use disorders.
- 2) Capacity limitations of rural-serving outpatient and residential treatment programs.
- 3) Limited supply of behavioral health providers serving rural areas, including psychiatrists, clinical psychologists, social workers, and psychiatric nurse practitioners.
- 4) A need to target substance abuse treatment, needle exchanges, and safe sex education programs toward areas with rising heroin use.
- 5) Provider caps on the number of buprenorphine-prescribed patients, which limits access to Medication-Assisted Treatment (MAT) for opioid use disorders.

**In summary**, we found that the prevalence of drug use disorders did not decline among non-metropolitan and metropolitan adults since 2008-2010 despite the implementation of substance use treatment and insurance expansion policies over this time period. Thus, additional policies and interventions are arguably warranted to further promote access to treatment and reduce the prevalence of drug use disorders in the U.S.

## References

1. Grant BF, Chu A, Sigman R, et al. National Institute on Alcohol Abuse and Alcoholism National Epidemiologic Survey on Alcohol and Related Conditions-III (NESARC-III) Source and Accuracy Statement. Bethesda, MD: NIAAA; 2015.
2. Grant BF, Saha TD, Ruan WJ, et al. Epidemiology of DSM-5 Drug Use Disorder: Results from the National Epidemiologic Survey on Alcohol and Related Conditions-III. *JAMA Psychiatry*. 2016;73(1):39-47.
3. Rudd RA, Seth P, David F, Scholl F. Increases in Drug and Opioid-Involved Overdose Deaths—United States, 2010-2015. *MMWR Morb Mortal Wkly Rep*. 2016;65(50-51):1445-1452.
4. Martins SS, Sarvet A, Santaella-Tenorio J, Saha T, Grant BF, Hasin DS. Changes in US Lifetime Heroin Use and Heroin Use Disorder: Prevalence From the 2001-2002 to 2012-2013 National Epidemiologic Survey on Alcohol and Related Conditions. *JAMA Psychiatry*. 2017;74(5):445-455.
5. Hughes A, Williams MR, Lipari RN, Bose J, Copello EAP, Kroutil LA. Prescription Drug Use and Misuse in the United States: Results from the 2015 National Survey on Drug Use and Health. Rockville, MD: SAMHSA; September 2016.
6. Keyes KM, Cerda M, Brady JE, Havens JR, Galea S. Understanding the Rural-Urban Differences in Nonmedical Prescription Opioid Use and Abuse in the United States. *Am J Public Health*. 2014;104(2):e52-e59.
7. Han B, Compton WM, Blanco C, Crane E, Lee J, Jones CM. Prescription Opioid Use, Misuse, and Use Disorders in U.S. Adults: 2015 National Survey on Drug Use and Health. *Ann Intern Med*. 2017;167(5):293-301.
8. Volkow ND. America's Addiction to Opioids: Heroin and Prescription Drug Abuse. Senate Caucus on International Narcotics Control; May 14, 2014. <https://www.drugabuse.gov/about-nida/legislative-activities/testimony-to-congress/2016/americas-addiction-to-opioids-heroin-prescription-drug-abuse>.
9. Babor TF, McRee BG, Kassebaum PA, Grimaldi PL, Ahmed K, Bray J. Screening, Brief Intervention, and Referral to Treatment (SBIRT): toward a public health approach to the management of substance abuse. *Subst Abus*. 2007;28(3):7-30.
10. Ghitza UE, Tai B. Challenges and Opportunities for Integrating Preventive Substance-Use-Care Services in Primary Care through the Affordable Care Act. *J Health Care Poor Underserved*. 2014;25(1 0):36-45.

## Acknowledgments

We thank Julia Cecil, MA, MBA, for her managerial and editorial assistance.

## Contact Information

Ty Borders, PhD, Director, Rural and Underserved Health Research Center  
email: [ty.borders@uky.edu](mailto:ty.borders@uky.edu) website: <http://ruhrc.uky.edu>

## Suggested Citation

Borders TF, Wen H. *Illicit Drug and Opioid Use Disorders among Non-Metropolitan Residents Nationally*. Lexington, KY: Rural and Underserved Health Research Center; 2018.