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# Substance Abuse in Indiana: An Urban-Rural Perspective

## Introduction

The use of alcohol and drugs is a significant public health problem in the United States. The Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that in 2015, 13.1 million American adults had an alcohol use disorder, 5.1 million had an illicit substance use disorder, and an additional 2.7 million had both disorders [1]. These estimates do not include the millions of people across the country who use alcohol or drugs at lower, but still problematic levels [1, 2]. The economic impact attributable to substance use is staggering. Estimates from 2007 indicate that the consequences arising from alcohol and illicit drug use have cost the nation $223.5 and $193 billion respectively. Much of the expense stems from lost productivity in the labor force, treatment for substance use disorders and their associated health consequences, and alcohol- and drug-related criminal justice activities [3, 4]. Loss of life is a particularly significant outcome tied to substance use that cannot be measured in dollars. The age-adjusted rate of drug- and alcohol-related deaths has increased by 88%, from 14.0 deaths per 100,000 in 1999 to 26.3 deaths per 100,000 in 2015 [5]. To better

## SUMMARY

- The purpose of this brief is to review trends in alcohol and other drug use as well as treatment availability in Indiana across the urban/rural continuum.
- We used the Purdue University Center for Rural Development's criteria to define counties as urban, rural/mixed, or rural.
- All analyses were based on publicly available data sources, including information from the U.S. Census Bureau, Indiana's Treatment Episode Data System, the National Survey of Substance Abuse Treatment Services, the National Provider Identifier dataset, and the Buprenorphine Provider database.
- The most striking differences of drug use by urban/rural category were found for methamphetamine and cocaine, with methamphetamine use being more prevalent in rural areas and cocaine use more widespread in urban counties.
- Injection drug use (IDU) in Indiana's substance abuse treatment population increased significantly from 2010 to 2016 across all urban/rural categories. In 2016, the IDU rate was lowest among urban dwellers, higher among rural Hoosiers, and highest among those living in rural/mixed areas.
- Indiana, like many other states in the nation, is lacking in substance abuse treatment services and rural areas are particularly underserved. Of the 235 agencies offering care, 129 agencies (54.9%) are located in urban counties, 64 agencies (27.2%) are in rural/mixed counties, and 43 (17.8%) are in rural counties. Furthermore, 11 rural counties have no substance abuse treatment agencies whatsoever.
- Rural residents may encounter additional barriers to receiving substance abuse treatment, including stigma, fear that they may know their treatment providers, a lack of access to specialized services, inferior quality of care, and having to pay more for treatment.
- There are currently 14 opioid treatment programs (OTPs) operating in Indiana; 13 are overseen by the Division of Mental Health and Addiction and one is administered by the Veteran's Administration. Of these, 10 OTPs are in urban areas and four are in rural/mixed areas; no OTPs are located in rural counties.
- Based on the findings, we recommend the following
  - o Expand substance abuse treatment services, especially in rural and rural/mixed areas.
  - o Increase availability of medication-assisted treatment, especially in rural/mixed areas.
  - o Increase distribution and use of naloxone, especially in rural and rural/mixed areas.
  - o Enhance Indiana's capacity to provide internet-based services to Hoosiers struggling with methamphetamine (and other drug) use in more remote areas of the state.
  - o Provide training and mentoring to healthcare professionals on how to identify substance abuse in patients and provide treatment.
  - o Incentivize treatment professionals to work in more rural areas.

address alcohol and other drug use, policymakers need to know ***what*** the most commonly used substances are, ***where*** in the state these substances are being used, and ***who*** is using them. The purpose of this report is to describe variations in drug use and related consequences, as well as the availability of treatment resources in Indiana across the urban-rural continuum. Our goal is to inform policymakers and planners, prevention and treatment professionals, as well as the general public about the status of substance use, abuse, and treatment opportunities available across differing geographic areas of the state.

**Table 1.** Criteria Used for Classifying Indiana Counties

| Criteria | Rural | Rural/Mixed | Urban |
|---|---|---|---|
| Population | Less than 40,000 | 40,000 to 100,000 | Over 100,000 |
| Density (people per sq. mi.) | Less than 100 | 100 to 200 | Over 200 |
| Population of largest city | Less than 10,000 | 10,000 to 30,000 | Over 30,000 |
| Identity | Rural | Rural with larger town(s) | Urban/suburban |
| Number of counties | 42 | 33 | 17 |

Source: Purdue University Center for Rural Development

## Background

Many in the U.S. hold a longstanding belief that the majority of the economic and social consequences tied to substance use are generated within the country's more densely populated, urban areas—areas which are perceived as having higher rates of unemployment, crime, poverty, and familial instability [6]. Since at least the 1980s, rural America has experienced significant economic hardships, job loss, outmigration of young adults, a breakdown of traditional familial and community networks, and greater encroachment from urban areas [7]. The increase of these factors accompanies a concomitant rise in the level of alcohol and marijuana use among high school students living in rural areas; by 1992, these had reached levels similar to that of urban youth [6]. More recent studies examining differences in the overall prevalence of illicit drug use among urban and rural environments have produced inconsistent results. Some concluded that illicit drug use is higher among individuals in urban areas [8, 9], some that it is higher among rural individuals [10, 11], and at least one found that the level of illicit drug use is nearly the same across urban and rural areas [12]. The discrepancies among these and other studies assessing substance use across urban and rural areas are likely due to a number of variables, including how authors define what constitutes an urban or rural area, the use of respondent groups that are often drawn from very select populations (e.g., probationers living in specific rural or urban areas, pregnant women entering substance abuse treatment), or the use of data drawn from individuals within a single state or part of a state. As findings across studies are somewhat discrepant and may be state-specific, this report will focus specifically on patterns of urban and rural drug use as they exist within Indiana; however, we will reference national-level trends when data are available.

## Defining Urban and Rural

One of the main pitfalls of research exploring urban-rural differences is the lack of consensus among researchers, government agencies, and others of what exactly constitutes an urban or rural area. The U.S. government uses over two dozen definitions of the construct, employing specific definitions based upon the particular situation of interest. Despite this variety, the categorization scheme used most often when comparing substance use across urban and rural communities is the U. S. Department of Agriculture's rural-urban continuum codes (RUCC). RUCC are based on the population size within a county, categorizing it on a nine-point scale from ***metro*** (county population of 1 million or more) to ***completely rural*** (county population of less than 2,500). While the RUCC codes are helpful in highlighting fine-grained distinctions among large population areas, their use at the state level is limited due to insufficient residents living in the more extreme rural categories.

For this report, we utilized a three-level categorization of the urban-rural continuum created by the Purdue University Center for Rural Development. Similar to the RUCC, the designation of urban or rural is determined by population size, placing counties into one of three categories: urban, rural/mixed, or rural. This scheme is tailored specifically to Indiana and incorporates the concept of "county identity;" i.e., how a county's residents define their county's urban or rural status [13].

Table 1 describes the criteria used to define the three population categories proposed by the Purdue University Center for Rural Development [13]. For additional details, see Appendix 1.

## Data Sources

For the analyses presented in this report, we used data from a variety of publicly available data sources, including information from the U.S. Census Bureau, Indiana's Treatment Episode Data System, the National Survey of Substance Abuse Treatment Services, the National Provider Identifier dataset, and the Buprenorphine Provider database. For details on these data sources, see Appendix 2.

## Demographic Composition by Urban/Rural Category

The demographic composition varied among the urban/rural categories for some characteristics. Population-dense areas were racially more diverse. Though the median income was higher in urban areas, the percentage of people living in poverty was also greater compared to more rural regions. Residents in rural locations were more likely to own their homes. For details on demographic characteristics, see Table 2.

## Demographic Composition of Indiana's Substance Abuse Treatment Population

Across all three urban/rural categories, males accounted for a larger percentage of admissions than females; whites were more prominent than other racial groups, especially in more rural counties; and young adults ages 25 to 34 represented most of the treatment admissions. For additional details, see Table 3.

## Substance Use in Indiana's Treatment Population

For the following analyses, we utilized information from Indiana's Treatment Episode Data Set (TEDS), computing substance use rates among the adult treatment population. For this, we divided the number of treatment admissions for consumers 18 years of age or older who reported the use of a specific drug (alcohol, marijuana, cocaine, methamphetamine, heroin, prescription opioids, or other prescription drugs) by the adult county population, and multiplied the result by 1,000. Differences between rates were determined by calculating 95% confidence intervals for the ratio between rates. Significant differences

**Table 2.** Demographic Characteristics by Urban/Rural Categories

| | Urban | Rural/Mixed | Rural |
|---|---|---|---|
| | (%) | (%) | (%) |
| Gender | | | |
| Male | 49.0% | 49.4% | 50.0% |
| Female | 51.0% | 50.6% | 50.0% |
| Race/Ethnicity | | | |
| Non-Hispanic White | 73.6% | 88.2% | 95.2% |
| Non-Hispanic Black | 13.5% | 3.6% | 0.9% |
| Non-Hispanic Other Race | 4.9% | 3.0% | 1.6% |
| Hispanic (All Races) | 8.0% | 4.6% | 2.3% |
| Age | | | |
| Less than 18 | 24.3% | 24.0% | 23.6% |
| 18 to 24 | 11.0% | 9.2% | 8.3% |
| 25 to 44 | 26.6% | 24.0% | 23.2% |
| 45 to 64 | 25.4% | 27.4% | 28.5% |
| 65 and Older | 12.7% | 15.3% | 16.3% |
| Education | | | |
| High School or More | 88.2% | 87.4% | 85.7% |
| Housing | | | |
| % of population residing in owner-occupied housing | 67.5% | 75.0% | 78.6% |
| Poverty & Income | | | |
| % of Individuals ≥18 in poverty | 16.7% | 14.3% | 13.2% |
| % of Households in poverty | 11.9% | 10.4% | 9.4% |
| % of Households with children <18 in poverty | 19.4% | 17.7% | 15.7% |
| Avg. Median Income | $51,049.00 | $48,616.00 | $47,230.00 |
| Employment & Industry | | | |
| Avg. Unemployment Rate | 8.6 | 8.6 | 8.2 |
| % in manual labor/blue-color-type employment | 29.4% | 37.5% | 42.9% |

Source: U.S. Census Bureau – Community Fact Finder (CFF)

**Table 3.** Demographic Composition of Indiana's Adult Substance Abuse Treatment Population, 2016

| | Urban | Rural/Mixed | Rural |
|---|---|---|---|
| Gender | (%) | (%) | (%) |
| Male | 10,428 (59.4%) | 5,768 (60.1%) | 2,853 (60.0%) |
| Female | 7,114 (40.6%) | 3,832 (39.9%) | 1,900 (40.0%) |
| Race | | | |
| White, Non-Hispanic | 11,912 (67.9%) | 8,272 (86.2%) | 4,286 (90.2%) |
| Black, Non-Hispanic | 3,193 (18.2%) | 258 (2.7%) | 50 (1.1%) |
| Other, Non-Hispanic | 1,109 (6.3%) | 532 (5.5%) | 233 (4.9%) |
| Hispanic – All Races | 1,328 (7.6%) | 538 (5.6%) | 184 (3.9%) |
| Age | | | |
| 18-24 | 3,179 (18.1%) | 2,028 (21.1%) | 1,071 (22.5%) |
| 25-34 | 6,418 (36.6%) | 3,706 (38.6%) | 1,815 (38.2%) |
| 35-44 | 3,914 (22.3%) | 2,177 (22.7%) | 1,044 (22.0%) |
| 45-54 | 2,641 (15.1%) | 1,177 (12.3%) | 573 (12.1%) |
| 55 and Older | 1,390 (7.9%) | 512 (5.3%) | 250 (5.3%) |
| Admission History | | | |
| 0 or 1 prior admission | 16,526 (94.2%) | 8,829 (92.0%) | 4,592 (96.6%) |
| 2 or more prior admissions | 1,016 (5.8%) | 771 (8.0%) | 161 (3.4%) |

Source: Treatment Episode Data Set (TEDS)

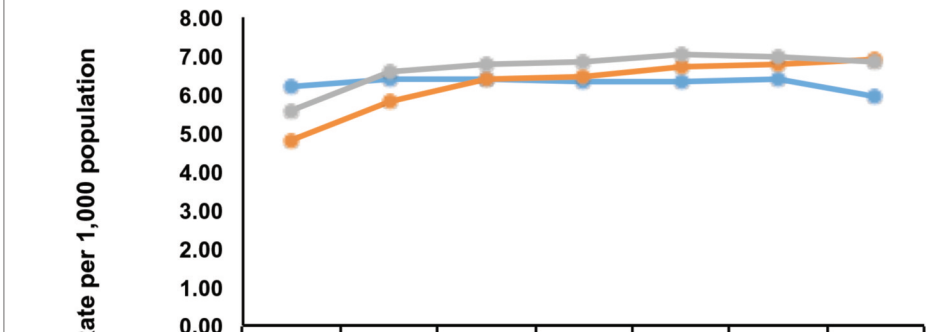
among urban-rural categories were determined using standard difference of proportions tests.

Estimates of overall substance use were based on the annual number of adult TEDS admissions. For the state, the rate of overall substance misuse increased slightly from 2010 to 2011 and has remained relatively stable since that time. Substance misuse has been gradually increasing in rural/mixed counties and increasing but then somewhat decreasing in rural counties. In urban areas, substance misuse has slightly decreased and is below the rates for the more rural regions (see Figure 1).

## Alcohol Use in Indiana's Treatment Population

Estimates based on TEDS data show that the rate of problematic alcohol use has decreased in Indiana since 2010 to a low of 3.19 per 1,000 population. Urban counties have experienced a steady decline in their rate of problematic use, while rural/mixed and rural counties have seen an increase in use followed by somewhat of a decrease. Compared to 2010, the rate of problematic alcohol consumption was significantly lower in urban and rural counties in 2016; rates in rural/mixed areas were statistically similar in 2010 and 2016 (see Figure 2).

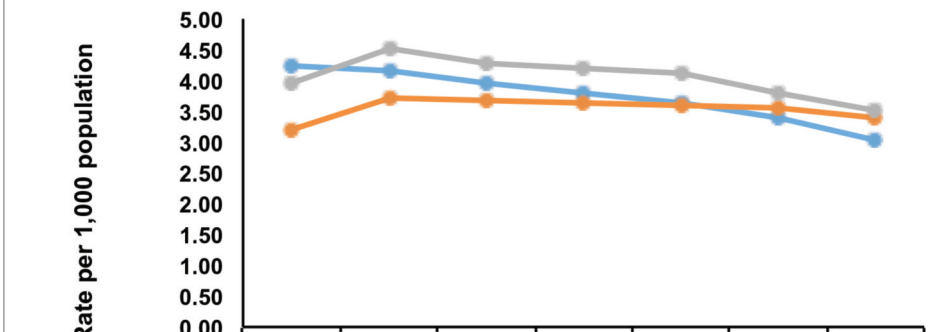
**Figure 1.** Rate of Substance Misuse in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 6.17 | 6.38 | 6.42 | 6.35 | 6.33 | 6.38 | 5.93 |
| RURAL/MIXED | 4.81 | 5.79 | 6.39 | 6.49 | 6.70 | 6.81 | 6.92 |
| RURAL | 5.58 | 6.60 | 6.76 | 6.83 | 7.06 | 6.98 | 6.85 |

Source: Treatment Episode Data Set (TEDS)

**Figure 2.** Rate of Alcohol Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 4.25 | 4.15 | 3.97 | 3.81 | 3.63 | 3.41 | 3.03 |
| RURAL/MIXED | 3.20 | 3.71 | 3.69 | 3.62 | 3.58 | 3.56 | 3.39 |
| RURAL | 3.96 | 4.53 | 4.28 | 4.21 | 4.11 | 3.81 | 3.51 |

Source: Treatment Episode Data Set (TEDS)

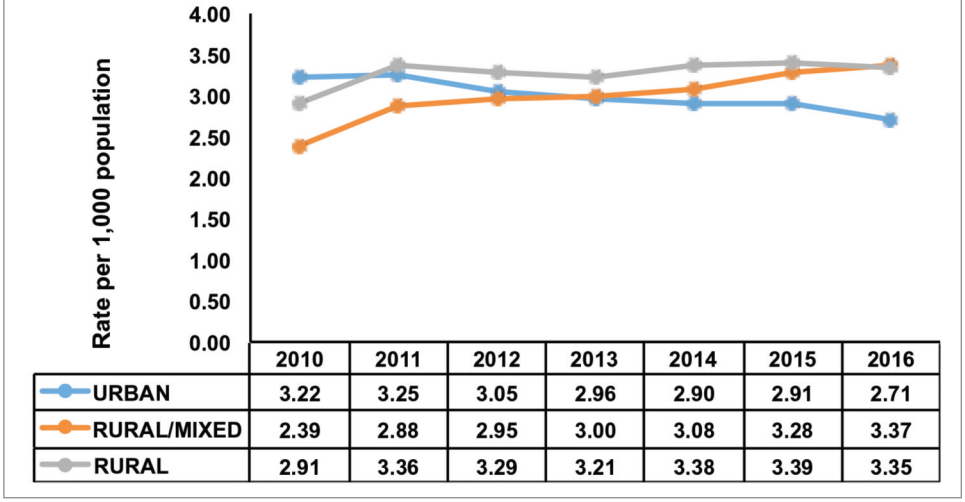
## Marijuana Use in Indiana's Treatment Population

At the state level, marijuana use has remained relatively stable. Across the population density categories, marijuana use started out at higher rates in urban counties compared to both rural/mixed and rural counties. Since 2010, use has decreased in urban areas, increased in rural/mixed areas, and increased slightly then stabilized in rural areas (see Figure 3).

## Cocaine Use in Indiana's Treatment Population

Cocaine use has decreased throughout Indiana since 2010. Across all years reviewed, the rate of cocaine use has been greatest in urban counties, followed by rural/mixed, and then rural areas. Urban counties experienced a significant drop in cocaine use from 2010 to 2016 (see Figure 4).

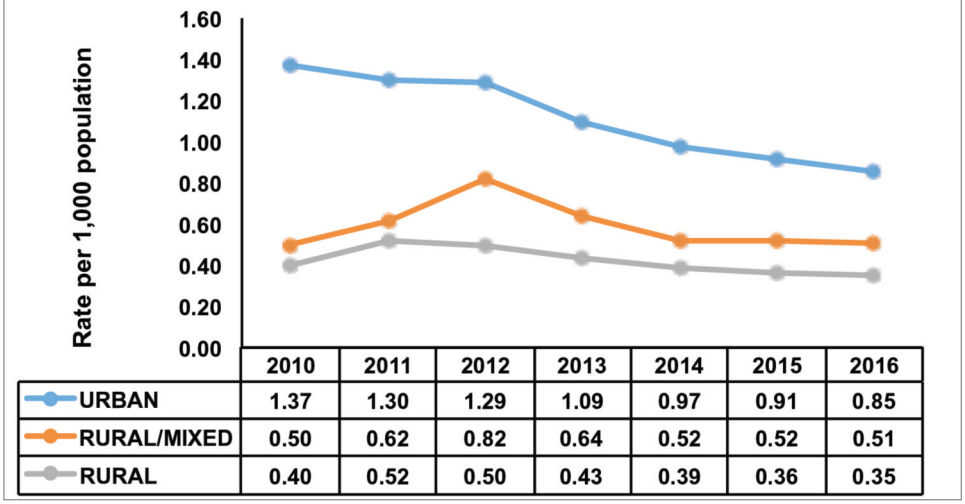
**Figure 3.** Rate of Marijuana Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 3.22 | 3.25 | 3.05 | 2.96 | 2.90 | 2.91 | 2.71 |
| RURAL/MIXED | 2.39 | 2.88 | 2.95 | 3.00 | 3.08 | 3.28 | 3.37 |
| RURAL | 2.91 | 3.36 | 3.29 | 3.21 | 3.38 | 3.39 | 3.35 |

Source: Treatment Episode Data Set (TEDS)

**Figure 4.** Rate of Cocaine Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 1.37 | 1.30 | 1.29 | 1.09 | 0.97 | 0.91 | 0.85 |
| RURAL/MIXED | 0.50 | 0.62 | 0.82 | 0.64 | 0.52 | 0.52 | 0.51 |
| RURAL | 0.40 | 0.52 | 0.50 | 0.43 | 0.39 | 0.36 | 0.35 |

Source: Treatment Episode Data Set (TEDS)

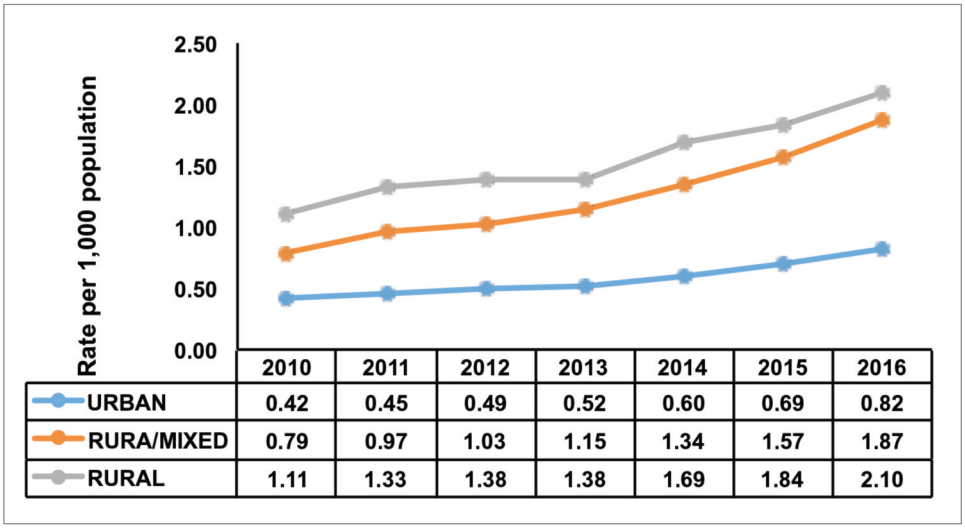
## Methamphetamine Use in Indiana's Treatment Population

Since 2010, the rate of methamphetamine use increased significantly in all three density categories. Rates of methamphetamine use in Indiana rise with increasing levels of rurality and Indiana's rural counties have consistently had the highest rate of use compared to both rural/mixed and urban counties (see Figure 5).

## Prescription Opioid Analgesic[1] Use in Indiana's Treatment Population

Indiana has experienced a significant increase in misuse of prescription opioid analgesics since 2010, although a slight drop in use was noted between 2015 and 2016. The state's urban, rural/mixed, and rural counties have all seen a significant increase in nonmedical opioid analgesic use since 2010. Over time, the rate of opioid analgesic misuse has become significantly less prevalent in urban areas compared to Indiana's more rural counties. In 2016, the misuse of opioid analgesics by Hoosiers living in rural/mixed areas was significantly higher than that found in either urban or rural areas (see Figure 6).

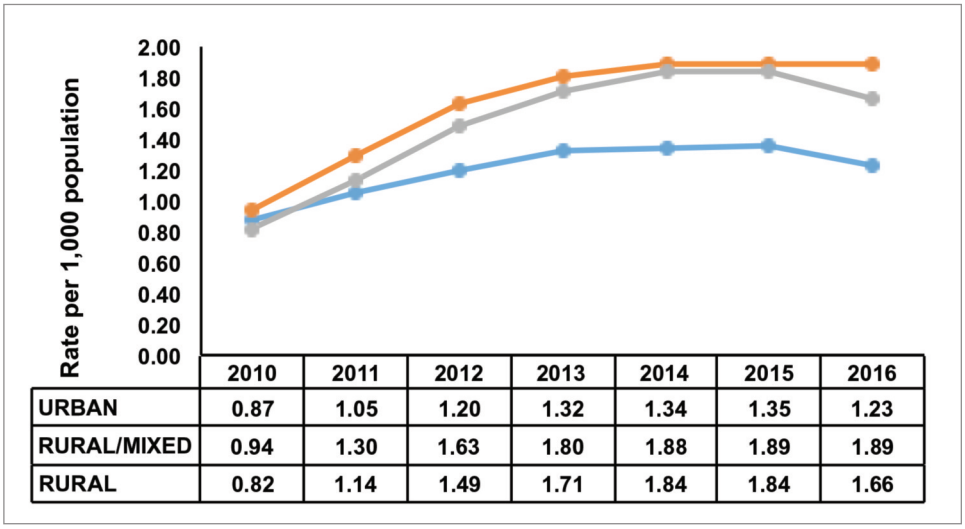
**Figure 5.** Rate of Methamphetamine Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 0.42 | 0.45 | 0.49 | 0.52 | 0.60 | 0.69 | 0.82 |
| RURA/MIXED | 0.79 | 0.97 | 1.03 | 1.15 | 1.34 | 1.57 | 1.87 |
| RURAL | 1.11 | 1.33 | 1.38 | 1.38 | 1.69 | 1.84 | 2.10 |

Source: Treatment Episode Data Set (TEDS)

**Figure 6.** Rate of Opioid Analgesic Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 0.87 | 1.05 | 1.20 | 1.32 | 1.34 | 1.35 | 1.23 |
| RURAL/MIXED | 0.94 | 1.30 | 1.63 | 1.80 | 1.88 | 1.89 | 1.89 |
| RURAL | 0.82 | 1.14 | 1.49 | 1.71 | 1.84 | 1.84 | 1.66 |

Source: Treatment Episode Data Set (TEDS)

[1]Opioid analgesics were defined as substances falling into the TEDS categories of "nonprescription methadone" and "other opiates and synthetics" (excluding heroin).

## Heroin Use in Indiana's Treatment Population

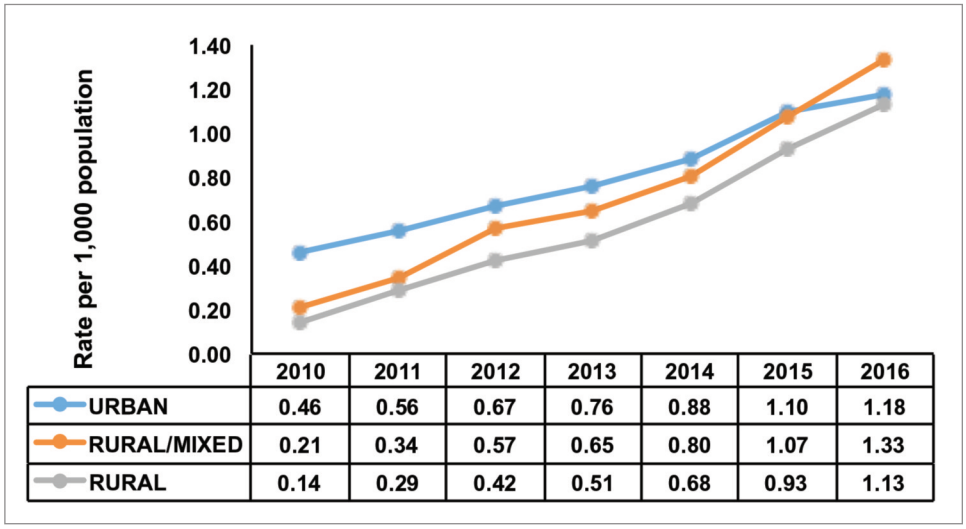
Heroin use has grown dramatically in recent years due in large part to the increased misuse of opioid analgesics. Unlike in previous decades when heroin use was typically confined to urban areas, today, use is more prevalent in many suburban and rural areas across the country [14].

Since 2010, the use of heroin has increased significantly across Indiana and within all three population density categories. Until 2014, the rate of heroin use was highest in urban counties with the lowest rate of use found in rural counties. By 2016, counties with a rural/mixed population density were estimated to have the highest rate of heroin use while urban and rural counties had rates that were similar to one another (see Figure 7).

## Prescription Drug[2] Use in Indiana's Treatment Population

The rate of prescription drug misuse has risen steadily since 2010. Among urban and rural counties, use increased from 2010 through 2015; in 2016, use declined significantly in urban counties and insignificantly in rural/mixed and rural counties. Rates for 2010 show that the rate of prescription drug misuse was approximately the same in all three density categories. By 2016, the highest rate of prescription drug misuse was noted in rural/mixed counties and the lowest in urban counties (see Figure 8).

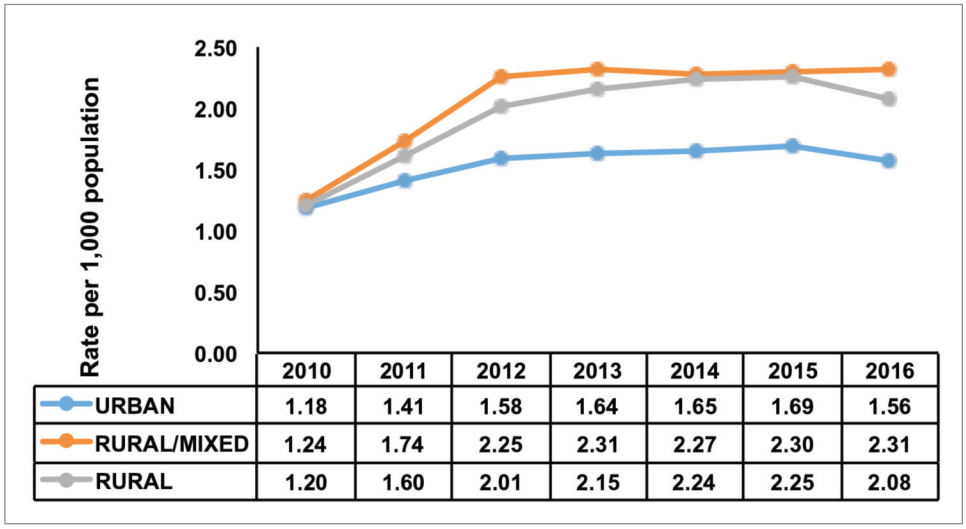
**Figure 7.** Rate of Heroin Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 0.46 | 0.56 | 0.67 | 0.76 | 0.88 | 1.10 | 1.18 |
| RURAL/MIXED | 0.21 | 0.34 | 0.57 | 0.65 | 0.80 | 1.07 | 1.33 |
| RURAL | 0.14 | 0.29 | 0.42 | 0.51 | 0.68 | 0.93 | 1.13 |

Source: Treatment Episode Data Set (TEDS)

**Figure 8.** Rate of Prescription Drug Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 1.18 | 1.41 | 1.58 | 1.64 | 1.65 | 1.69 | 1.56 |
| RURAL/MIXED | 1.24 | 1.74 | 2.25 | 2.31 | 2.27 | 2.30 | 2.31 |
| RURAL | 1.20 | 1.60 | 2.01 | 2.15 | 2.24 | 2.25 | 2.08 |

Source: Treatment Episode Data Set (TEDS)

[2]Prescription drugs were defined as nonprescription methadone, other opiates and synthetics, sedatives, barbiturates, tranquilizers, and other amphetamines (excluding methamphetamine)

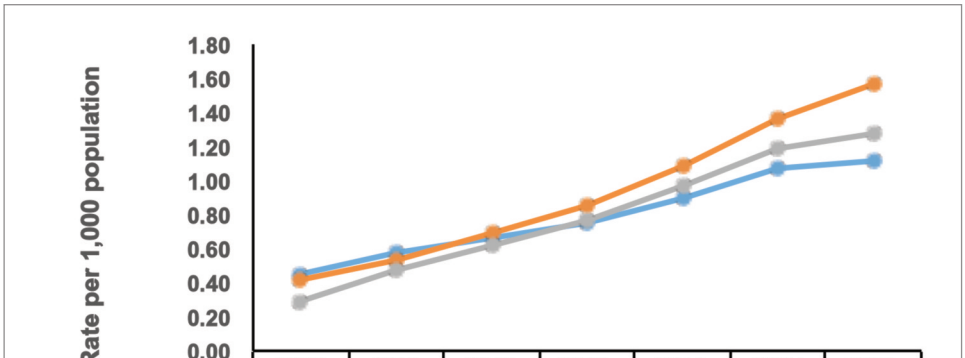
## Injection Drug Use in Indiana's Treatment Population

We also examined the distribution of injection drug use (IDU) across the three urban-rural groups as IDU is a common way to administer heroin and methamphetamine, and in some instances, prescription opioids. Injection drug users frequently share needles and other injection paraphernalia, which puts them at a high risk for contracting and transmitting infectious diseases such as HIV or hepatitis C. As prescription opioid, heroin, and methamphetamine use has increased in the state, so too has the use of needles to administer these drugs. All population density categories had a significant increase in IDU since 2010. As of 2016, the IDU rate was lowest among urban dwellers, higher among rural Hoosiers, and highest among Hoosiers living in rural/mixed areas (see Figure 9).

## Substance Abuse Treatment Services

In order for individuals who engage in the misuse of substances and those with a substance use disorder to improve, they often need to receive some form of professional treatment. Treatment is most often provided by state- or privately-funded inpatient and outpatient substance-abuse-specific agencies and also by psychiatrists, psychologists, social workers, mental health therapists, and addiction counselors who may work in private practice settings. Medication-assisted recovery services, which are designed to help those dependent on opioids, are provided by federally-certified opioid treatment programs or federally-certified physicians. Despite the need many people have for some form of substance abuse treatment, most do not receive it [2].

**Figure 9.** Rate of Injection Drug Use in Indiana's Treatment Population, by Urban-Rural Categories




| | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|
| URBAN | 0.45 | 0.57 | 0.66 | 0.75 | 0.90 | 1.07 | 1.12 |
| RURAL/MIXED | 0.41 | 0.54 | 0.70 | 0.86 | 1.09 | 1.36 | 1.57 |
| RURAL | 0.29 | 0.48 | 0.62 | 0.76 | 0.97 | 1.19 | 1.27 |

Source: Treatment Episode Data Set (TEDS)

**Table 4.** Substance Use Treatment Services within Urban, Rural/Mixed, and Rural Locations

| Service | Urban Locations (%) | Rural/Mixed Locations (%) | Rural Locations (%) | Total |
|---|---|---|---|---|
| Detoxification (all types) | 32 (56.1%) | 22 (38.6%) | 3 (5.3%) | 57 |
| Opioid Detoxification | 27 (62.8) | 15 (34.9%) | 1 (2.3%) | 43 |
| Alcohol Detoxification | 23 (59.0%) | 15 (38.5%) | 1 (2.6%) | 39 |
| Benzodiazepine Detox. | 22 (57.9%) | 15 (39.5%) | 1 (2.6%) | 38 |
| Cocaine Detoxification | 18 (62.1%) | 10 (34.5%) | 1 (3.4%) | 29 |
| Methamphetamine Detox. | 18 (60.0%) | 11 (36.7%) | 1 (3.3%) | 30 |
| Methadone Treatment | 7 (63.6%) | 4 (36.4%) | 0 (0.0%) | 11 |
| Buprenorphine | 29 (60.4%) | 17 (35.4%) | 2 (4.2%) | 48 |
| Vivitrol | 32 (49.2%) | 27 (41.5%) | 6 (9.2%) | 65 |
| Outpatient Treatment (all forms) | 108 (52.9%) | 55 (27.0%) | 41 (20.1%) | 204 |
| Computerized Treatment | 15 (44.1%) | 14 (41.2%) | 5 (14.7%) | 34 |
| Hospital Inpatient Treatment | 10 (62.5%) | 6 (37.5%) | 0 (0.0%) | 16 |
| Long-Term Residential | 19 (82.6%) | 4 (17.4%) | 0 (0.0%) | 23 |
| Short-Term Residential | 23 (76.7%) | 6 (20.0%) | 1 (3.3%) | 30 |
| Programming for Specific Populations | 98 (59.0%) | 45 (27.1%) | 23 (13.9%) | 166 |

Source: National Survey of Substance Abuse Treatment Services (N-SSATS), 2015

Residents of rural areas who desire treatment are at a particular disadvantage compared to rural/mixed or urban locations as most services are concentrated in more densely populated areas, making them harder to access [15]. Rural residents may encounter other barriers to receiving substance abuse treatment, including stigma, fear that they may know their treatment providers, a lack of access to specialized services, inferior quality of care, and having to pay more for treatment [15-20].

**Table 5.** Substance Use Treatment Workforce by Provider Type Located in Urban, Rural/Mixed, and Rural Areas

| Provider Type[3] | Total Number | Urban | Rural/Mixed | Rural |
|---|---|---|---|---|
| Masters-Level Provider | 4,814 | 3,574 (74.2%) | 988 (20.5%) | 252 (5.2%) |
| Doctoral-Level Provider | 854 | 662 (77.5%) | 157 (18.4%) | 35 (4.1%) |
| Psychiatrist | 585 | 436 (74.5%) | 142 (24.3%) | 7 (1.2%) |

Source: National Provider Identifier (NPI) dataset

## Location of Substance Abuse Treatment Services

We used data from the Indiana National Survey of Substance Abuse Treatment Services (N-SSATS) to determine the address of agencies that offer substance abuse treatment services to people in their local area. Based on these data, Indiana, like many other states in the nation, is lacking in substance abuse treatment services; however, rural areas of the state are particularly underserved. Of the 235 agencies offering care, less than one-fifth (17.8%) are located in rural areas; 11 rural counties have no substance abuse treatment agencies whatsoever. Access to services improves as population density increases, with 64 agencies (27.2%) operating in rural/mixed and 129 agencies (54.9%) in urban counties. Specialized services, such as detoxification, inpatient treatment, residential programming, and programming designed for specific populations (e.g., LGBT, veterans), are more frequently found in urban areas. The services most easily accessible to rural Hoosiers are generally limited to outpatient counseling. Table 4 provides a breakdown of the number and percent of agencies offering different types of services in the three urban-rural categories.

## Location of Buprenorphine Prescribers and Opioid Treatment Programs (OTP)

Buprenorphine is a relatively new treatment for people with opioid use disorders. Buprenorphine works by suppressing the symptoms associated with opioid withdrawal and consequently reducing cravings and use of opioids [21]. Only specially certified physicians can prescribe Buprenorphine. Physicians can either have a caseload limit of 30, 100, or 275 patients. Using the Buprenorphine physician locator available from SAMHSA, we determined that as of April 2017, 337 physicians in the state are authorized to prescribe Buprenorphine, although the number of physicians who can see 30, 100, or 275 patients was not available. Overall, half of Indiana's counties currently have no Buprenorphine prescriber and the majority of those counties (80.4%) are considered rural. When we counted the number of physicians within each urban-rural category, we determined that 76.3% of physicians were in urban, 22.0% in rural/mixed, and only 1.8% in rural areas. The distribution of physicians who are able to prescribe Buprenorphine in Indiana is similar to that seen throughout the country [22].

Methadone is another drug commonly used to treat opioid disorders. Methadone works by lessening the painful symptoms of opiate withdrawal, blocks the euphoric effects of opiate drugs, and reduces the chances an individual will return to opioid use. Methadone is dispensed at specifically designated opioid treatment programs (OTP) [23]. Significant research shows that methadone is an effective treatment for reducing the use of opioids, IDU, and the spread of HIV, HCV, and other blood-borne illnesses [24]. There are currently 14 OTPs operating in Indiana; 13 of which are overseen by the Division of Mental Health and Addiction and one OTP is administered by the Veteran's Administration [25]. Of these 14 OTPs, 10 are located in urban areas and four are in rural/mixed areas; no OTPs are located in rural counties.

## Location of the Substance Use Treatment Workforce

The availability of substance use services is dependent on having an easily accessible pool of trained substance use treatment professionals. Using data available from the National Provider Identifier (NPI) dataset, we determined that there are approximately 5,668 professionals with an active NPI number who are licensed as social workers, mental health therapists, addictions counselors, or psychologists, all of whom could potentially provide some form of substance abuse treatment services to individuals within their communities. As with other services, treatment professionals are more often found in areas that have greater population densities (see Table 5).

[3]**Masters-level providers are licensed social workers, mental health therapists, marital and family therapists, and addiction counselors. Doctoral-level providers are licensed psychologists holding either a PhD or PsyD degree. Psychiatrists are physicians (MDs or DOs) specializing in the practice of psychiatry.**

Psychiatrists are another important piece of the substance use treatment workforce. The NPI database reports that 585 psychiatrists are located in Indiana. Three-quarters of the state's psychiatrists have practices in urban areas, with the remainder primarily serving rural/mixed areas (24.3%) and only seven psychiatrists (1.2%) serving rural areas of Indiana. Of Indiana's 92 counties, 47 do not have a psychiatrist and of those counties, 36 are rural (see Table 5).

## Thoughts for Policymakers

The state has seen a shift in substance use rates over time, with rural/mixed and rural areas experiencing an increase and urban areas a decrease in use. Presently, the overall rate of substance use in urban areas is generally lower than that found in less population-dense counties. Furthermore, there are some clear differences in the rate that certain substances are being used, particularly evident for methamphetamine use (primarily rural and rural/mixed counties) and cocaine use (primarily urban counties). Based on these findings, we would make the following recommendations to address substance use across the state.

### Target rural/mixed and rural areas for expansion of substance abuse treatment services that can address all levels of substance abuse issues.

The N-SSATS data clearly show that residents of less densely populated areas have less access to all forms of substance abuse treatment [26]. Although high rates of use in more rural counties may translate to a smaller number of affected individuals, this should not dissuade the state from at minimum increasing the availability of specialty substance abuse treatment services in these areas. These services include, but are not limited to: detoxification services, especially those for opioids, alcohol, and methamphetamine; inpatient services; and short- and long-term residential services. It is also important to ensure that services are evidence-based and of equal quality to those found in urban counties.

### Increase the availability of Medication-Assisted Treatment services, particularly in rural/mixed areas, to reduce continued misuse of prescription opioids and heroin.

Despite the higher rate of opioid use in Indiana's rural/mixed and rural areas, few if any OTPs operate in those locations [27]. Should Indiana decide to increase OTP capacity, consideration should be given to locating new facilities in areas accessible to Hoosiers in moderately or completely rural areas where the treatment need is high and availability is practically nonexistent. The state could also seek approval from SAMHSA to provide methadone maintenance through mobile clinics that travel to and provide daily services in areas of high need, an approach that has been shown to be effective in serving hard-to-reach individuals who are dependent on opioids [28].

As an alternative to increasing capacity for methadone treatment, Indiana could focus on improving access to Buprenorphine, since it can be prescribed in a physician's office. The first step to enhance Buprenorphine availability would be to increase the number of waivered physicians in rural/mixed and rural areas. This task could be challenging as non-waivered physicians in other states report not wanting to get waivers for fear they will be flooded with requests for Buprenorphine or that patients will divert the drug [29]. The second step would be to encourage physicians with waivers to actually prescribe Buprenorphine and to prescribe it to the full number of patients for whom they are authorized. Waivered physicians in other states often avoid prescribing, or they keep their patient loads below their assigned limit due to insufficient reimbursement, lack of time for taking on additional patients, and concerns surrounding the use of Buprenorphine [29].

For Indiana to accomplish this, the state may need to cover the costs associated with obtaining the waiver and establish training and mentoring programs to provide physicians with a better understanding of opioid use disorders, how to effectively use Buprenorphine with patients that have them, and how to manage larger caseloads—activities which other states have successfully implemented to increase Buprenorphine prescribing rates [30-32]. As of 2016, nurse practitioners and physicians assistants can also apply for Buprenorphine waivers [33]. Indiana may want to target these lower-level providers with similar programming and support in order to maximize the number of waivered professionals not only in moderately and fully rural areas but across the whole of Indiana.

### Increase distribution and use of Naloxone in rural/mixed and rural areas in order to combat high ED use and overdose deaths among those who misuse prescription opioids or heroin.

As seen in other states [34-36], Indiana's opioid overdoses and overdose-related deaths occur with greater frequency in less densely populated areas of the state. Similarly, rates of emergency department visits related to opioid use are higher in counties that are of a rural/mixed composition. In states with similar patterns of overdoses, rural residents dependent on opioids were found to be less aware of what behaviors could put them at risk for overdose [34], and such a situation may exist locally.

Lacking easy access to Naloxone, a medication that can reverse the symptoms of an opioid overdose, may also help explain the higher rates of overdoses and emergency department use in rural/mixed areas. Although first responders such as police officers, firefighters, and emergency medical technicians typically carry Naloxone, in more rural communities critical time may be lost between alerting helping professionals of an overdose and these professionals arriving at the scene. To avoid such delays, the Indiana legislature passed legislation that allows all Hoosiers to legally obtain Naloxone without a prescription and administer it to someone who is having an overdose. However, in more rural areas, sources of Naloxone and training on how and when to properly use it are scarcer than in urban parts of the state.

Indiana could consider allowing Naloxone to be dispensed through a wider range of settings such as social service agencies, local schools, and faith-based organizations. These types of organizations often have contact with a large percentage of their local population, making them ideal locations for both distribution of and education on Naloxone, as well as the risk factors associated with overdose.

## Enhance Indiana's capacity to provide internet-based services to Hoosiers struggling with methamphetamine use in more remote areas of the state.

As noted previously, the rate of methamphetamine use and methamphetamine use disorders are higher in more rural areas and particularly so in Indiana's most rural counties. Additionally, problematic alcohol and marijuana use are higher in areas of lower population density. Residents of these counties who desire help for their substance use issues have little if any access to agencies or professionals that can provide some form of treatment. To reach citizens living in more remote counties who either cannot access treatment or who might feel stigmatized by doing so, the state could capitalize on internet technology. Community mental health centers located near counties with few services could designate therapists to conduct some or all treatment sessions via internet applications that allow for face-to-face communication, many of which can be used on a desktop computer, a laptop, a tablet, or a smart phone. Additionally, community mental health centers can make use of internet-accessible, computerized treatment protocols to supplement face-to-face sessions. Internet and computer-based forms of intervention have been used successfully with individuals facing substance use or other mental health concerns, and outcomes are equal to or sometimes better than traditional in-person approaches [37-42].

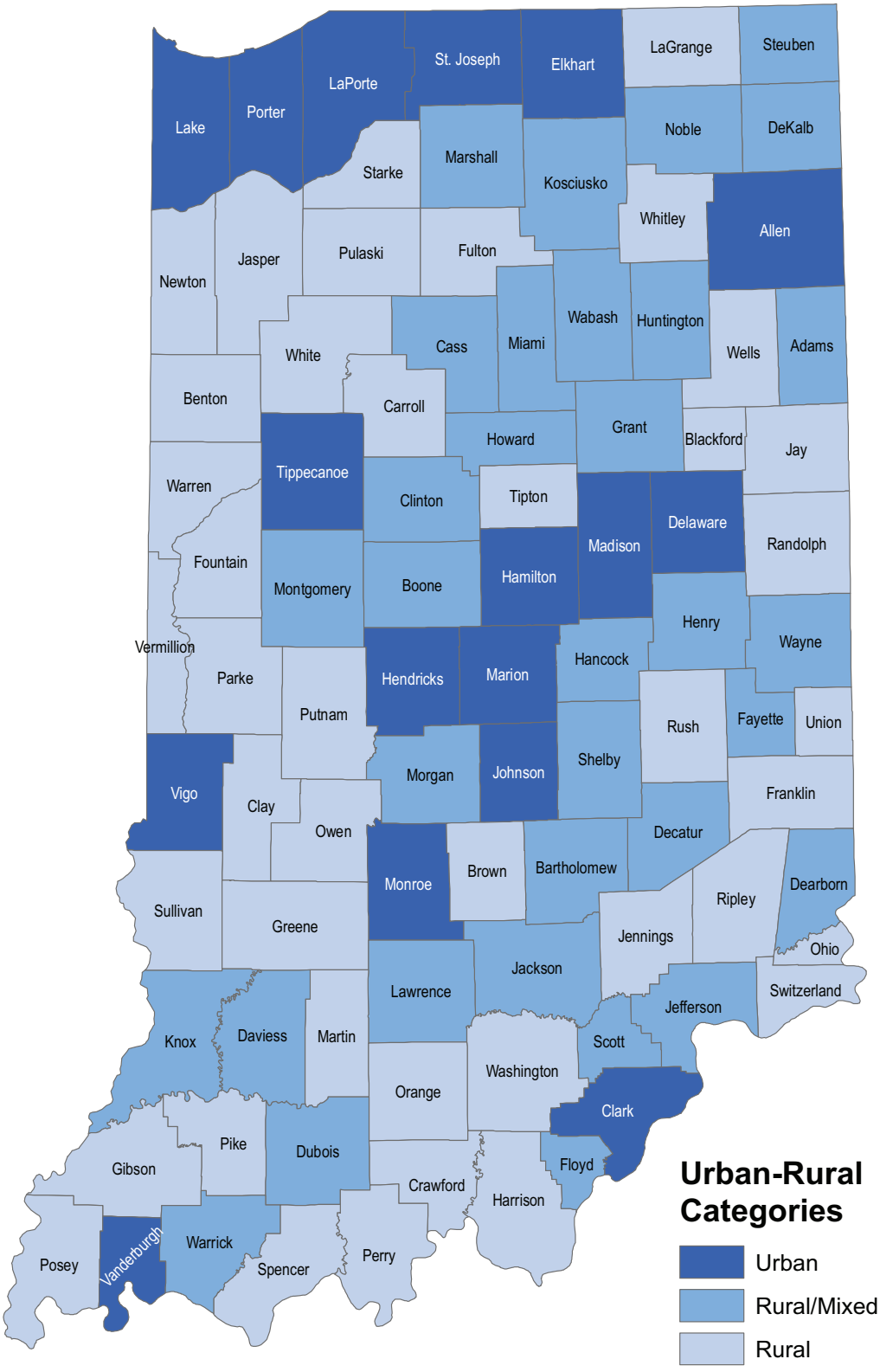
## Provide Training and Mentoring to Primary Care Physicians and other Healthcare Professionals on how to Identify Substance Abuse in Patients and Provide Treatment.

In many rural areas of Indiana, primary care providers (PCP) may be the only easily accessible source of treatment for someone experiencing problematic substance use. It may benefit the state to invest in training and mentoring programs that can help to improve primary care professionals' knowledge about and comfort level with caring for these patients. The Extension for Community Healthcare Outcomes (ECHO) is one successful approach for both enhancing primary care providers' knowledge of and relieving their anxiety about caring for patients with complex health conditions, such as substance abuse [30]. ECHO is an educational approach where specialists at a centrally located agency use video technology to connect to PCPs throughout a community. ECHO emphasizes case-based learning that allows for discussion of treatment approaches and serves as a way for specialists to share their expertise while also mentoring PCPs in their efforts to offer high-quality, specialized care to their patients. ECHO has been used to enhance PCPs' ability to treat various health conditions, including some forms of substance use disorders, and at minimum may allow for more individuals with substance use disorders to be identified and directed to whatever treatment services are locally available [30, 32].

## Incentivize treatment professionals to work in more rural areas of Indiana.

Finally, Indiana might consider incentivizing substance abuse treatment professionals to establish practices outside of the state's urban centers. On a national level the National Health Service Corps offers loan repayment to primary care providers, including mental and behavioral health workers, who choose to practice in healthcare shortage areas for a given period of time. Unfortunately, repayment funds are limited and applications from physicians are often given preference over mental and behavioral health care providers [43]. The Indiana Division of Mental Health and Addictions also offers a loan repayment program for licensed addictions professionals willing to work in designated, underserved parts of the state including more rural communities [44]. To increase the number of such workers in rural/mixed and rural areas, Indiana may need to more aggressively market the loan repayment program, alter the requirements, offer repayment to individuals who paid for their education out-of-pocket, or increase the funds for the program to ensure that lower-level providers are as likely as physician-level providers to receive reimbursement.

# Appendix 1. Assignment of Counties to Urban-Rural Categories



# Appendix 2 – Data Sources

### U.S. Census Bureau – Community Fact Finder (CFF)

Data on demographic, economic, and employment variables were gathered from the CFF and aggregated by population density category (urban, rural/mixed, and rural). The census generally pools estimates for the CFF across a five-year period to ensure that all counties are represented. We used data which pooled estimates from 2011-2015 whenever possible.

### Treatment Episode Data Set – Admissions (TEDS)

Currently, little data are available to estimate prevalence rates of substance use at the county level. For this reason, we relied primarily on TEDS data, which is produced annually by Indiana's Division of Mental Health and Addiction and then submitted to SAMHSA. TEDS collects data on admissions to substance abuse treatment for Hoosiers who are at or below the 200% federal poverty level and who receive these services through publicly funded treatment sources [45]. For the analyses, we examined seven years of data, from 2010 to 2016, in order to present trends in substance use and associated disorders over time as well as to highlight urban/rural population differences for 2016.

The use of the TEDS data presents some limitations. Since TEDS only covers a specific population, it is difficult to determine how representative these findings are of the general population. It is possible that the estimates presented are underestimates of the actual prevalence of both problematic use and substance use disorders due to the fact that only individuals experiencing significant consequences from substance use chose or were court-ordered to enter treatment. Given that individuals represented in TEDS likely have a pattern of use that varies in some way from that of Indiana's general population, the findings presented below should be interpreted with caution.

### National Survey of Substance Abuse Treatment Services (N-SSATS)

To determine the level of treatment services available in the state and where these services are located, we relied on the N-SSATS. SAMHSA conducts the N-SSATS on an annual basis in order to collect information on all organizations that provide substance abuse treatment services through the use of federal dollars. The survey includes questions covering the programs' location, the nature of the services offered, and a rough estimate of the number of clients receiving services. Correctional facilities and professionals in private practice are not included in the N-SSATS [26].

### Buprenorphine Provider Database

To determine the number and location of physicians who are authorized to prescribe buprenorphine as part of a medication-assisted treatment program, we used SAMHSA's buprenorphine physician locator database. This resource provides a relatively comprehensive list of approved prescribers within each state. The database does not indicate whether a physician is authorized to prescribe to 30, 100, or 275 patients. Furthermore, physicians can choose not to be listed in the database.

### National Provider Identifier (NPI) Dataset

To determine where individual-level substance abuse service providers (i.e., psychiatrists, psychologists, counselors, and social workers) were located in the state, we used the NPI data set, which is compiled by the Center for Medicare and Medicaid Services (CMS). The NPI contains provider information for healthcare professionals who accept Medicare and Medicaid. CMS updates this database on a periodic basis; however, it is up to individual providers to alert CMS regarding address changes. The NPI likely underestimates to some extent the number of service providers, as not all service providers accept Medicare or Medicaid for reimbursement.

# Appendix 3 –Substance Use in Indiana's Treatment Population, Percentages and Rates by Urban/Rural Category (TEDS, 2016)

### Any Use of Substance

| | Urban | Rural/Mixed | Rural | Indiana |
|---|---|---|---|---|
| Alcohol | | | | |
| Percent of Admissions | 51.1%[a] | 49.0%[b] | 51.2%[a] | 50.0% |
| Rate per 1,000 population >= 18 | 3.03*† | 3.39 | 3.51 | 3.19 |
| Marijuana | | | | |
| Percent of Admissions | 45.6%[a] | 48.7%[b] | 48.9%[b] | 47.0% |
| Rate per 1,000 population >= 18 | 2.71*† | 3.37 | 3.35 | 2.98 |
| Cocaine | | | | |
| Percent of Admissions | 14.4%[a] | 7.3%[b] | 5.2%[c] | 11.0% |
| Rate per 1,000 population >= 18 | 0.85*† | 0.51‡ | 0.35 | 0.69 |
| Heroin | | | | |
| Percent of Admissions | 19.9%[a] | 19.3%[a] | 16.5%[b] | 19.0% |
| Rate per 1,000 population >= 18 | 1.18* | 1.33‡ | 1.13 | 1.21 |
| Methamphetamine | | | | |
| Percent of Admissions | 13.8%[a] | 27.0%[b] | 30.7%[c] | 20.0% |
| Rate per 1,000 population >= 18 | 0.82*† | 1.87‡ | 2.10 | 1.29 |
| Prescription Opioids | | | | |
| Percent of Admissions | 20.8%[a] | 27.3%[b] | 24.3%[c] | 23.0% |
| Rate per 1,000 population >= 18 | 1.23*† | 1.89‡ | 1.66 | 1.47 |
| All Prescription Medications (including Opioids) | | | | |
| Percent of Admissions | 26.4%[a] | 33.4%[b] | 30.4%[c] | 29.0% |
| Rate per 1,000 population >= 18 | 1.56*† | 2.31‡ | 2.08 | 1.84 |
| Injection Drug Use | | | | |
| Percent of Admissions | 18.9%[a] | 22.6%[b] | 18.5%[a] | 20.0% |
| Rate per 1000 population>=18 | 1.12*† | 1.57‡ | 1.27 | 1.26 |

### Primary Use of Substance

| | Urban | Rural/Mixed | Rural | Indiana |
|---|---|---|---|---|
| Alcohol | | | | |
| Percent of Admissions | 34.6%[a] | 31.2%[b] | 31.6%[b] | 33.0% |
| Rate per 1,000 population >= 18 | 2.05* | 2.16 | 2.16 | 2.09 |
| Marijuana | | | | |
| Percent of Admissions | 20.5%[a] | 17.2%[b] | 18.0%[b] | 19.0% |
| Rate per 1,000 population >= 18 | 1.21 | 1.19 | 1.23 | 1.21 |
| Cocaine | | | | |
| Percent of Admissions | 5.3%[a] | 1.5%[b] | 0.8%[c] | 4.0% |
| Rate per 1,000 population >= 18 | 0.32*† | 0.10‡ | 0.06 | 0.22 |
| Heroin | | | | |
| Percent of Admissions | 16.2%[a] | 13.7%[b] | 12.1%[c] | 15.0% |
| Rate per 1,000 population >= 18 | 0.96† | 0.95‡ | 0.83 | 0.94 |
| Methamphetamine | | | | |
| Percent of Admissions | 7.3%[a] | 15.3%[b] | 16.1%[b] | 11.0% |
| Rate per 1,000 population >= 18 | 0.43*† | 1.06‡ | 1.10 | 0.70 |
| Prescription Opioids | | | | |
| Percent of Admissions | 11.9%[a] | 14.0%[b] | 10.6%[c] | 12.0% |
| Rate per 1,000 population >= 18 | 0.71* | 0.97‡ | 0.73 | 0.78 |
| All Prescription Medications (including Opioids) | | | | |
| Percent of Admissions | 13.7%[a] | 16.3%[b] | 12.8%[a] | 14.0% |
| Rate per 1,000 population >= 18 | 0.81* | 1.13‡ | 0.87 | 0.91 |

**a, b, c – columns with different letters represent significant (P<.05) differences between those columns (e.g., a column with a and a column with b are significantly different from one another)**
***—urban significantly different (P<.05) from rural/mixed**
**†—urban significantly different (P<.05) from rural**
**‡—rural/mixed significantly different (P<.05) from rural**

# Appendix 4 – Substance Use Trends

**Rates (per 1.000 Population) and General Trends in Indiana's Substance Abuse Treatment Admissions Reporting Any Use of Specific Drugs across Urban-Rural Categories over Time (TEDS, 2010 – 2016)**

| | Trend | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Overall Substance Use | | | | | | | | |
| Indiana | ↑←→ | 5.71 | 6.25 | 6.46 | 6.46 | 6.53 | 6.58 | 6.33 |
| Urban | ←→↓ | 6.17 | 6.38 | 6.42 | 6.35 | 6.33 | 6.38 | 5.93 |
| Rural/Mixed | ↑ | 4.81 | 5.79 | 6.39 | 6.49 | 6.70 | 6.81 | 6.92 |
| Rural | ↗↘ | 5.58 | 6.60 | 6.76 | 6.83 | 7.06 | 6.98 | 6.85 |
| Alcohol Any Use | | | | | | | | |
| Indiana | ↓ | 3.92 | 4.08 | 3.93 | 3.82 | 3.69 | 3.50 | 3.20 |
| Urban | ↓ | 4.25 | 4.15 | 2.97 | 3.81 | 3.63 | 3.41 | 3.03 |
| Rural/Mixed | ↗↘ | 3.20 | 3.71 | 3.69 | 3.62 | 3.58 | 3.56 | 3.39 |
| Rural | ↓ | 3.96 | 4.53 | 4.28 | 4.21 | 4.11 | 3.81 | 3.51 |
| Alcohol Primary Drug | | | | | | | | |
| Indiana | ↓ | 2.70 | 2.77 | 2.73 | 2.64 | 2.52 | 2.36 | 2.09 |
| Urban | ↓ | 2.86 | 2.76 | 2.76 | 2.66 | 2.51 | 2.36 | 2.05 |
| Rural/Mixed | ↓ | 2.28 | 2.61 | 2.55 | 2.49 | 2.42 | 2.32 | 2.16 |
| Rural | ↓ | 2.82 | 3.13 | 2.93 | 2.88 | 2.71 | 2.41 | 2.16 |
| Marijuana Any Use | | | | | | | | |
| Indiana | ←→ | 2.95 | 3.16 | 3.05 | 3.01 | 3.01 | 3.08 | 2.98 |
| Urban | ↓ | 3.22 | 3.25 | 3.05 | 2.96 | 2.90 | 2.91 | 2.71 |
| Rural/Mixed | ↑ | 2.39 | 2.88 | 2.95 | 3.00 | 3.08 | 3.28 | 3.37 |
| Rural | ↑←→ | 2.91 | 3.36 | 3.29 | 3.21 | 3.38 | 3.39 | 3.35 |
| Marijuana Primary Drug | | | | | | | | |
| Indiana | ←→ | 1.25 | 1.39 | 1.26 | 1.22 | 1.25 | 1.25 | 1.21 |
| Urban | ↓ | 1.42 | 1.53 | 1.33 | 1.30 | 1.32 | 1.32 | 1.21 |
| Rural/Mixed | ↑ | 0.92 | 1.08 | 1.11 | 1.10 | 1.12 | 1.14 | 1.19 |
| Rural | ↑ | 1.19 | 1.38 | 1.28 | 1.15 | 1.20 | 1.17 | 1.23 |
| Cocaine Any Use | | | | | | | | |
| Indiana | ↓ | 1.00 | 1.00 | 1.01 | 0.87 | 0.77 | 0.73 | 0.69 |
| Urban | ↓ | 1.37 | 1.30 | 1.29 | 1.09 | 0.97 | 0.91 | 0.85 |
| Rural/Mixed | ←→ | 0.50 | 0.62 | 0.82 | 0.64 | 0.52 | 0.52 | 0.51 |
| Rural | ↓ | 0.40 | 0.52 | 0.50 | 0.43 | 0.39 | 0.36 | 0.35 |
| Cocaine Primary Drug | | | | | | | | |
| Indiana | ↓ | 0.40 | 0.38 | 0.43 | 0.32 | 0.26 | 0.24 | 0.22 |
| Urban | ↓ | 0.58 | 0.55 | 0.56 | 0.44 | 0.38 | 0.34 | 0.32 |
| Rural/Mixed | ↓ | 0.15 | 0.16 | 0.30 | 0.20 | 0.11 | 0.10 | 0.10 |
| Rural | ↗↘ | 0.11 | 0.14 | 0.16 | 0.10 | 0.06 | 0.04 | 0.06 |
| Heroin Any Use | | | | | | | | |
| Indiana | ↑ | 0.34 | 0.46 | 0.61 | 0.69 | 0.83 | 1.07 | 1.21 |
| Urban | ↑ | 0.46 | 0.56 | 0.67 | 0.76 | 0.88 | 1.10 | 1.18 |
| Rural/Mixed | ↑ | 0.21 | 0.34 | 0.57 | 0.65 | 0.80 | 1.07 | 1.33 |
| Rural | ↑ | 0.14 | 0.29 | 0.42 | 0.51 | 0.68 | 0.93 | 1.13 |

**(continued on next page)**

## Appendix 4 – (continued from previous page)

| | Trend | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|---|---|---|
| Heroin Primary Drug | | | | | | | | |
| Indiana | ↑ | 0.28 | 0.35 | 0.44 | 0.52 | 0.63 | 0.82 | 0.94 |
| Urban | ↑ | 0.38 | 0.46 | 0.53 | 0.61 | 0.71 | 0.91 | 0.96 |
| Rural/Mixed | ↑ | 0.14 | 0.21 | 0.33 | 0.42 | 0.54 | 0.72 | 0.95 |
| Rural | ↑ | 0.10 | 0.18 | 0.25 | 0.32 | 0.45 | 0.62 | 0.83 |
| Meth. Any Use | | | | | | | | |
| Indiana | ↑ | 0.62 | 0.72 | 0.76 | 0.81 | 0.96 | 1.09 | 1.29 |
| Urban | ↑ | 0.42 | 0.45 | 0.49 | 0.52 | 0.60 | 0.69 | 0.82 |
| Rural/Mixed | ↑ | 0.79 | 0.97 | 1.03 | 1.15 | 1.34 | 1.57 | 1.87 |
| Rural | ↑ | 1.11 | 1.33 | 1.38 | 1.38 | 1.69 | 1.84 | 2.10 |
| Meth. Primary Drug | | | | | | | | |
| Indiana | ↑ | 0.34 | 0.40 | 0.43 | 0.48 | 0.59 | 0.66 | 0.70 |
| Urban | ↑ | 0.22 | 0.24 | 0.27 | 0.28 | 0.33 | 0.38 | 0.43 |
| Rural/Mixed | ↑ | 0.48 | 0.58 | 0.61 | 0.75 | 0.91 | 1.03 | 1.06 |
| Rural | ↑ | 0.58 | 0.72 | 0.71 | 0.79 | 1.02 | 1.08 | 1.10 |
| Pain Relievers Any Use | | | | | | | | |
| Indiana | ↑ | 0.88 | 1.13 | 1.36 | 1.50 | 1.56 | 1.57 | 1.47 |
| Urban | ↑ | 0.87 | 1.05 | 1.20 | 1.32 | 1.34 | 1.35 | 1.23 |
| Rural/Mixed | ↑ | 0.94 | 1.30 | 1.63 | 1.80 | 1.88 | 1.89 | 1.89 |
| Rural | ↑ | 0.82 | 1.14 | 1.49 | 1.71 | 1.84 | 1.84 | 1.66 |
| Pain Relievers Primary Drug | | | | | | | | |
| Indiana | ↗↘ | 0.51 | 0.66 | 0.81 | 0.88 | 0.89 | 0.86 | 0.78 |
| Urban | ↗↘ | 0.51 | 0.61 | 0.72 | 0.81 | 0.81 | 0.80 | 0.71 |
| Rural/Mixed | ↗↘ | 0.56 | 0.77 | 0.97 | 0.99 | 1.02 | 0.94 | 0.97 |
| Rural | ↗↘ | 0.44 | 0.62 | 0.87 | 0.96 | 1.01 | 0.95 | 0.73 |
| Rx Medication Any Use | | | | | | | | |
| Indiana | ↗↘ | 1.20 | 1.53 | 1.83 | 1.90 | 1.90 | 1.93 | 1.84 |
| Urban | ↗↘ | 1.18 | 1.41 | 1.58 | 1.64 | 1.65 | 1.69 | 1.56 |
| Rural/Mixed | ↑ | 1.24 | 1.74 | 2.25 | 2.31 | 2.27 | 2.30 | 2.31 |
| Rural | ↗↘ | 1.20 | 1.60 | 2.01 | 2.15 | 2.24 | 2.25 | 2.08 |
| RX Medication Primary Drug | | | | | | | | |
| Indiana | ↗↘ | 0.63 | 0.82 | 1.01 | 1.07 | 1.06 | 1.01 | 0.91 |
| Urban | ↗↘ | 0.61 | 0.74 | 0.86 | 0.94 | 0.93 | 0.92 | 0.81 |
| Rural/Mixed | ↗↘ | 0.69 | 0.98 | 1.28 | 1.28 | 1.25 | 1.14 | 1.13 |
| Rural | ↗↘ | 0.59 | 0.79 | 1.07 | 1.19 | 1.24 | 1.14 | 0.87 |
| Injection Drug Use | | | | | | | | |
| Indiana | ↑ | 0.42 | 0.55 | 0.66 | 0.78 | 0.96 | 1.17 | 1.26 |
| Urban | ↑ | 0.45 | 0.57 | 0.66 | 0.75 | 0.90 | 1.07 | 1.12 |
| Rural/Mixed | ↑ | 0.41 | 0.54 | 0.70 | 0.86 | 1.09 | 1.36 | 1.57 |
| Rural | ↑ | 0.29 | 0.48 | 0.62 | 0.76 | 0.97 | 1.19 | 1.27 |

**Note:** ↑ = increasing trend; ↓ = decreasing trend; ↗↘ = increasing followed by decreasing trend; ←→ = relatively stable trend; ↑←→ = increasing trend followed by stability; ↓←→ = decreasing trend followed by stability

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