CARSEY INSTITUTE

REPORTS ON RURAL AMERICA

Substance Abuse in Rural and Small Town America

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CARSEY INSTITUTE

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A Carsey Institute Report on Rural America

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Foreword

Rural America is changing in significant ways. Industries that traditionally sustained rural people and places—farming, timber, mining, fishing and manufacturing—are employing fewer workers than they have in the past. Some communities, especially those distant from urban areas and with few scenic amenities, are struggling with low incomes, a low-skill labor force, limited access to services, and weak infrastructure. Other communities are finding new development opportunities in their rural quality of life, natural resources and landscape. Regardless of whether they are declining or growing, rural communities must cope with the impacts of globalization, new land use patterns, changing demographics, and challenging issues such as substance abuse.

Many people have an image of rural communities as peaceful, quiet and isolated places, far removed from the social problems of the cities. But rural areas have always been more complicated and diverse than popular stereotypes suggest. Today they are increasingly becoming places where retirees from the cities and others seeking a slower pace of life are choosing to live. We are also seeing growing numbers of "new Americans" seeking job opportunities moving into rural communities. At the same time, rural America still lacks many of the public services and access to these services that are much more commonplace in metropolitan areas. This report, *Substance Abuse in Rural and Small Town America,* shows that rural and urban places today have similar rates of substance use and abuse, and, for abuse of some substances, rural Americans are at an even higher risk than their urban counterparts. For instance, rural youth are particularly at risk for substance abuse, and stimulant use among the unemployed is higher in rural America. The report makes it clear that rural America is not immune to "city" problems, but that rural people and places face unique challenges.

Despite some dire statistics, this report offers hope for rural communities struggling with an epidemic of drug and alcohol abuse that one person quoted in this report calls "an issue eating us alive." We offer recommendations for programs and policies that can make a real difference—investments that work—by drawing on the strengths already in place in rural areas. But the problem of substance abuse demands a multi-faceted approach. Programs and policies that help rural families earn a living, save money, and invest in the future will help to reduce a number of rural challenges, including substance abuse. Stable jobs sustain stable families, and that is good for children and communities.

The Carsey Institute's Center on Rural Families and Communities has produced this report for our series, *Reports on Rural America*, with support from the Annie E. Casey, Kellogg, and Ford Foundations. This report contributes to the Carsey Institute's goal of building awareness and understanding of rural families and communities and stimulating fresh thinking about effective rural policy and programs that invest in those families and communities. We thank Karen Van Gundy for her insightful analysis of substance use and abuse in rural America, and appreciate editorial help from Priscilla Salant, Leslie Hamilton, and Amy Seif. We appreciate the thoughtful reviews by Heather Turner, Joe Diament, and Bill O'Hare. The data for Van Gundy's analyses were made available by the Inter-University Consortium for Political and Social Science Research. She bears sole responsibility for the analyses conducted in this report.

Introduction

The media warn us about a "meth crisis" in rural America, and discouraging headlines are commonplace. As journalist and author Alan Elsner (2005) reports, the relative isolation and quiet lifestyle in rural areas and small towns provide ideal opportunities for drug activity and methamphetamine production. His interview with a member of Franklin County Sheriff's Department in Missouri—a state particularly hard hit by an influx of meth makers, dealers, and users—highlights some of the unique characteristics of the meth trade:

> It's the first drug in the history of the United States we can make, distribute, sell, and take, all here in the Midwest. You can't grow a coca plantation or an opium plantation here to get your heroin or cocaine, and marijuana takes four or five months to grow a good plant. With methamphetamine, you can go out and for a couple hundred dollars, you can make your drugs that day.

Wyoming Governor Dave Freudenthal expressed his frustrations at a statewide conference on fighting the meth problem: "It doesn't matter where we go in the state, methamphetamine is there. The whole issue is eating us alive."

Despite dramatic and frightening statements like these, there has been only limited scholarly research about meth or other substance abuse among rural people nationwide. In this report, you will see that rural America does face some unique challenges with meth; yet only a very small proportion of rural Americans abuse methamphetamines. More troubling crises involve the high prevalence of the abuse of alcohol, especially among rural teenagers, and the limited number of treatment options for rural Americans who need help.

This report draws on existing knowledge and uses data from a nationally representative data source to understand patterns of substance abuse in rural America. In the background section, it defines terms, reviews previous studies, and presents findings about recent trends in substance abuse in rural and urban areas. Next, it looks at patterns of substance abuse for people of different ages, sexes, and races. It also considers patterns of substance abuse for people with different levels of education, income, and employment status. Findings about rural family and community contexts are also presented. The report concludes with a summary of the major findings and a discussion of policy implications. First, the report begins with a story of a place faced with tremendous substance abuse problems that is finding ways to overcome theses challenges.

Citizens Lock Arms Against Meth in Kirksville, Missouri

By Julie Ardery

Five years ago, Missouri took the national title from California—lunging to first place in methamphetamine lab seizures. To the chagrin of the state's police, mental health workers, judges, and foster care officials, Missouri has stayed number one ever since.

While the rural Midwest is notorious for meth problems today, illegal methamphetamines were first produced in large quantities on the West Coast thirty-five years ago. Motorcycle clubs then dominated the manufacturing of "crank" or "speed," jealously guarding their "cooking" methods. But by the 1990s, the drug had moved east. Recipes began appearing on the Internet, many formulas calling for anhydrous ammonia, a common corn fertilizer. Built from such innocuous materials—kitchen matches, cold pills, tubing, and brake fluid—and requiring no more space than an ordinary kitchen or motel room—meth labs proliferated in the Midwest, taking law enforcement and small towns by surprise.

By 2001, Adair County in northern Missouri had a full-blown problem on its hands. Only the forty-second most populous county in the state, with a population of 24,795 (US. Census July 2001), Adair ranked eighth in meth lab seizures.

For the people of Adair County, however, meth crime wasn't statistical; the drug had a face and a sinister reality. The county seat of Kirksville and surrounding countryside had been horrified by a grisly string of events after a man born in rural Adair County moved back home and taught a network of friends to "cook" speed. By the mid-1990s, his mini-industry had grown ultra-violent: he burned down a barn to destroy evidence of drug-making, shot a deputy sheriff, and allegedly murdered and decapitated an errant drug runner.

Patrick Williams, principal of Kirksville High School, admitted, "It was scary." Williams says that by the late 1990s there were "kids so violent they had to be removed from school by police. One Saturday night, a house burned down two blocks from the church I attend," when a meth lab's toxic chemicals exploded.

In 2003, Kirksville hired James Hughes, a native of southeast Kansas and a veteran of Boulder, Colorado's police force, as its new police chief. "Like a frog dumped in hot water, I came with a fresh perspective," Hughes says. The new chief devoted his first two months to meeting citizens, business owners, and county and state law enforcement teams in the area, as he sought a strong direction for his department. He looked at the number of local drug cases, dump sites, fires and burglaries, and saw children endangered by home meth labs and placed into foster care. Hughes decided that meth was "the most wide-reaching problem" in Kirksville and that tackling it would have the biggest impact on the town and surrounding community.

From experience with other anti-crime initiatives, Hughes knew "the most successful were those that brought in stakeholders," including not just police and judges but schools, churches, businesses, and mental health professionals, too. He knew Kirksville needed "a true community coalition" to face its drug problem, and in July 2003, the Adair County Meth Coalition went to work.

With a core of dedicated community leaders, the Meth Coalition (now involving 30 local organizations) adopted what Hughes calls "an in-your-face approach." Their message, broadcast on public service announcements through all the Adair County media, was blunt. Hughes spells it out: "If you're on meth, we want you to get fixed. If you won't, we're a community that's gonna run you out of town."

Local merchants had endured non-stop theft of over-the-counter cold medications containing pseudoephedrine—a key ingredient in meth. The loss-prevention manager of Kirksville's Wal-Mart took a strong early role in the coalition, creating a brash publicity campaign. "Eradicate Meth" was the Coalition's slogan, and a huge black cockroach was its logo. By October 2003, Kirksville High School students were parading down Franklin Street at homecoming with a banner reading "Stop the Infestation" with the Coalition's anonymous tipline number in bold print.

Through free spots on local TV and two radio stations, and a strong series of stories in Kirksville's newspaper, the community group alerted citizens to meth's telltale signs: the acrid

smell of a lab in operation, discarded sacks of batteries and light bulbs, the addict's sleeplessness, sudden weight-loss and paranoia. Residents added up their observations, and the tipline began lighting up.

Community leaders for the first time started measuring meth's real impact. Principal Pat Williams listed the names of teenagers who had dropped out of high school in the previous two years, and then began "filtering these through the juvenile offices," probation officials, and courts to identify students with known meth associations. He discovered "at least half (the dropouts) had been impacted by meth in some fashion;" either they'd made, sold or abused the drug themselves, or their families had been involved in methamphetamine crime. This kind of evidence was a powerful impetus to get involved and stay involved with the Adair County Coalition.

In December 2003, the organization held workshops for retailers. The seminars explained existing Missouri laws limiting sales of pseudoephedrine products and showed storeowners how to spot potential drug makers. Then, the Kirksville Daily News initiated some true enterprise reporting. The paper sent two young people undercover into 23 local stores, where they tried to buy illegal quantities of pseudoephedrine pills. The paper reported in January 2004, "Fifteen of the 23 outlets sold cold medicine to one person in quantities that exceeded the legal limit. Only one store meanwhile, contacted the authorities to report suspicious activity."

This swift, well-publicized test of the Meth Coalition's effort showed how much the group had left to do. Law enforcement and other Coalition members kept the pressure on, and by the end of 2004, with better informed citizens and more energized policing, meth lab seizures in Adair County had declined 70 percent. Over the same period, meth seizures in Missouri as a whole declined less than 3 percent.

Sondra Sanford, the Coalition's meth prevention project coordinator, credits much of this success to Adair County's full time prosecutor. "Part-timers have divided loyalties," she says. Adair voted to spend some $45,000 more per year to hire Mark Williams as its full time prosecutor in January 2003. Williams trained local law enforcement officers to gather evidence with the rigor and precision to get convictions. He even organized a student art contest for fourth, fifth, and sixth graders, asking them to illustrate the dangers of meth, and turned the children's drawings into a community calendar.

In Missouri, meth has been especially cruel to the young. Based on interviews with children's advocates in western Missouri, the Joplin newspaper described the children of meth addicts as "emotionally orphaned" and often "unkempt, undernourished, hyper-vigilant and developmentally disabled." Children diagnosed as asthmatics in many cases have actually been impaired by the chemical fumes of home-meth labs.

Christine Steele, a social services investigator and caseworker in Adair County, says that because they've been neglected, the children of meth addicts are "very self-reliant. You get a lot of the parentified child roles." Deb McKim, a former Headstart teacher here and now an in-home service specialist, has worked with children who were exposed to meth and other drugs in vitro. She says such children show developmental delays and sometime severe physical handicaps; they're especially prone to anxiety and depression.

In 2005 Missouri's Department of Social Services began keeping statistics on the numbers of children coming into foster care due to meth and other drugs. DSS found that in December 2005, statewide, 12 percent of all foster children had been displaced by drug abuse. In far southwest and northwest Missouri, numbers are higher than 30 percent. But in this respect, too, the Adair County Meth Coalition has shown progress. By December 2005, in Adair's judicial circuit (DSS's unit of measurement), less than 10 percent of all foster care children had been taken from their homes for meth-related reasons (December 2005). In August 2004, the circuit manager had told Kirksville's newspaper that "about 24 percent of the 75 children in its custody have parents with a drug problem"—in 17 months, drug-related foster care cases here are down by more than half.

Nobody in Adair County is claiming victory over the meth problem. Sondra Sanford says that meth seizures in 2005 were

slightly higher than in the previous year, and she acknowledges that while the Coalition has closed down some of the local meth labs, the drug now comes to Adair County in another form called "ice," which police suspect is imported from the southwestern United States and Mexico.

Sanford and Police Chief Jim Hughes shudder at the thought of complacency, even as they prove that the Coalition is working. One awkward sign of success is that while meth lab seizures in Adair have declined since 2003, busts in Macon County just to the south more than doubled between 2003 and 2004. Still, the Coalition is accomplishing what it set out to do. "We can't solve the problems of the region or the state," admits Pat Williams. "All we can do is our own neighborhood."

Chief Hughes adds that shoplifting in Kirksville is "sharply down." The Coalition's education team has mounted tags on the shelves of local stores next to meth "precursors" —everyday items like glass jars, light bulbs and aluminum foil that are also meth paraphernalia—alerting drug-makers that they're being watched.

Pat Williams says that the meth problem has been curbed at the high school. "It is impossible to mask the outward signs," of meth abuse, he says. "Behavior becomes volatile, erratic," students lose weight, develop sores on their skin and even lose their teeth. He remembers seeing these symptoms five years ago, but today, out of 800 students, he says, "I couldn't tell you there's one student taking meth." Missouri's high school dropout rate for 2005 was 3.8 percent. Williams says Kirksville High School's is now below 3 percent.

Why has Adair County succeeded, if not completely, at least measurably and noticeably in tackling its meth problem?

In 2003, the Adair County Meth Coalition took an aggressive stand. Its message was tough and timely, in a community still haunted by a hideous murder and the "scary" events of the 1990s. Sondra Sanford says, too, that the Coalition underlined meth's economic consequences, to show how the drug was "everybody's problem." Public service announcements and educational programs calculated money lost in burglaries and theft, and money spent on jails, courts, foster homes, and health care. Chief Hughes contends that in a community this "rural, conservative, and economically disadvantaged," the focus on costs helped sustain citizens' interest and "convince people the problem is their problem, not just something for law enforcement and treatment. If we hadn't gotten the buy-in from Mr. and Mrs. Kirksville, we wouldn't have had anything like this success."

Sanford stresses that fighting the meth problem required involving all parts of the community: churches, teachers, police, teenagers, business owners. "If I'm an atheist, a faith-based (approach) is not going to reach me. If I'm a youth and rebellious, law enforcement is not going to reach me," she says. "When sectors come together, you're able to intensify the message. You have more arms reaching out there."

Kirksville's enterprising newspaper was committed both to the Coalition effort and to its own role—to report the group's real impact. The paper took a huge risk with its advertisers by staging essentially a "sting" of local merchants less than six months after the Meth Coalition began. In explaining "Why We Went Undercover," the editor Derek Spellman wrote, "Though a phone call to retail owners would give us a store's policy on cold medicine sales, only an actual visit would show the policy in practice." That it did. The paper's exposé woke up readers and local merchants and likely tightened the sales of meth precursors.

The same year that the Adair County Meth Coalition began and the county hired its full time prosecutor, 2003, Circuit Judge Russell Steele held the county's first "Drug Court." In Missouri, there are now approximately 80 such courts for adults where drug offenders, with the consent of the local prosecutor, can choose a 21-month intensive program of monitoring, counseling, drug-testing, and rehabilitation instead of jail time.

The Adair County Drug Court convened for the first time on March 1, 2003. Its first applicant and graduate was Kami Hubbard, a former meth addict who was facing 14 years in prison. Hubbard is now a member of the Adair Coalition's education committee. She calls the drug court program "really rigid," involving a fixed schedule of appointments with therapists, probation officers, and social service workers, set numbers of 12-step meetings each week, and regular court appearances—as well as frequent random urine tests. "The different phases were really good for me," Hubbard says. She came to view its tight structure and requirements as "safety nets," and now tells other drug-court applicants, "It's simple, as long as you do what they tell you to do."

Now clean for three years, Hubbard has been reunited with her husband and four children. As well as working with the Adair County Meth Coalition, she's studying criminal psychology at Truman State University and facilitating a support group for recovering meth addicts at Kirksville's treatment center.

Another reason that Adair County may have succeeded is historical and cultural. The Meth Coalition wasn't this community's first big challenge. In the 1980s, with a fiscal squeeze on all Missouri's public universities, it became clear that Northeast Missouri State, in Kirksville, would have to change

its regional mission or close. The college has evolved into Truman State University and prospered as Missouri's only "statewide public liberal arts and sciences university." Also, having its requests for funding from the state transportation department turned down year after year, Kirksville citizens in 2002 voted overwhelmingly (78%) to tax themselves and widen the highway south of town.

Pat Williams says that undertaking something like the Meth Coalition requires "a community mentality." And, he says, its "significant events"—like the opening of the new highway and Truman State's success—that "tend to create that mentality."

Police chief Hughes believes that Kirksville's geographic isolation—three hours from a metro area—worked in favor of the Meth Coalition. "People were ready, and they were used to working together," he says. There were "no turf battles" among the area's law enforcement agencies, he says, because "we can't afford them. There's nobody here to help us."

The Adair County Meth Coalition began as an all-volunteer effort. In the Spring of 2006, the group is applying for its third $100,000 SAMHSA grant to keep the pressure on criminals and sustain the public's dedication. Having achieved some success versus crime, the organization is now turning more attention to rehabilitation and treatment. The group's new co-chairs are Pat Williams, newly named superintendent of Kirksville schools, and Kelly Van Vleck, program director at Preferred Family Healthcare, the local treatment center.

Initially it made sense for the group to take a hard line against crime: "People needed to be shook," Van Vleck says. "We kind of backed out treatment wise." Now, she says, Adair County needs to consider "the other side of the supply/demand chart." Without letting up on enforcement, it's time to reckon with Kirksville's meth addicts and to learn what it will take to help them change. "You've got to send out a message of hope," Van Vleck says. "Recovering addicts at first were not involved (in the Meth Coalition). Now they are."

On the clinical side, Van Vleck wants better cognitive testing of meth addicts and better measurement of treatment outcomes. On the social service side she intends to tackle problems like housing, so that recovering addicts don't drift back into the same sick environments. She and others also want a new marketing strategy for the Coalition, something beyond the cockroach. Meth addicts, she says, "don't look like weird monsters or beasts. They look like the girl next door." Van Vleck says the Coalition needs to convince the public that structured, long-term treatment (like the drug court) works; that drug addicts can and do recover.

The meth problem presented Adair County with an overt crisis; an "outsider," the new police chief, managed to mobilize a frightened community and deliver results. "With seizures and arrests down," Hughes says, the issue now is "how to maintain the integrity of the coalition, keeping it alive."

Coalition leaders know their new direction will be a harder sell, its new goals harder to reach. "Suspension is easy," says Pat Williams. "Locking them up is easy. Let's try to attack the root causes."

DSS investigator Christine Steele, another Coalition member, sees crack cocaine coming to Adair County now. She voices equal parts encouragement and caution: "It's gotten better in the last two years," she says. "We've made great strides but it's going to be an ever-changing beast."

Background

Defining terms

For purposes of this report, "rural" refers to areas that, during the year of the study, were classified as non-metropolitan; "urban" refers to metropolitan areas, including both central cities and surrounding suburbs.[1] Unless otherwise specified, alcohol and illicit drug use is defined as simply using the substance in the previous year. Alcohol and illicit drug abuse is defined according to the criteria specified in the Diagnostic and Statistical Manual of Mental Disorder (DSM) for either substance abuse or dependence. Published by the American Psychiatric Association, the DSM contains definitions of psychiatric disorders to ensure uniformity of diagnosis by mental health professionals. The definitions are criteria-based and are revised periodically as new research and knowledge about psychiatric disorders become available. This report considers the abuse of alcohol and the following illicit drugs:

- marijuana/hashish;
- cocaine (including crack);
- inhalants;
- hallucinogens;
- heroin;
- stimulants (including meth); and
- prescription-type drugs used non-medically (pain relievers, sedatives, tranquilizers).

Also in this report, unless otherwise specified, age categories are defined as follows: "youth" are individuals age 12 to 17; "young adults" are age 18 to 25; and "adults" are age 26 and older.

Prior studies

Recent studies regarding substance use and abuse reveal some discouraging trends across the United States. According to the 2004 Partnership Attitude Tracking Study (PATS), which surveyed 7,300 U.S. teenagers, teen use of alcohol and Ecstasy had declined, but the use of inhalants, as well as prescription and over-the-counter medications, had increased. Data from

[1] Counties classified as non-metropolitan had neither: (a) a city of at least 50,000 residents; nor (b) an urbanized area of 50,000 or more and a total area population of at least 100,000. In addition, they were not economically tied to counties that did have one or both of these characteristics.

DSM-IV* Criteria for Substance Abuse and Dependence

(*Diagnostic and Statistical Manual of Mental Disorders, 4th edition published by the American Psychiatric Association)

Substance abuse

A maladaptive pattern of substance abuse leading to a clinically significant impairment or distress, as manifested by one (or more) of the following, occurring within a 12-month period:

- Recurrent substance use resulting in failure to fulfill major role obligations at work, school, or home
- Recurrent in situations in which it is physically hazardous
- Continued substance-related legal problems
- Continued substance abuse despite having persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of the substance

Substance dependence

A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three (or more) of the following, occurring at any time in the same 12-month period:

- **Tolerance:** A need for markedly increased amounts of the substance to achieve desired effect; or markedly diminished effect with continued use of the same amount of the substance.
- **Withdrawal:** The substance or a closely related substance is taken to relieve or avoid withdrawal; or characteristic withdrawal symptoms as follows: the development of substance-specific syndrome due to the cessation of (or reduction in) substance use that has been heavy and prolonged; and/or the substance specific syndrome causes clinically significant distress or impairment in social, occupational, or other areas of functioning.
- The substance is often taken in larger amounts or over a longer period than was intended
- There is a persistent desire or unsuccessful efforts to cut down or control substance use
- A great deal of time is spent in activities necessary to obtain the substance
- Important social, occupational, or recreational activities are given up or reduced because of use
- The substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance

Source: American Psychiatric Association (APA). 1994. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV). Washington, DC: American Psychiatric Association. [Adapted slightly from original source]

the 2005 Monitoring the Future (MTF) survey also show an increase in use of inhalants by middle and high school students. Regarding prescription drug use, the MTF study showed that the level of use among high school seniors of pain relievers (e.g., Vicodin and Oxycontin) and sedatives had risen. Data from the 2004 National Survey on Drug Use and Health (NSDUH) also show increases in the abuse of several categories of pain relievers among Americans ages 12 and older.

Increases in prescription drug use may reflect a growth in the availability of prescription drugs online. Findings from a 2004 National Center on Addiction and Substance Abuse (CASA) report found that hundreds of unregistered online pharmacies make prescription drugs so easily attainable that youths are buying them. Although the above studies do not focus on rural America per se, the trends they identify have the potential to threaten both rural and urban residents.

Studies that focus on rural substance use and abuse identify a changing image of rural life. Published in 1994, the monograph, *Rural Substance Abuse: State of Knowledge and Issues*, was a collection of scholarly research and discussion dealing with a variety of topics including: substance use among American youth; substance abuse among migrant farm workers; health consequences; and intervention, prevention, and treatment strategies. Contributors to the monograph agreed that the popular image of an idyllic rural life amidst rolling hills and white picket fences with minimal social problems, like substance abuse, is not accurate.

Six years later, *No Place to Hide: Substance Abuse in Mid-Size Cities and Rural America* (2000), a study commissioned by the U.S. Conference of Mayors, reported that rural teens were using alcohol and illicit drugs at higher rates than urban teens, and that for young adults and adults, illicit drug use rates were comparable across rural and urban settings. A recent report from the South Carolina Rural Health Research Center (Mink et al. 2005) also found evidence for elevated rates of drug use, including meth, among rural youth. Despite these trends,

Prescription Drug Abuse—Youth at Risk

There are three categories of commonly used prescription drugs:

• Opoids—(morphine, codeine, OxyContin, Darvon, Vicodin). These drugs affect regions in the brain that change the way we experience pain. They can also affect how we experience pleasure, and users sometimes feel an initial sense of euphoria. An overdose can cause severe respiratory depression or death. Opoids are highly addictive.

• Stimulants—(Ritalin, Adderal–treatments for attention deficit/hyperactivity disorder and narcolepsy). Stimulants increase levels of chemicals in the brain and body which, in turn, raise blood pressure and heart rate. An increase in dopamine can cause a feeling of euphoria. High doses of these drugs result in irregular heartbeat, dangerously high body temperature, heart failure, and seizures. Psychological effects include paranoia and hostility. Stimulants are highly addictive.

• Central nervous system (CNS) depressants—(Valium, Xanax, Ambien–for treatment of anxiety and sleep disorders). These drugs, which include tranquilizers and sedatives, slow brain function. They are often used in conjunction with other drugs. When stopped abruptly, seizures may occur.

A 2004 study by the National Center on Addiction and Substance Abuse (CASA) reports that nationwide, the number of 12- to 17-year-olds who have abused prescription drugs increased 212 percent between 1992 and 2003, from over 735,000 to 2.3 million children. Prescription medicine has become the second most illegally abused drug, trailing only marijuana.

Just as frightening is the ease with which America's youth are able to obtain these medications. While old methods of doctor shopping (complaining of similar symptoms to a number of doctors), filling prescriptions at multiple pharmacies, stealing from parents, and buying from friends (Ritalin and Adderal, in particular) still exist, the easiest way to get drugs is on the Internet, through any one of the hundreds of unregulated online pharmacies.

An alarming survey conducted as part of the CASA study found, during one week in 2004, a total of 495 websites offering a wide variety of dangerous and addictive prescription drugs. Only 6 percent of those sites required a prescription. There were no safeguards in place to prevent child buyers. One example from the investigation described a purchase of OxyContin over the Internet without a prescription. One month later, without further contact, the online pharmacy automatically charged the same credit card and mailed a refill order to the same address.

OxyContin, or "Hillbilly Heroin," is ravaging rural communities across the country. Maine, Kentucky, and West Virginia are particularly hard hit. One reason may be that doctors originally prescribe the drug to legitimately treat chronic back pain—a result of long years of heavy labor in logging, farming, mining, or working in factories and mills. As those businesses downsize or close completely, people are left with no jobs and no hope. A natural release for many is to abuse their prescription drugs. Once hooked, treatment is difficult due to the isolation of rural communities and over-burdened health facilities.

Children as young as 12 and 13 are showing up at treatment centers. When asked how they got hooked, many addicted young people say that the drugs were easy to obtain, and they assumed prescription drugs were safe to take because the were "prescribed by a doctor."

Sources: National Institute on Drug Abuse (NIDA) InfoFacts www.nida.nik.gov/infofacts/Painmed.html, Missourian, March 12, 2006; CASA, 2005; "OxyContin, Prescription Drug Abuse," CSAT Advisory, U.S. Dept. of Health and Human Services, April 2001; "Facing the addiction: The growing drug-abuse problem in Maine (2005).

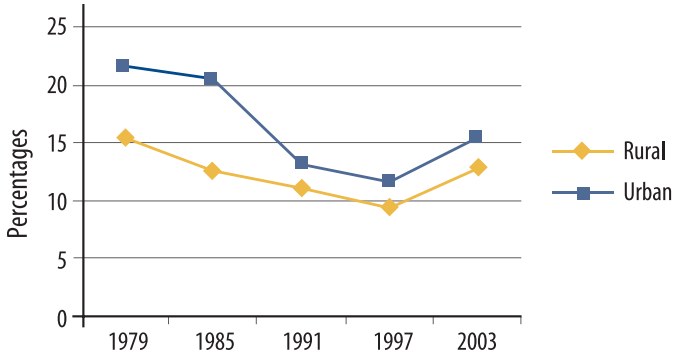
mental health workers in rural schools receive less training and are available for fewer hours than those in urban schools.

Recent trends

The present report is based on nationally representative data from the National Survey on Drug Use and Health (NSDUH).[2] According to these data, drug use peaked in 1979, declined dramatically throughout the 1980s, but then increased in the late 1990s. By 2003, even though current use rates remained below their 1979 peak, drug use was on the rise. Figure 1 shows the dramatic change in the relative rates of rural and urban drug use.

In 1979, roughly 15 percent of rural residents reported using illicit drugs in the prior year, compared to 22 percent of urban residents. While 1985 marked the beginning of a temporary decline in urban drug use, drug use by rural residents declined more gradually. By 1991, only two percentage points separated the two groups (11 percent rural and 13 percent urban). This two percent disparity remained constant: in 2003, about 13 percent of rural and 15 percent of urban residents reported using drugs. Despite somewhat lower rates of use in rural compared to urban settings, it seems clear that rural areas are by no means a "safe haven" from illicit drug use.

Figure 1: Trends in Illicit Drug Use among Rural and Urban U.S. Residents Ages 12 and Older (NSDUH 1979-2003)



Perhaps more alarming, underage drinking is elevated in rural areas. Relative to their urban counterparts, rural youth ages 12 to 17 are significantly more likely to report consuming alcohol. In 2003, roughly 37 percent of rural youths (compared to 34 percent urban) reported drinking alcohol in the past year (Figure 2). While rural and urban drinking patterns in this age group were similar until the early 1990's, subsequently the consumption of alcohol among rural youth has tended to be higher than that of urban youth. Among 16- to 17-year-olds living in rural areas, about three in five reported drinking alcohol in 2003. If the NSDUH sample is representative of the population as a whole, we would expect that 1.8–1.9 million rural youth (out of roughly 5 million) and 1.0–1.1 million of those aged 16–17 (out of about 1.7 million) consumed alcohol the year before the survey.

Inhalants —"America's hidden drug problem"

While the practice of inhalant abuse has been in existence since at least the mid-1700s, it wasn't a widespread problem in the United States until the 1950s, when glue-sniffing entered the public vocabulary. Since then, the array of products has expanded to include shoe polish, lighter fluid, nail polish, paint thinner, whipping cream aerosol, nitrous oxide ("Whippets"), amyl nitrate ("poppers"), and locker room deodorizers, to name just a few. Inexpensive and readily available, inhalants are particularly attractive to our youngest adolescents. A recent report by the Substance Abuse and Mental Health Services Administration (SAMHSA) disclosed that based on data from the 2002 to 2004 NSDUH reports, an average of 598,000 children ages 12 to 17 initiated inhalant use in the past twelve months. Of those, 30 percent were ages 12 or 13, 39.2 percent were ages 14 or 15, and 30.8 percent were ages 16 or 17. In fact, a separate study found that inhalant use begins much earlier than use of alcohol or marijuana.

These youngsters often have no idea that this casual pastime can be deadly. The high that they get from "sniffing," "bagging," or "huffing" comes on quickly and disappears just as quickly. But inhalants can cause damage in the brain, liver, heart, kidneys, and lungs. Vision and hearing can be impaired; sensory-motor and learning disorders can result. Inhalant abuse has been associated with serious behavior problems, delinquency, and crime, and seems to be a precursor to later substance abuse.

The problem exists in both rural and urban areas, and the latest studies reveal that girls are using inhalants even more than boys. While children of all races and ethnicities are affected, the crisis has been felt most severely among Native Americans.

Sources: Beauvais 2002; SAMHSA press release 2006; Mosher et. al. 2004;

[2] Sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), the National Survey on Drug Use and Health (NSDUH) is the largest and most inclusive survey about illegal drug use in the United States. The NSDUH includes a series of questions about substance use, abuse, and dependence, as well as socio-demographic questions and other questions relating to alcohol and drug use behaviors. It is administered annually to residents of households, non-institutional residents such as college dorm or group home dwellers, and civilians living on military bases. The sample does not include residents of jails or hospitals, nor does it include homeless people who avoid shelters, or military personnel on active duty. All respondents are age 12 or older, and are randomly selected, contacted by letter, and then interviewed in their homes. Less sensitive questions are dealt with face-to-face, by trained interviewers using laptop computers. More personal and confidential questions are answered by the respondent, using an audio computer-assisted self-interviewing (ACASI) procedure. Participants are paid for their time at completion of the interview. While the NSDUH has some limitations, it was chosen for this study because it allows analysis of abuse and dependence among people of different ages, residencies, and other characteristics. At the time this report was compiled, the 2003 NSDUH data were the most current data available.

Figure 2: Trends in Alcohol Use among Rural and Urban U.S. Residents Ages 12-17 (NSDUH 1979-2003)

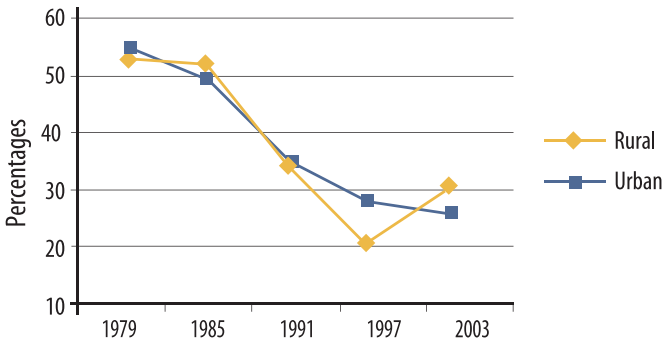


Figure 3: Meth Use among Rural and Urban U.S. Residents Ages 12 and Over (NSDUH 1999-2003)

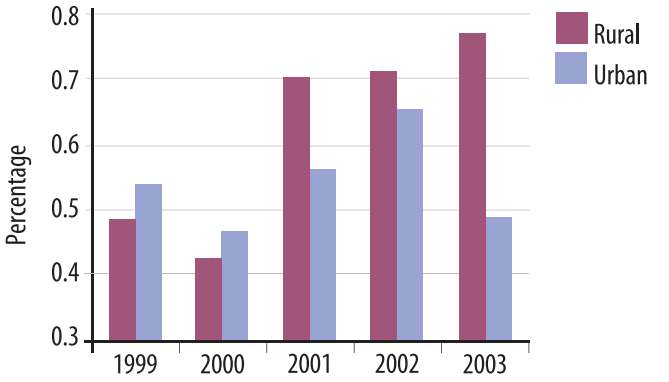
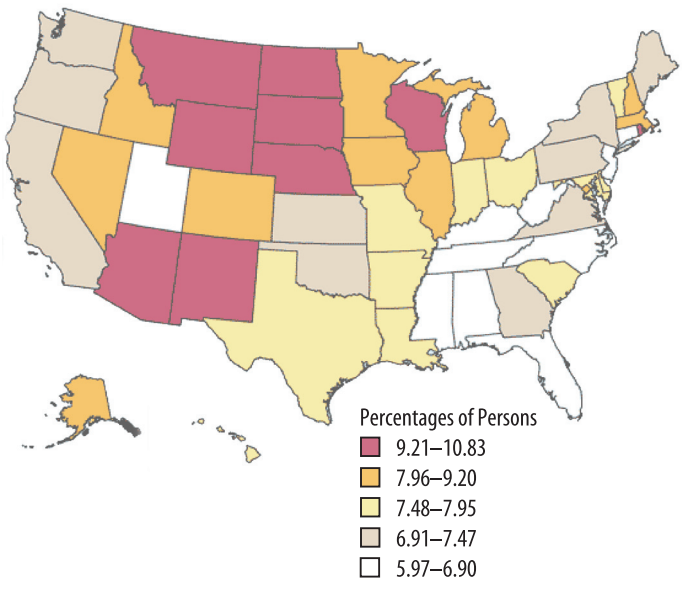


Figure 4: Alcohol Abuse among Persons Ages 12 or Older by State: Percentages, Annual Averages Based on 2002 and 2003 NSDUH (Source: Wright and Sathe 2005)



Regarding recent concerns about meth in rural areas, the NSDUH data show that self-reported meth use is elevated in rural America. As Figure 3 shows, rural/urban differences seem to emerge in 2003; prior to 2003, meth use rates are essentially equivalent for rural and urban residents. The most notable increases are among rural young adults (data not shown). Since 2000, meth use escalated by about a third for rural young adults. While informative, national use trends like these, tell only part of the story.

Substance abuse by region and state

The larger issue of substance abuse is more complex. People may use alcohol or other substances occasionally or moderately, but never develop serious substance-related problems. Therefore, it is necessary to examine the abuse of substances. Using state-level data, the map in Figure 4 shows that the highest rates of *alcohol abuse* tend to be concentrated among

Methamphetamine—Rural America at Risk

The results of the 2003 National Survey on Drug Use and Health (NSDUH) revealed that almost eight out of every thousand rural Americans self-reported methamphetamine use, compared to about five per thousand in urban areas. Also known as "meth," "speed," or "chalk," the drug is an odorless, white, crystalline powder that can be smoked, snorted, injected, or taken orally. It dissolves easily in water or alcohol, and when ingested, in any form, the user experiences an almost immediate rush of energy and a feeling of intense euphoria that can last as long as twelve hours. Once the effect wears off, the euphoria is replaced by similarly intense feelings of depression, paranoia, and sometimes violent behavior. Users initially become psychologically desperate for another dose, but the craving quickly becomes a physical need of grave proportions.

Meth, it turns out, is remarkably easy and inexpensive to make, using common ingredients available at the local hardware and farm supply store, and recipes available on the Internet. Meth labs have been found in basements, kitchens, ditches on a lonely country road, motel rooms—almost anywhere—and rural America has become a refuge for drug makers, dealers, and abusers.

Rates of meth use were fairly comparable for rural and urban Americans until 2003, when differences seemed to emerge. The most notable increases were among rural young adults, ages 18 to 25. Since 2000, in fact, meth use for that group has increased by about a third. Public officials across the country report feeling overwhelmed by the task of enforcing the law and treating the addicted. The state of Missouri, for example, had 2,746 seizures of meth-related paraphernalia in the fiscal year ending September 2004. Meth has found its way into the lives of Native Americans as stimulant use has increased on reservations. In 1997, hospitals run by the Indian Health Service treated 137 people for stimulant abuse. By 2004, that number had jumped to 4,946.

Sources: Gillam, C. 2005. Reuters News Service.; Baca, K. Summer 2005. Colorlines Magazine: Race, Action, Culture.

Figure 5: Illicit Drug Abuse among Persons Ages 12 or Older by State: Percentages, Annual Averages Based on 2002 and 2003 NSDUH (Source: Wright and Sathe 2005)

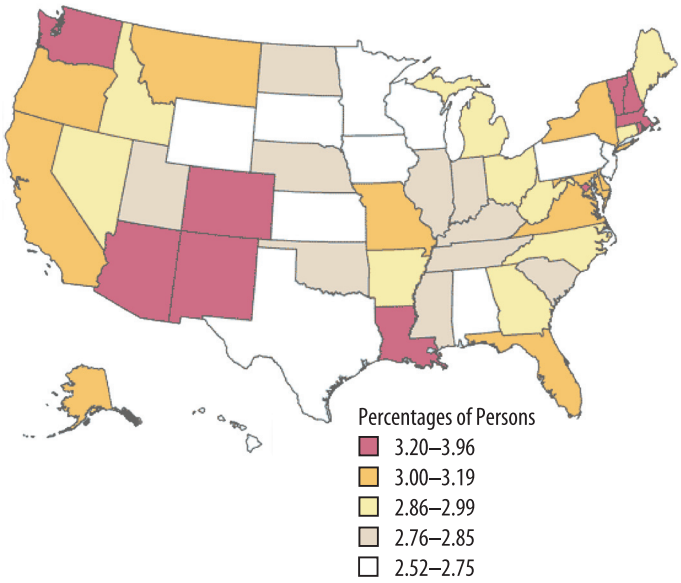


Table 1: Substance Abuse by Rural and Urban Residency among U.S. Residents Ages 12 and Older (NSDUH 2003)

	AGES 12 AND OLDER	
	RURAL	URBAN
Alcohol	7.14 %	7.66%
Cocaine	.57	.63
Hallucinogen	.12	.13
Heroin	.04	.09
Inhalant	.07	.07
Marijuana	1.69	1.82
Pain Reliever	.54	.58
Sedative	.04	.06
Stimulant	.22	.14
Tranquilizer	.22	.16
Any Illicit Drug	2.61	2.92
Alcohol or Drug	8.53	9.30

states in the West, Southwest, and Midwest (Wright and Sathe 2005). According to the U.S. Census Bureau, many of these states are also the nation's most rural states. Estimates of rural populations range from 70 percent in Wyoming to about 35 percent in New Mexico. (See Appendix Table 1 for a complete list of rural state population estimates).

A different picture of substance abuse emerges when we look at *illicit drug abuse* on a state-by-state level. Figure 5 reveals that the highest illicit drug abuse rates tend to be in Northeastern or Western states (Wright and Sathe 2005). Unlike alcohol abuse, illicit drug abuse does not seem to be concentrated in rural parts of the country. There are state and regional variations in alcohol and illicit drug abuse, but whether or not there are variations by rural or urban residency, specifically, is not clear from state-by-state comparisons.

Rural and urban substance abuse

Even though rural illicit drug use remains lower than urban use, the larger issues of rural or urban substance abuse and the types of substances abused (for example, alcohol, marijuana, or stimulants) are more complex. Table 1 lists percentages of rural and urban residents over the age of twelve who, in 2003, reported substance abuse during the previous year. In both rural and urban areas, the rate of alcohol abuse was higher than for all other substances (over 7 percent), and the second most abused substance was marijuana (less than 2 percent). Regardless of substance, differences between rural and urban abuse were statistically nonsignificant. Even rates of stimulant abuse (which includes meth) do not seem to differ by rural or urban residency. [3] If the 2003 NSDUH sample is representative of the population as a whole, we would expect that 68,000–137,000 rural residents age 12 and over (out of about 46.5 million) abused stimulants, and 695,000–886,000 abused marijuana, in the previous year.

Although rates of substance abuse may not differ by rural and urban residency for the general population, the rest of this report will show that certain groups in the population (like the rural unemployed) are especially troubled by certain types of substance abuse (like stimulant abuse). In general, a number of factors tend to be related to the abuse of alcohol and illicit drugs:

- demographic characteristics such as age, sex, and race;
- socioeconomic factors such as education, family income, and employment status;
- family configuration such as marital status, children in the household, and presence of parents in the household; and
- community-linked perceptions, such as perceived drug availability, perceived risk of substance use, and community cohesiveness.

Next, this report examines how these factors relate to substance abuse in rural America and explores whether or not there are patterns of behavior that are unique to rural populations.

[3] Stimulant abuse is defined as meeting criteria for DSM-IV abuse of amphetamines, which are known also as stimulants, "uppers," or "speed." Respondents are asked questions about "Methamphetamine, Desoxyn, or Methedrine that was not prescribed for [them] or that [they] took only for the experience or feeling it caused."

Patterns of Rural Substance Abuse

By age, sex, and race

Age is one of the most reliable predictors of substance use and abuse.

Generally speaking, levels of substance abuse tend to be greatest among young adults, and patterns in rural America are no exception. Roughly one in five young adults in rural America met criteria for alcohol or drug abuse in 2003, compared to 10 percent of youth and about 6 percent of adults (Figure 6a). If the NSDUH sample is representative of the population as a whole, we would expect that 1.2–1.3 million rural young adults (out of roughly 5.8 million) and 461,000–543,000 rural youth (out of roughly 5 million) had a substance abuse problem in 2003. Substance abuse varies by age, in part, because youths, young adults, and adults have different types of experiences and respond to those experiences in different ways. For rural youth, boredom might lead to experimentation with substances:

> Sprague is a community of just under 500 located in eastern Washington. The nearest town with any service is 24 miles away. There are no businesses open after 8 o'clock at night and no places of entertainment (video games, movies, bowling, etc.) at all. Due to the lack of entertainment, many young people resorted to mischievous forms of entertainment, causing vandalism, crime, and substance-related incidents to escalate. With nothing else to do, the pressure to join the party scene became extreme for many young people (Wilken 1997).

During young adulthood, newfound freedom from parental supervision, combined with a relative lack of important responsibilities, provide opportunities for further substance use and a greater potential for substance abuse. After young adulthood, substance abuse subsides, in part, because important responsibilities (like working full-time and being a spouse and parent) start to add up. However, stressful life events, such as a job loss, death in the family, or divorce, can trigger some adults to retreat to earlier patterns of substance abuse.

[4] Detailed analyses of all rural and urban comparisons are provided in Appendix Tables 2-6.

When we compare rural and urban rates of alcohol abuse, it becomes clear that rural youth have more problems with alcohol.[4] At ages 12 to 13, rural youth are more than twice as likely as urban youth to abuse alcohol. At 16 to 17 years old, about 13 percent qualify for alcohol abuse in rural America (compared to roughly 10 percent of urban youth). If the NSDUH sample is representative of the population as a whole, we would expect that 195,000–249,000 rural youth age 16–17 (out of roughly 1.7 million) had an alcohol abuse problem in 2003. By age 20 to 21, however, rural and urban alcohol abuse rates are essentially the same.

Among adults ages 26 and older, rural and urban substance abuse patterns seem to be generally similar: in both cases, the likelihood of substance abuse decreases with age. However, in 2003, rural adults tended to show higher levels of stimulant abuse than urban adults (Figure 6b). While it is unusual

Figure 6a: Substance abuse among rural residents by Age and Substance type in 2003

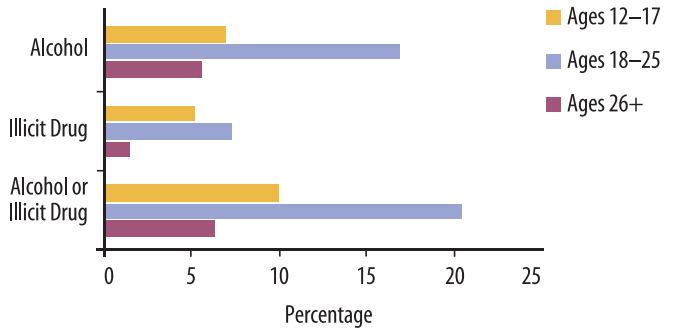
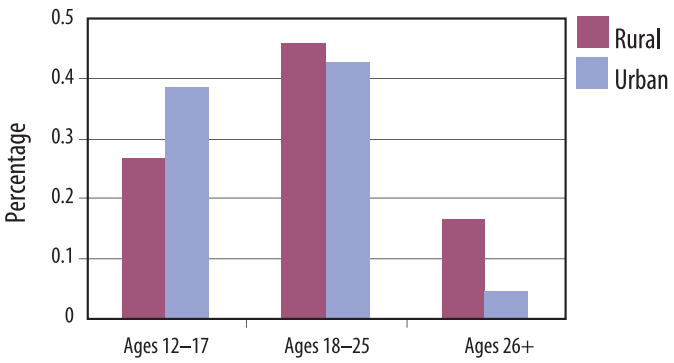


Figure 6b: Stimulant abuse among Rural/Urban U.S. Residents by Age in 2003



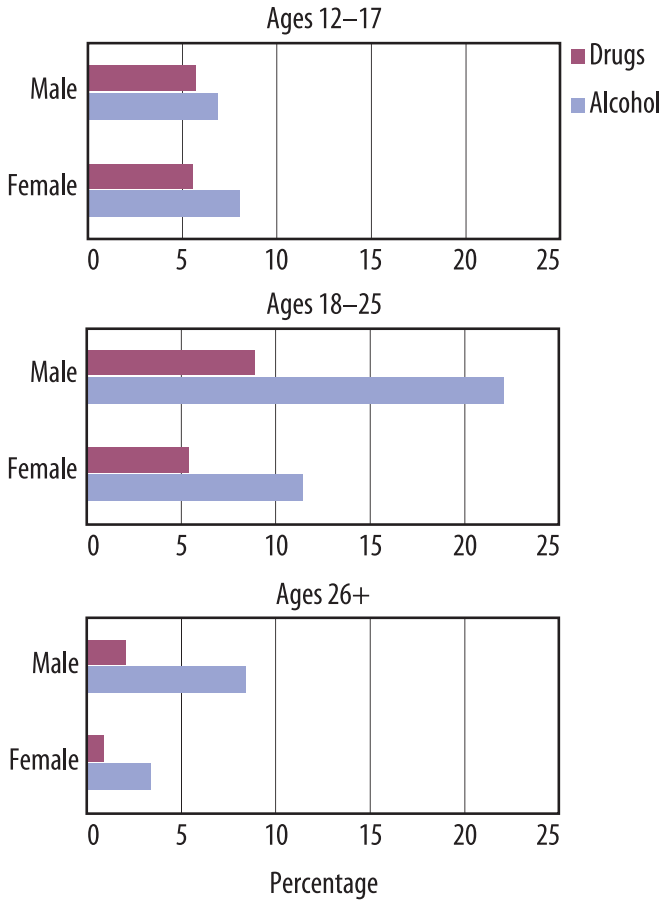
that rural adults would not "age out" of stimulant abuse at the same rate as urban adults, this difference may reflect a greater presence of meth in rural areas.

Sex differences emerge in young adulthood and continue into adulthood.

Boys and girls in rural areas are equally likely to meet criteria for substance abuse (the same pattern is observed among non-rural youth). According to the 2003 NSDUH, roughly 7 percent of youth abused alcohol and 5 percent abused illicit drugs. These rates are the same regardless of sex or residency (Figure 7). Yet a considerable sex gap in substance abuse appears once the cultural expectations of men and women change in young adulthood.

The 2003 NSDUH data showed that in rural America, men were roughly twice as likely to meet criteria for abuse of alcohol or other drugs as women were. Among rural young adults, more than one in five males (22 percent) met criteria for alcohol abuse in 2003; only 12 percent of females met alcohol abuse criteria. Again among rural young adults, 10 percent of males compared to 6 percent of females met criteria for illicit drug abuse.

Figure 7: Substance abuse among rural residents by age and sex in 2003



Although levels of substance abuse decrease with age, the sex gap remains constant into adulthood. These patterns are similar in rural and urban areas. In fact, rates of abuse differed between rural and urban areas in the case of only one particular substance: males in rural areas were more likely to abuse tranquilizers than males in urban areas (analyses not shown).

African Americans report the lowest rates of substance abuse, while Native Americans report the highest.

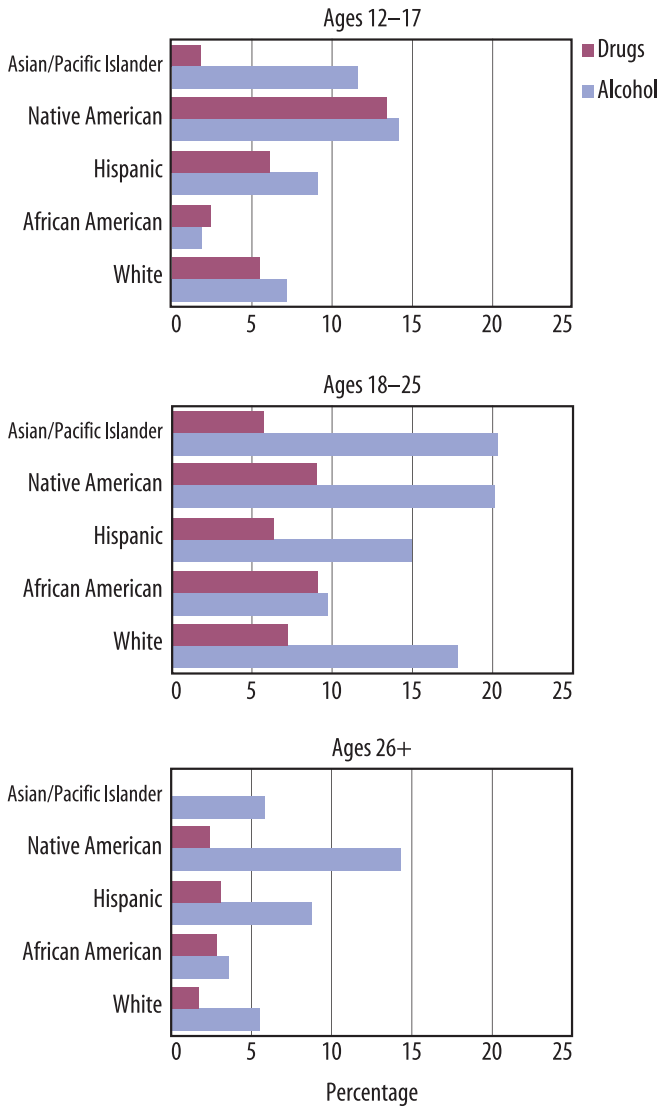
Variation in substance abuse by race is complex. Ethnic groups may differ with respect to various factors (like socioeconomic status, sense of community, or family composition) that can influence tendencies toward or away from substance abuse. These factors will be considered later in this report. For now, looking at the patterns in Figure 8, some important features stand out.

Across all age groups in rural America, African Americans reported the lowest rates of alcohol abuse. Even during young adulthood, when all groups' alcohol abuse levels are highest, only 10 percent of African Americans met criteria for alcohol abuse in 2003, compared to 20 percent of Native Americans and Asian/Pacific Islanders, 18 percent of Whites, and 15 percent of Hispanics. Alcohol abuse levels for rural youth also varied by race: 14 percent of Native American youth met criteria for alcohol abuse, compared to roughly 11 percent of Asian/Pacific Islanders, 9 percent of Hispanics, and 7 percent of Whites. Only 2 percent of African American youth qualified for alcohol abuse. In adulthood, rates dropped off for all groups except Native Americans—almost 14 percent of Native American adults abused alcohol. If the NSDUH sample is representative of the population as a whole, we would expect that 93,000–274,000 rural Native American adults (out of roughly 1.3 million) abused alcohol in 2003.

Illicit drug abuse also varied by race. In 2003, both African American and Asian/Pacific Islander youths showed the lowest rates of drug abuse (about 2 percent), while White and Hispanic youths' rates were each slightly over 5 percent. An alarming 13 percent of Native American youths met criteria for illicit drug abuse. Among rural young adults, there were not significant differences in illicit drug abuse, although rates ranged from roughly 6 percent for Hispanics and Asian/Pacific Islanders to about 9 percent for Native Americans. Among rural adults, roughly 2 percent of adults of all races abused illicit drugs, except for Asian/Pacific Islanders, who reported no drug abuse symptoms at all.

Rural and urban comparisons within each racial group show that, in 2003, reported rates of substance abuse were generally comparable. However, some differences did exist, although not in any distinct pattern. For instance, rural

Figure 8: Substance abuse among rural residents by age and race in 2003



Hispanic youth were more likely to abuse alcohol than urban Hispanic youth. In addition, African American adults in rural areas were less likely than their urban counterparts to meet criteria for alcohol abuse, and White young adults in rural areas were less likely to meet criteria for alcohol or drug abuse than their urban counterparts.

By education, income, and employment status.

Education levels are not related to rural alcohol abuse, but are associated with illicit drug abuse.

In rural America, education levels were not associated with differences in rates of alcohol abuse in 2003. That is, for both rural young adults and adults, alcohol abuse rates were comparable across low and high education levels (Figure 9a). In contrast, among urban residents, lacking a high school degree seemed to increase alcohol abuse risk.

Regarding illicit drug abuse in rural America, however, education did emerge as an important variable. Particularly among young adults, rates of drug abuse increased as level of education decreased. This pattern held true among adults, except where the abuse of stimulants (like meth) was concerned—educational attainment did not have any effect on stimulant abuse. Education, particularly high school graduation, seemed to protect against illicit drug abuse more so in rural than in urban areas, but again, this pattern did not hold true for stimulants (Figure 9b). This tells us that stimulant

Figure 9a: Substance Abuse Among Rural Residents by age, Substance Type, and Educational Attainment

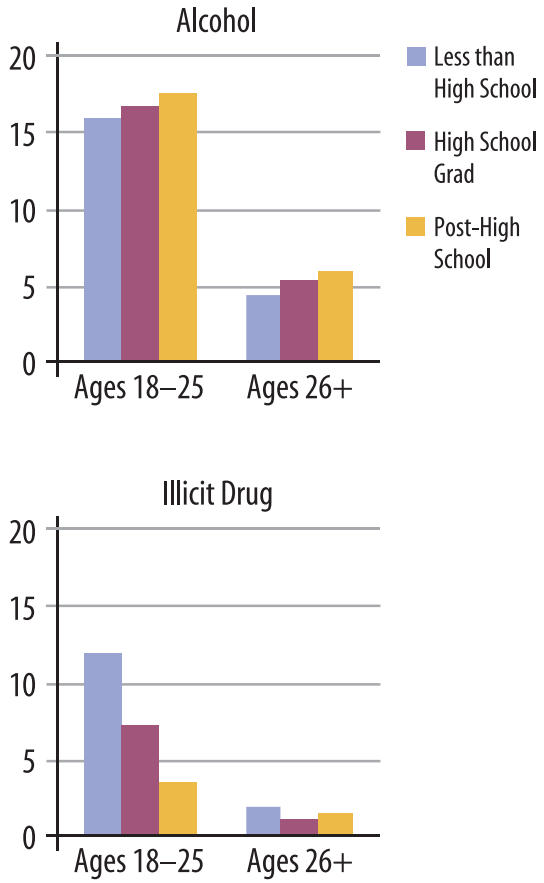
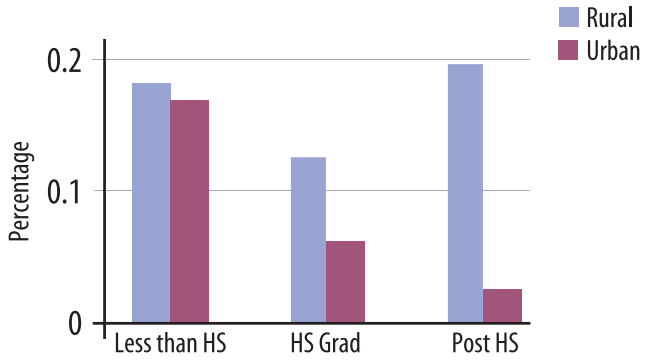


Figure 9b: Stimulant Abuse by Educational Attainment among Rural and Urban U.S. Adults ages 26 and older



abuse, and presumably meth abuse, may be uniquely problematic in rural America. Still, we need to keep in mind that overall stimulant abuse rates are quite low.

The relationship between income and substance abuse is complex.

In 2003, rural youth from low-income families were more no more likely to abuse alcohol than those with higher incomes; however, they were more likely to meet criteria for illicit drug abuse than those with higher incomes (Figure 10). Rural young adults in families with very low or very high incomes were more likely to meet criteria for alcohol abuse. However, income was not related to illicit drug abuse in this age group. Income was not related to alcohol abuse among rural adults, while high-income rural adults were somewhat less likely to abuse illicit drugs.

There is a strong relationship between unemployment and substance abuse.

In 2003, rural youth who were not in the work force were less likely than those who were unemployed or working to abuse alcohol.[5] Alcohol abuse rates were essentially the same for rural youth working full-time or part-time or for those who were unemployed (ranging from about 11 percent for full-time to 16 percent for unemployed) (Figure 11a). Rural young adults showed essentially the same rates of alcohol abuse (about 18 percent), regardless of their employment status. Among rural adults, alcohol abuse was highest among the unemployed and those employed full-time. Urban and rural results for alcohol abuse as it related to employment status were roughly the same.

[5] The U.S. Department of Labor defines "unemployed" as those who "do not have a job, have actively looked for work in the prior 4 weeks, and are currently available for work." Those "who have no job and are not looking for one" are counted as "not in the labor force." Many who are not in the labor force are in school, retired, have family responsibilities, or a physical or mental disability that prevents them from working.

Figure 10: Substance abuse among rural residents by Age and Family Income in 2003

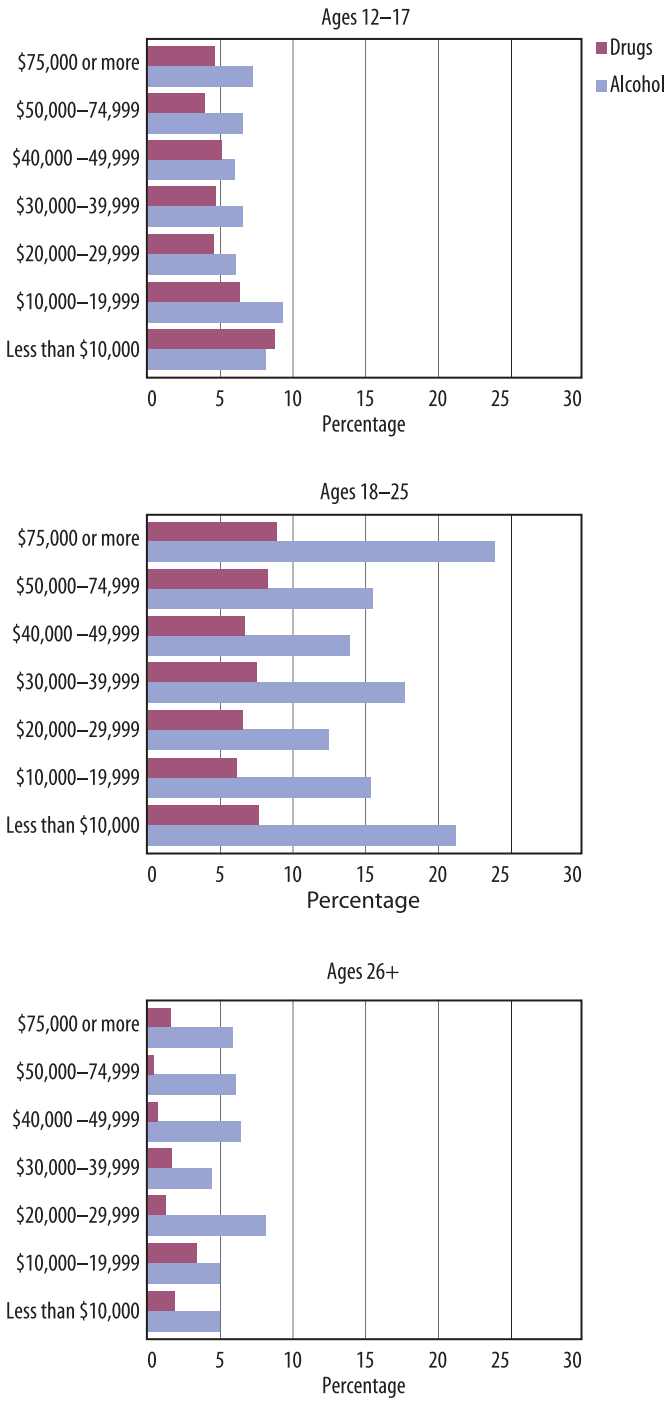
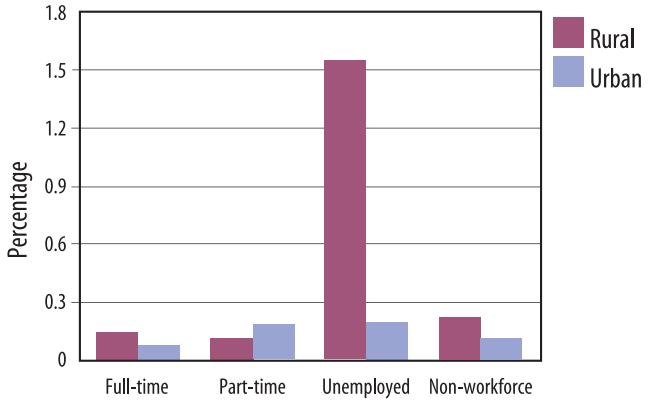


Figure 11a: Substance abuse among rural residents by Age and Employment Status in 2003

Figure 11b: Stimulant Abuse by Employment Status among Rural and Urban U.S. Residents Ages 18 and Older in 2003



Associations between employment status and illicit drug abuse told a somewhat different story. Unemployed youth and young adults in rural America showed very high rates of illicit drug abuse (roughly 16 percent for youth and 13 percent for young adults). Among rural adults, full-time workers and the unemployed were more likely to abuse illicit drugs than part-time workers and the non-workforce group. Together, these results reveal an important message: that unemployment status is strongly related to illicit drug abuse *regardless of age*.

In addition, unemployment status emerged as a particularly important factor for rural residents when stimulant abuse was considered alone. In fact, people who were unemployed in rural America were about *seven times more likely* than those unemployed in urban areas to meet criteria for stimulant abuse (Figure 11b). These findings are consistent with reports from public health workers, law enforcement officials, politicians, and the media that there is a unique methamphetamine problem in rural and small town America. Further, the link between unemployment and stimulant abuse suggests that persistently poor rural areas may be the settings in most trouble and in greatest need.

Unfortunately, the rural places most vulnerable to illicit drug markets often are the most likely to lack adequate prevention and treatment resources. Lost jobs, rising prices, and a depressed economy feed the feeling of hopelessness among residents who often are unable to afford health insurance or the care and treatment they need. A staff member from the Harlan County Listening Project, a group that has conducted over 400 in-depth interviews with rural Kentucky residents about the problems of drug abuse, reports hearing the same bleak refrain: "People are selling pills to pay their bills."

Hard Times in Harlan

By Bill Bishop

Most small town community plays celebrate a battle won, a crisis passed, an instance of little-engine-that-could determination that ends invariably in civic success. In the fall of 2005, however, Harlan, Kentucky put on a play about its struggles with drug addiction—a battle that the community has so far lost.

A key scene in Harlan's community drama, *Higher Ground*, became known as the "drug zombie dance." The chorus, playing the zombies, stumbles and staggers onto the stage chanting:

> *I've got a pain, I've got a pain,*
> *I've got a pain in my hip,*
> *in my back, in my neck…*
> *in my soul.*
> *And I'm searching for a cure*
> *to take my pain away.*

The zombies form a line to pass money to a bathrobe-clad man slumped in a chair. The man, his head lolling in a drugged stupor, tosses dollar bills into the air as police sirens begin to scream.

Harlan County lies at the extreme southeast corner of Kentucky. Harlan is the most famous coal county in the nation. In the 1930s, Harlan ("Bloody Harlan" back then) was the center of union organizing efforts by both the Communist Party USA and the United Mine Workers of America. In the 1960s, a revolt by unemployed Kentucky coal miners helped create the political momentum for the War on Poverty. In the 1970s, the county was the backdrop for the mine strike viewed by the nation in the Academy Award-winning documentary, *Harlan County, USA*.

People here still talk coal, about the big strip mines that have sheared off the tops of mountains and the new underground operations, created to satisfy the country's demand for cheaper energy. But more often they talk about drugs; in particular they tell stories about the painkiller OxyContin.

Signs of Harlan's struggles with addiction are everywhere. Just off Harlan Town's center square, a large Christian Church has strung a banner over its main entrance promoting "Recovery Night." Every Thursday, 200 to 300 people gather at the church for inspiration and twelve-step meetings. Up the Clover Fork, in the coal camp of Evarts, the medical clinic quietly opened a drug treatment program, quickly filled its twenty-two slots, and has a dozen people on its waiting list, according to clinic director, Dr. J.D. Miller.

"It's been said that every family here is touched by it," Miller says early one morning at a breakfast joint in this town of just one thousand people. "Everybody here has a close personal friend or a relative who is on OxyContin. That's true."

For example, he says, a few years ago the local mental health agency had to use vans to transport pregnant women from Harlan to a methadone clinic in Corbin, nearly two hours away and over 63 miles of mountain roads. At the time, Harlan had a population of only 32,000, but Dr. Miller said forty expectant mothers were enrolled in that one methadone program.

The "drug zombie" scene in *Higher Ground* hints at the source of Harlan's uniquely pervasive drug problem:

> "In the past, coal miners spent hours each day crouched in narrow mine shafts," concluded a 2002 report by the U.S. Department of Justice. "Painkillers were dispensed by mining camp doctors in an attempt to keep the miners working. Self-medicating became a way of life for miners, and this practice often led to abuse and addiction among individuals who would have been disinclined to abuse traditional illicit drugs." (Lexington Herald-Leader December 7, 2003)

OxyContin came to Harlan County because people here have pains—in hips, backs and elsewhere—left by working long hours underground. There are high rates of disability in the region. Appalachian and Ozark counties report levels of disability more than 60 percent above the national average.[1] A large billboard at the entrance to town promotes a local attorney specializing in disability claims. It depicts an old, bent, and particularly grizzled miner, and asks, "Broke Down?"

Dr. Miller says a concerted effort within the medical profession to treat pain coincided with an OxyContin sales force that targeted Appalachian physicians. Investigative reports by the Lexington Herald-Leader found that Purdue Pharma's marketing plan did indeed seek out physicians who already prescribed large amounts of painkilling drugs. In 1998, ac-

[1] http://www.prb.org/rfdcenter/50yearsofchange.htm

cording to the paper, portions of southern West Virginia and Eastern Kentucky "received more of OxyContin's competing painkillers per capita than anywhere else in the nation."

Richard Clayton, an addiction expert who heads the University of Kentucky's Center for Prevention Research, told the Lexington newspaper, "This may be the first epidemic—if it is an epidemic—that started in rural areas."

The drug graduated from prescribed painkiller to addictive drug when users discovered how to remove the time-release coating and use the drug to obtain a powerful and addictive high. Once OxyContin made the leap from disabled miners to the rest of the population, users began experimenting, mixing the painkiller with other drugs. The county was overwhelmed. A candidate for Harlan County sheriff, who was apparently negotiating a deal for protection, was shot and his body was burned by drug dealers. Coal attorneys tell of mine operators who fear that addicted miners working underground are a hazard, and that if their workers are regularly tested, the region's mines would lose a significant portion of their workforce.

For much of 2005, Joan Robinett led what she calls a "listening project" (funded by the Rockefeller Foundation, as well as by the play, *Higher Ground*). She and others have conducted over 450 interviews with residents, talking about drug abuse and their hopes for Harlan County. The stories are a mixture of hopelessness and horror.

A young single mother says:

> *The quality of life is so low. People look ahead and see the mountains blown off and the water ruined. And the drugs come around. When you deal with what people have to deal with here. I don't know how to say it…Me and my son were on our own and everywhere I went I began to feel like a failure. I never dreamed I would turn to drugs but it seemed to be the easy way out. The Xanax, at first I used it to help me cope, and later found if you took two you would feel good and later realized if I drank on it I felt really good. Before you know it I began to sell my home interior and then my furniture. Before you know it, I thought I couldn't live without it.*

A middle-aged woman with four years of college says:

> *Doctors and drug companies feed us drugs just like giving a baby candy…It's so bad that I can no longer trust some people in my own family. They steal from you—lie. You never know who is on drugs…people drooling…taking from their parents and children. It's awful.*

Living has never been particularly easy here. Besides the daily hardships, and the periodic disasters that visit the mines, rain on Harlan's steep slopes and narrow valleys regularly floods the coal camps that perch on the little flecks of flat land next to the creeks. Harlan's poverty rate for children (38 percent in 2003, according to the U.S. Economic Research Service) is more than twice the national average. Both the county government and schools have histories of corruption. The population is shrinking and the economy is really no better than it was a generation ago, or two or three.

The play *Higher Ground* doesn't shy away from any of these problems. But it was, in the end, a chronicle of survival about hope, in times that look anything but hopeful. At the close of the play, one of the characters says that it's getting ready to rain again and another says that they're ready. The character explains, "We ain't made of sugar."

Family and community context

Family matters.

According to the 2003 *NSDUH*, in rural areas alcohol and illicit drug abuse were much less common among married relative to non-married adults (Figure 12a). When stimulant abuse is considered alone, generally the rates of abuse are very low among married adults; however, married persons in rural areas are more likely than their urban counterparts to qualify for stimulant abuse (Figure 12b). Again, this suggests that there might be important and unique patterns of meth abuse in rural settings.

When children were living in the household, young adults were less likely to abuse alcohol in both rural and urban settings (Figure 13a). However, rural adults over age 25, were *more* likely to abuse alcohol if children were present (Figure 13b). When stimulant abuse was considered alone, rural adults over age 18 living with children in the household were more likely to abuse stimulants than their urban counterparts—once again, this suggests that meth may play a unique role in rural families and communities.

Among rural youth, alcohol abuse rates were higher if either parent was absent from the household than if a parent was present (Figure 14). In urban areas, alcohol abuse rates were about the same whether parents were present or not. However, urban youth were more likely to abuse illicit drugs if a parent was absent from the home than if a parent resided in the home. It seems that parent presence in rural America

Figure 12a: Substance abuse among rural residents by Age and Marital Status in 2003

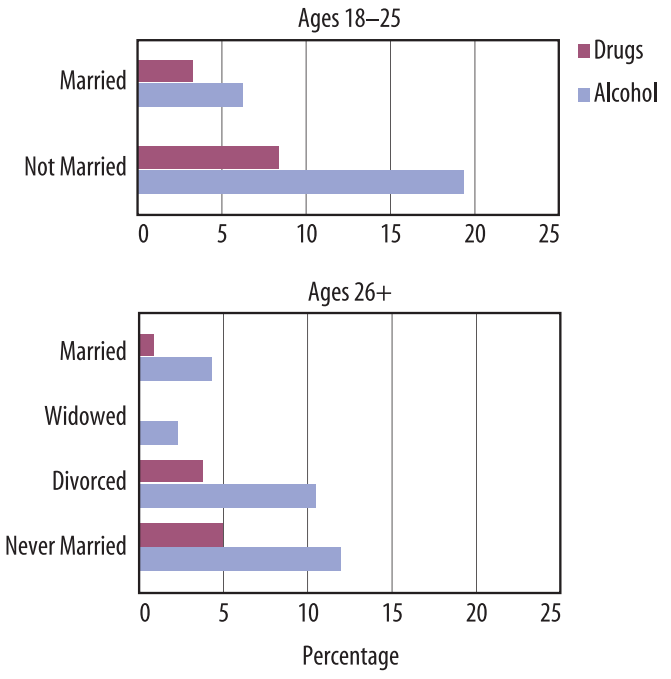


Figure 12b: Illicit Drug and Stimulant Abuse among Married individuals Ages 18 and Older by Rural and Urban Residency in 2003

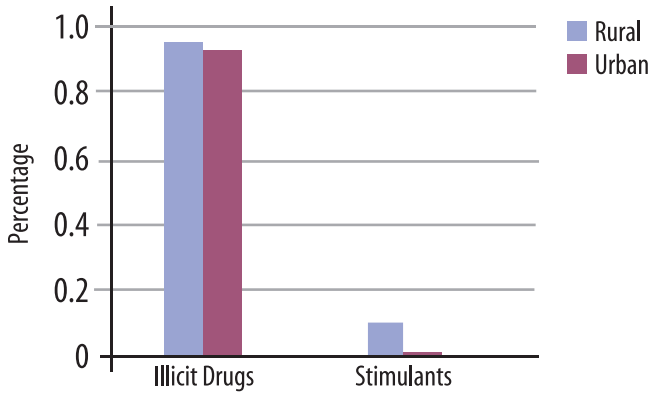


Figure 13a: Substance abuse among rural residents by Age and Children's Presence in Household in 2003

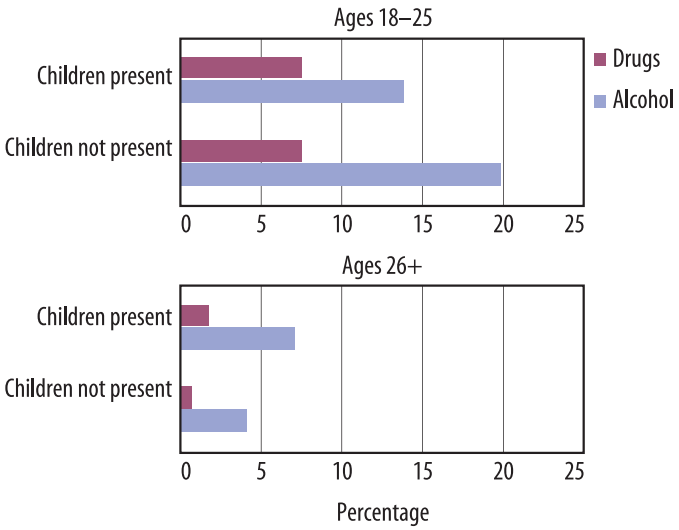
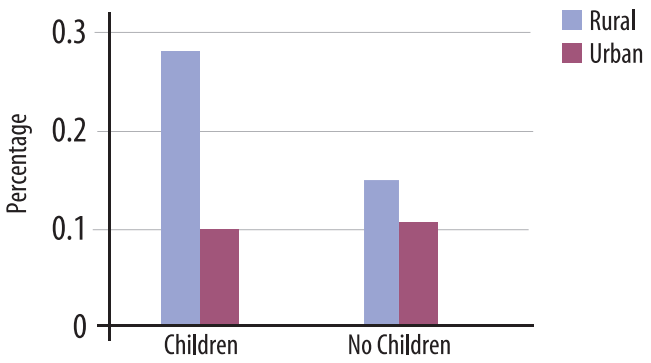
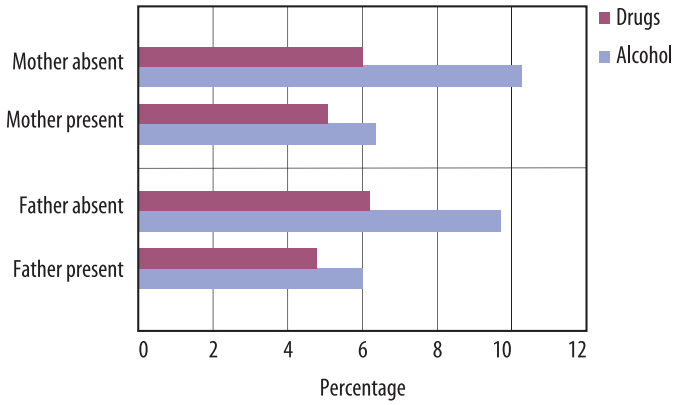


Figure 13b: Stimulant Abuse by Children's Presence in Household among Rural and Urban U.S. Residents Ages 18 and Older in 2003



tends to protect against alcohol abuse, while parent presence in urban areas tends to protect against illicit drug abuse.

Figure 14: Substance abuse among rural youth by Presence of Mother and Father in 2003



Community plays an important but complex role in substance abuse behaviors.

How residents feel about each other and how they interact within their communities can have profound effects on substance abuse. In general, a strong sense of community cohesiveness tends to reduce that community's risk for substance use problems. In 2003, rural young adults and adults felt a stronger sense of community than their urban counterparts.

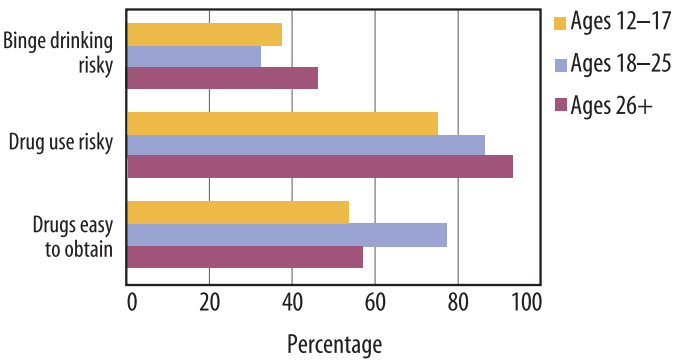
As mentioned earlier, however, the rates of alcohol abuse among youth in rural areas are elevated. This might be because, in rural America, heavy drinking is more often tolerated or considered a "norm." As Angeline Bushy, an expert in rural women's health care, explains:

> While a close-knit family can be highly supportive to someone with an emotional or substance abuse problem, in other cases, the family can hinder a sick person from seeking outside help. An overtly solicitous family also can develop a high tolerance or immunity to the dysfunctional behavior exhibited by a family member. In these situations, the impaired person comes to be viewed as normal, and others in the family do not notice as odd, idiosyncratic behaviors progress to pathology.
>
> As with a family, dysfunctional interpersonal dynamics also can occur in close-knit rural communities. For instance, residents in a small town may develop a tolerance toward certain lifestyle activities, especially in regard to consumption of alcohol… Secrecy is reinforced by the rule of silence: "What happens in the family—stays in the family" (Bushy 1997).

Perceptions about alcohol use among rural youth suggest that heavy drinking might be considered more "normal" in rural America. In 2003, youth in rural areas were significantly less likely than their urban counterparts to report that "binge" drinking was risky (36 percent rural compared to 39 percent urban).[6] Thirty-one percent of rural young adults felt that binge drinking was not risky behavior; 44 percent of adults felt the same way (Figure 15). Urban rates among young adults and adults were comparable.

Another important consideration in rural communities is the *availability* of illicit drugs. In 2003, roughly 55 percent of youth, 77 percent of young adults, and 58 percent of adults in rural areas felt that illicit drugs were easy to obtain. These rates are comparable to urban rates with one exception: adults in rural areas thought that illicit drugs were more readily available than adults in urban areas. As mentioned earlier, rural adults also were more likely than urban adults to meet criteria for stimulant abuse. It seems plausible, then, that rural adults see a greater availability of illicit drugs, in part, because of an increase in availability of meth in rural areas.

Figure 15: Rural attitudes about substance use risk and availability by age in 2003



[6] "Binge drinking" is defined as consuming 5 or more consecutive drinks on a single occasion.

Summary of the Major Findings

A number of general conclusions can be drawn about alcohol and illicit drug abuse in rural and small town America.

- Alcohol abuse far exceeds illicit drug abuse. The only group at an equally high risk for both is Native American youth.
- Alcohol abuse is a serious problem among rural youth, and this risk for alcohol abuse is exacerbated by parent absence from the household.
- Young adults show the highest rates of alcohol and illicit drug abuse, and it is in young adulthood that sex differences emerge. Twenty-two percent of young adult men have an alcohol abuse problem compared to 12 percent of young adult women. Nine percent of young adult men have a drug abuse problem compared to 6 percent of young adult women.
- Substance abuse rates for African Americans are consistently low and Native American rates are consistently high.
- Less educated young adults are more likely to have an illicit drug abuse problem.
- Unemployment appears to be an especially crucial marker for illicit drug abuse for all ages.
- Unmarried young adults and adults in rural areas are more likely to have alcohol and illicit drug abuse problems than are their married counterparts.

What about meth abuse?

While only tentative conclusions can be drawn about meth abuse specifically, stimulant abuse estimates, which include meth, suggest that there might be a unique pattern of meth abuse in rural and small town America.

- Adults in rural areas abuse stimulants at higher rates than adults in urban areas.
- While most illicit drug abuse decreases with educational attainment in rural America, education seems to have no effect on stimulant abuse.
- Stimulant abuse among the unemployed in rural America is seven times that of the urban unemployed.
- Married young adults in rural areas are more likely to abuse stimulants than married young adults in urban areas.
- Rural adults living in households with children are more likely to abuse stimulants than their urban counterparts.

Discussion

Implications

A number of implications can be derived from these findings.

There is a critical need for alcohol abuse treatment services, especially among rural youth. The maps in Figures 16 and 17 reveal that states with the highest rates of youth alcohol abuse have the greatest unmet need for alcohol treatment; these states tend also to be the most rural. In rural areas, overhead costs for treatment centers, law enforcement, and prevention programs are stretched thin over sparsely populated regions. Rural residents frequently must travel great distances and wait for months to be treated at the few, widely-spaced and under-staffed hospitals and health facilities available to them.

Drug-Rehabs.org is an online non-profit organization that works to connect those in need with drug and alcohol rehabilitation centers nationwide. A recent report from the organization addressed Maine's drug abuse situation: "Problems are more intense in Maine's sparsely populated counties, where the traditional jobs of logging, farming, and working in factories and mills are disappearing. Also disappearing is hope" (drug-rehabs.org 2005).

Illicit drug interventions should consider the unique meth problem in rural America. Meth is inexpensive and simple to make. This fact, combined with the recent influx of meth makers, the proliferation of meth labs, and a lack of adequate drug enforcement in rural areas, have left rural America vulnerable to meth abuse problems, especially in chronically poor areas. In addition, meth abuse may be uniquely patterned by age, unemployment, and family configuration in rural America. Therefore, illicit drug interventions developed in urban areas may not provide the most effective support for rural families.

The ability of law enforcement, public officials, and health professionals to manage treatment and other intervention programs for rural residents is hindered by the very characteristics that make rural areas unique: wide open spaces, limited funds, and a tradition of "taking care of our own." (Glenn-Moore 2004). High-density urban areas are more likely to have the funds, resources and infrastructure to treat substance abuse as primarily a public health issue, directing those with substance abuse problems to prevention and treatment programs and facilities.

Figure 16: Alcohol Abuse among Youth Ages 12-17 by State: Percentages, Annual Averages Based on 2002 and 2003 NSDUH (Source: Wright and Sathe 2005)

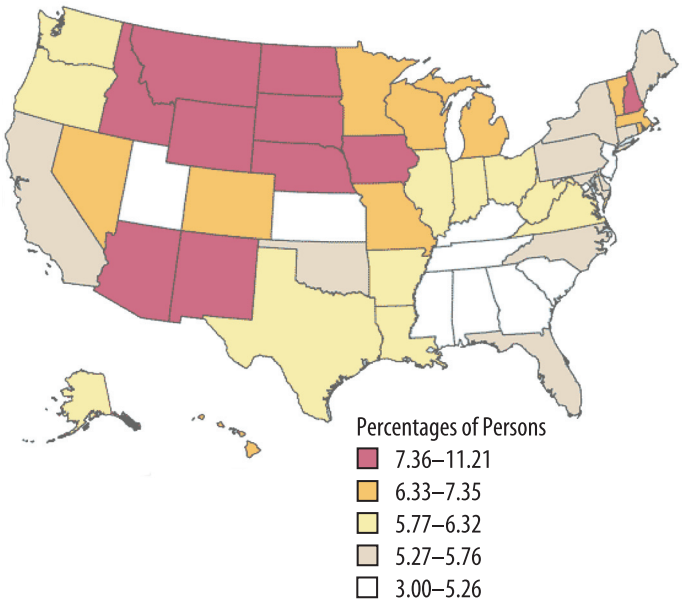
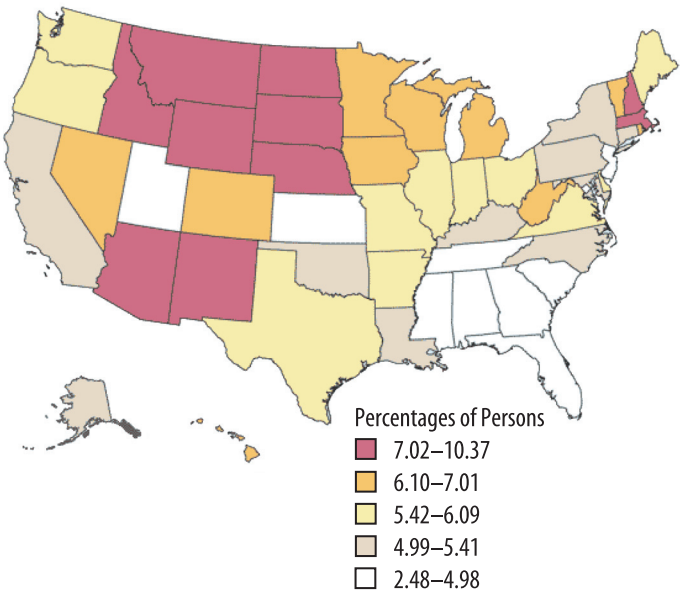


Figure 17: Unmet Need for Treatment for Alcohol Use among Youth Ages 12-17 by State: Percentages, Annual Averages Based on 2002 and 2003 NSDUH (Source: Wright and Sathe 2005)



On the other hand, while rural poverty rates have been at their lowest since 1980, rural communities still struggle to provide services to their growing and increasingly diverse populations. Rural population growth is slow but steady, and those moving in are often low-income immigrants or fixed-income retirees. Resources are regularly in short supply and drug problems are frequently addressed through the criminal justice system. In 2003, 47 percent of rural admissions to publicly-funded substance abuse treatment centers were referred by the criminal justice system, compared to 35 percent for urban abusers (DASIS 2005). This may be particularly relevant to African American populations, who, nationwide, constitute about 13 percent of monthly drug users, but represent 33 percent of those arrested for drug offenses (Glenn-Moore 2004).

Recommendations

Community interventions should attempt to draw on the existing resources of rural populations. For instance, residential stability (Bierman 1997) and a strong sense of community in rural areas contribute to interpersonal ties among adults. Close relationships have the potential to increase adult social support and the monitoring of youth behavior. This alleviates parent stress, thereby reducing substance abuse among youth *and* adults (Scaramella and Keyes 2001).

Yet residential stability also may discourage close-knit rural communities from drawing on support from "outsiders." It is important to evaluate and develop rural prevention and treatment programs with the individual community's needs and values in mind. Often rural families are reluctant to use treatment services (Bierman 1997), and negative experiences with ineffective programs only serve to make matters worse (Scaramella and Keyes 2001:248). As Scaramella and Keyes observe, "Program effectiveness may require sensitively tailoring efforts to the specific cultural milieu of a community as well as involvement of community leaders."

Drawing on the established strengths specific to rural communities—familiarity among residents, large extended families, religion and faith—and using these attributes to develop rural-specific programs of intervention, prevention, and treatment will generate the most effective strategies. Communities must modify old beliefs about substance abuse and dependence and the stigma they carry. They must proactively address substance abuse problems, not after-the-fact through the criminal justice system, but as a social and health issue that requires education, prevention, treatment and follow-up.

The most effective interventions are likely to be those that are developed, tested, and evaluated in rural settings (Clark et al. 2002). Most prevention programs have not been implemented in rural areas—exceptions include *The Fast Track Program* (Conduct Problems Research Group 1992), the *Strengthening Families Programs* (e.g., Kumpher, Molgaard, and Spoth 1996), and *Preparing for the Drug Free Years* (Spoth and colleagues in Iowa). In keeping with some of the findings of this report, studies of the effectiveness of such programs show that family processes are crucial for reducing substance use among rural youth. In addition, these types of programs seem to be cost-effective (Spoth, Guyll, and Day 2002:219). Successful programs are those that accommodate the entire community, drawing on all segments of that community's resources. Finally, education and other prevention strategies should target not just adolescents and young adults, but rural community members of all ages.

Appendix Tables

Table 1: Percentage of U.S. State Populations that are Rural

STATE	ABBREVIATION	PERCENTAGE OF STATE RURAL	STATE RANK	2004 % NONMETRO
United States	US	16.5		0
District of Columbia	DC	0.0		
Wyoming	WY	69.5		1
Vermont	VT	67.1		2
Montana	MT	65.1		3
South Dakota	SD	56.7		4
Mississippi	MS	56.6		5
North Dakota	ND	54.1		6
Iowa	IA	45.5		7
West Virginia	WV	45.1		8
Nebraska	NE	43.4		9
Kentucky	KY	43.4		10
Maine	ME	41.8		11
Arkansas	AR	41.8		12
New Hampshire	NH	37.7		13
Kansas	KS	37.3		14
Oklahoma	OK	36.8		15
Idaho	ID	36.1		16
New Mexico	NM	35.4		17
Alaska	AK	34.3		18
North Carolina	NC	31.0		19
Alabama	AL	29.2		20
Hawaii	HI	28.8		21
Wisconsin	WI	27.7		22
Minnesota	MN	27.6		23
Tennessee	TN	27.4		24
Missouri	MO	27.0		25
Louisiana	LA	25.0		26
South Carolina	SC	24.7		27
Oregon	OR	23.0		28
Indiana	IN	22.5		29
Delaware	DE	20.7		30
Georgia	GA	19.6		31
Ohio	OH	19.5		32
Michigan	MI	18.6		33
Pennsylvania	PA	16.0		34
Virginia	VA	14.6		35
Colorado	CO	14.1		36
Illinois	IL	13.3		37
Texas	TX	13.2		38
Washington	WA	12.5		39
Utah	UT	11.4		40
Arizona	AZ	11.0		41
Nevada	NV	10.4		42
Connecticut	CT	8.7		43
New York	NY	8.1		44
Florida	FL	6.3		45
Maryland	MD	5.2		46
California	CA	2.3		47
Massachusetts	MA	0.4		48
New Jersey	NJ	0.0		49
Rhode Island	RI	0.0		50

Table 2: Substance Abuse/Dependence[A] within Age Category by Rural/Urban[B] Residency among U.S. Residents Ages 12 and Older (Percentage Scores, 2003)

	Ages 12-17		Ages 18-25		Ages 26 and Older	
	Rural	Urban	Rural	Urban	Rural	Urban
Alcohol	6.96	5.66**	16.94	17.43	5.60	6.18
Cocaine	.37	.30	1.25	1.22	.49	.57
Hallucinogen	.51	.39	.31	.45	.04	.03
Heroin	.07	.04	.13	.13	.02	.09
Inhalant	.39	.39	.04	.15	.02	.01
Marijuana	3.99	3.92	5.55	6.07	.76	.77
Pain Reliever	1.21	1.05	1.34	1.02	.32	.44
Sedative	.06	.18	.02	.07	.03	.04
Stimulant	.27	.39	.46	.43	.17	.05*
Tranquilizer	.38	.37	.61	.37	.14	.09
Any Illicit Drug	5.16	5.20	7.30	8.01	1.52	1.69
Alcohol or Drug	9.98	8.74*	20.53	21.30	6.41	7.21
N	5,139	13,065	4,826	13,557	5,120	13,523

Note: N = 55,230. Presented are weighted percentage estimates based on data from the National Survey on Drug Use and Health, 2003.

[A] Substance abuse/dependence designations are estimated based on DSM-IV diagnostic criteria.

[B] Rural = non-MSA residents; urban = MSA residents.

* $p < .05$ ** $p < .01$ *** $p < .001$ (based on within-category logistic regression estimates)

Table 3. Alcohol and Illicit Drug Abuse/Dependence[A] among Rural and Urban[B] U.S. Youth (Ages 12 to 17) by Demographic, Socioeconomic, and Family Status (2003, Percentage Estimates)

	RURAL		URBAN	
	Alcohol	Illicit Drug	Alcohol	Illicit Drug
Sex				
Male	6.67 %	5.23	5.46	5.52
Female	7.26	5.10	5.87	4.86
	ns	ns	ns	ns
Age (in years)				
12 to 13	2.11	1.46	1.02*	1.30
14 to 15	5.36	4.82	5.52	5.31
16 to 17	13.28	9.05	10.66*	9.18
	p < .001	p < .001	p < .001	p < .001
Race/Ethnicity				
White	6.97	5.24	6.90	5.92
African-American	2.10	2.27	1.99	3.50
Hispanic	8.91	5.65	4.89*	4.36
Native American	14.15	12.91	12.76	12.38
Asian/Pacific Islander	11.36	1.82	4.14	3.45
Mixed Race/Ethnicity	12.99	8.54	9.89	9.80
	p < .001	p < .001	p < .001	p < .001
Total Family Income				
Less than $10,000	7.64	8.58	4.60	7.23
$10,000 to $19,999	9.16	6.22	4.47**	4.75
$20,000 to $29,999	6.03	4.78	5.27	5.42
$30,000 to $39,999	6.61	4.94	5.42	6.05
$40,000 to $49,999	6.18	5.03	5.08	5.67
$50,000 to $74,999	6.56	4.01	7.15	5.28
$75,000 or more	6.94	4.81	5.82	4.40
	ns	p < .05	p < .05	ns
Employment Status				
Full-time	10.84	3.54	16.96	12.29††
Part-time	12.53	9.54	10.90	8.77
Unemployed	16.24	16.19	13.20	13.70
Non-workforce	5.03	3.59	4.01*	3.87
	p < .001	p < .001	p < .001	p < .001
Mother in Household				
Yes	6.61	5.07	5.59*	4.96
No	10.31	6.07	6.44*	7.93
	p < .05	ns	ns	p < .001
Father in Household				
Yes	6.01	4.77	5.37	4.33
No	9.60	6.24	6.47**	7.62
	p < .001	ns	ns	p < .001

Note: Presented are weighted percentage estimates based on data from the National Survey on Drug Use and Health, 2003. Analyses are conducted on youth ages 12 to 17 (N = 18,204).

[A] Substance abuse/dependence designations are estimated based on DSM-IV diagnostic criteria.

[B] Rural = non-MSA residents; urban = MSA residents.

ns denotes nonsignificant statistical within-group differences at p < .05.

* p < .05 ** p < .01 *** p < .001 (rural/urban alcohol abuse/dependence contrasts)

† p < .05 †† p < .01 ††† p < .001 (rural/urban drug abuse/dependence contrasts)

Table 4. Alcohol and Illicit Drug Abuse/Dependence[A] among Rural and Urban[B] U.S. Young Adults (Ages 18 to 25) by Demographic, Socioeconomic, and Family/Community Context (2003, Percentage Estimates)

	RURAL		URBAN	
	Alcohol	Illicit Drug	Alcohol	Illicit Drug
Sex				
Male	22.38 %	9.10	22.15	9.90
Female	11.61	5.53	12.64	6.10
	p < .001	p < .001	p < .001	p < .001
Age (in years)				
18 to 19	18.20	10.16	15.03*	11.32
20 to 21	17.68	7.30	18.31	8.76
22 to 23	17.35	6.04	18.67	6.11
24 to 25	13.69	4.62	17.79*	5.69
	p < .001	p < .001	p < .05	p < .001
Race/Ethnicity				
White	17.86	7.12	19.99*	9.03††
African-American	9.89	8.59	10.51	6.47
Hispanic	15.02	6.28	15.28	6.89
Native American	20.12	9.20	24.92	12.47
Asian/Pacific Islander	20.20	5.79	14.36	4.64
Mixed Race/Ethnicity	23.07	13.73	25.78	11.81
	p < .001	ns	p < .001	p < .05
Education				
Pre-High School	16.08	11.50	16.51	11.18
High School Grad	16.81	7.38	15.72	8.18
Post-High School	17.69	4.25	19.08	6.44††
	ns	p < .001	p < .001	p < .001
Total Family Income				
Less than $10,000	20.61	7.72	19.53	7.31
$10,000 to $19,999	15.38	6.25	16.83	8.54
$20,000 to $29,999	11.98	6.64	16.56*	7.45
$30,000 to $39,999	17.55	7.22	16.48	7.73
$40,000 to $49,999	13.67	6.76	17.39	8.26
$50,000 to $74,999	15.16	8.09	15.67	7.05
$75,000 or more	24.23	8.82	18.73	9.44
	ns[C]	ns	ns[C]	ns
Employment Status				
Full-time	16.52	6.93	18.21	7.44
Part-time	17.75	7.45	17.94	7.84
Unemployed	20.90	13.41	18.81	11.70
Non-workforce	15.42	5.60	14.29	7.97†
	ns	p < .001	ns	p < .001
Married				
Yes	6.43	3.10	7.40	2.90
No	19.32	8.25	19.11	8.87
	p < .001	p < .001	p < .001	p < .001
Child(ren) in Household				
Yes	13.39	7.25	13.38	7.60
No	19.85	7.33	20.32	8.31
	p < .001	ns	p < .001	ns

Note: Presented are weighted percentage estimates based on data from the National Survey on Drug Use and Health, 2003. Analyses are conducted on young adults ages 18 to 25 (N = 18,383).

[A] Substance abuse/dependence designations are estimated based on DSM-IV diagnostic criteria.

[B] Rural = non-MSA residents; urban = MSA residents.

[C] Separate tests for a curvilinear association (not shown) revealed statistically significant effects.

ns denotes nonsignificant statistical within-group differences at p < .05.

* p < .05 ** p < .01 *** p < .001 (rural/urban alcohol abuse/dependence contrasts)

† p ≤ .05 †† p < .01 ††† p < .001 (rural/urban drug abuse/dependence contrasts)

Table 5. Alcohol and Illicit Drug Abuse/Dependence[A] among Rural and Urban[B] U.S. Adults Ages 26 and Over by Demographic, Socioeconomic, and Family Variables (2003, Percentage Estimates)

	RURAL		URBAN	
	Alcohol	Illicit Drug	Alcohol	Illicit Drug
Sex				
Male	8.13 %	2.29	9.07	2.19
Female	3.31	.81	3.54	1.24
	p < .001	p < .001	p < .001	p < .001
Age (in years)			-	
26 to 29	12.96	5.26	13.52	5.14
30 to 34	12.02	3.60	9.67	2.31
35 to 49	6.80	1.86	7.05	2.45
50 to 64	3.93	.84	3.79	.35
65 and over	1.34	—	1.97	.02
	p < .001	p < .001	p < .001	p < .001
Race/Ethnicity				
White	5.51	1.35	6.19	1.61
African-American	2.96	2.64	6.83*	2.24
Hispanic	8.25	2.64	6.59	1.77
Native American	13.85	1.99	16.64	4.20
Asian/Pacific Islander	5.79	—	3.58	.98
Mixed Race/Ethnicity	7.93	2.79	4.05	3.29
	p < .01	ns	p < .01	ns
Education				
Pre-High School	5.25	2.47	7.24	2.69
High School Grad	5.49	1.16	6.13	1.91
Post-High School	5.91	1.33	5.91	1.30
	ns	ns	ns	p < .001
Total Family Income				
Less than $10,000	4.96	2.23	6.66	3.75
$10,000 to $19,999	5.02	2.96	6.73	2.30
$20,000 to $29,999	7.24	1.29	7.36	2.41
$30,000 to $39,999	4.12	1.72	7.42**	2.25
$40,000 to $49,999	6.15	.61	6.25	1.18
$50,000 to $74,999	5.99	.42	5.77	1.39†
$75,000 or more	5.31	1.74	5.13	1.00
	ns	p < .05	p < .01	p < .001
Employment Status				
Full-time	8.13	2.02	7.46	1.89
Part-time	4.00	.83	5.40	1.40
Unemployed	11.58	3.58	11.30	3.50
Non-workforce	1.87	.81	3.22*	1.23
	p < .001	p < .05	p < .001	p < .01
Marital Status				
Married	4.28	.88	4.32	.88
Widowed	1.50	—	.73	.52
Divorced	10.37	3.19	9.35	3.23
Never Married	11.72	4.97	13.23	4.09
	p < .001	p < .001	p < .001	p < .001
Child(ren) in Household				
Yes	7.11	2.02	5.92	1.94
No	4.70	1.21	6.37**	1.52
	p < .001	ns	ns	ns

Note: Presented are weighted percentage estimates based on data from the National Survey on Drug Use and Health, 2003. Analyses are conducted on adults ages 26 and older (N = 18,643).

[A] Substance abuse/dependence designations are estimated based on DSM-IV diagnostic criteria.

[B] Rural = non-MSA residents; urban = MSA residents.

ns denotes nonsignificant statistical within-group differences at p < .05.

* p < .05 ** p < .01 *** p < .001 (rural/urban alcohol abuse/dependence contrasts)

† p ≤ .05 †† p < .01 ††† p < .001 (rural/urban drug abuse/dependence contrasts)

Table 6. Stimulant Abuse/Dependence[A] among Rural and Urban[B] U.S. Residents Ages 12 and Over by Selected Demographic, Socioeconomic, and Family Variables (2003, Percentage Estimates)

	AGES 12 TO 17		AGES 18 TO 25		AGES 26 PLUS	
	Rural	Urban	Rural	Urban	Rural	Urban
Sex						
Male	.34	.30	.42	.47	.27	.05*
Female	.21	.49	.50	.40	.09	.05
	ns	ns	ns	ns	ns	ns
Education						
Pre-High School	—	—	1.08	.66*	.18	.17
High School Grad	—	—	.43	.49	.14	.06
Post-High School	—	—	.06	.29	.21	.02**
			p < .001	ns	ns	p < .01
Employment Status						
Full-time	.00	.79	.35	.35	.11	.04
Part-time	.58	.64	.38	.34	.00	.13
Unemployed	1.63	.86	1.56	.40	1.59	.12*
Non-workforce	.13	.31	.38	.77	.22	.03*
	p < .001	p < .01	p < .01	p < .05	p < .01	ns
Married						
Yes	—	—	.61	.13	.11	.00***
No	—	—	.43	.49	.30	.14
			ns	p < .05	ns	p < .001
Divorced						
Yes	—	—	—	—	.68	.19
No	—	—	—	—	.09	.03
					p < .05	p < .01
Child(ren) in Household						
Yes	—	—	.67	.38	.22	.16*
No	—	—	.29	.47	.15	.05
			ns	ns	ns	ns
Mother in Household						
Yes	.28	.35	—	—	—	—
No	.24	.85†	—	—	—	—
	ns	p = .061				

Note: N = 55,230. Presented are weighted percentage estimates based on data from the National Survey on Drug Use and Health, 2003.
[A] Substance abuse/dependence designations are estimated based on DSM-IV diagnostic criteria.
[B] Rural = non-MSA residents; urban = MSA residents.
ns denotes nonsignificant statistical within-group differences at p < .05.
† p = .051 * p < .05 ** p < .01 *** p < .001 (rural/urban stimulant abuse/dependence contrasts)

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