



Drug-Facilitated Rape: Looking for the Missing Pieces

by Nora Fitzgerald and K. Jack Riley

More than 430,000 sexual assaults occur annually in the United States, according to victimization surveys.¹ Many of these assaults involve alcohol and drugs,² which are often used voluntarily by both victim and offender.^{3,4} But in the mid- and late 1990's, ethnographers and rape crisis centers began hearing reports of drugs, often referred to as "roofies" and "liquid ecstasy," being administered clandestinely to immobilize victims, impair their memory, and thus facilitate rape. Two drugs in particular were mentioned in these reports: Rohypnol (the pharmaceutical trade name for flunitrazepam) and GHB (gamma-hydroxybutyrate).

These drugs can produce loss of consciousness and the inability

to recall recent events. Victims may not be aware that they have ingested drugs or that they have been raped while under the influence of drugs.⁵ Reports of such assaults and increases in the recreational consumption of the drugs used in these assaults have brought drug-facilitated rape into sharp focus in recent years.

This article summarizes findings about drug-facilitated rape learned by researchers at the U.S. Depart-

ment of Justice in response to a request from the Attorney General for more information about this new phenomenon. (See "How This Article Came to Be.")

What Are Rape-Facilitating Drugs?

Sexual assault victims who believe drugs were surreptitiously given to them typically report remembering sensations of drunkenness that do not correspond with the amounts of alcohol consumed, unexplained gaps in memory, altered levels of consciousness, and unexplainable signs of physical trauma. The most commonly implicated drugs are Rohypnol and GHB.

Rohypnol, or flunitrazepam, belongs to a class of drugs called benzodiazepines and is approved for use in 80 countries, but not in the United States or Canada. It is available only in pill form, is tasteless, odorless, and colorless, and dissolves to some degree in liquid.

Benzodiazepines are used primarily to produce sedation, sleep, or muscle relaxation; to reduce seizures and anxiety; and to produce anterograde amnesia, a desired effect for some surgical procedures. *Anterograde amnesia* is a condition in which events that occurred during the time the drug was in effect are forgotten, in contrast to *retrograde amnesia*, in which events prior to the intervening agent are forgotten.

Rohypnol mentally and physically incapacitates an individual, particularly when used in combination

about the authors

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How This Article Came to Be

In December 1997, the U.S. Attorney General directed the Department of Justice to assess the problems posed by drugs being used to facilitate rape. A working group chaired by NIJ Director Jeremy Travis and representatives from several other Justice Department agencies began meeting regularly to structure the inquiry and review progress.

The group's overarching objective was to assess the state of knowledge about drug-facilitated rape and report back to the Attorney General within several months.

The group's first step was to determine how often drug-facilitated rape occurs. There are no national statistics for this offense (such as would be provided by the *Uniform Crime Reports*, the *National Criminal Victimization Survey*, or the National Judicial Reporting Program), so the group conducted a thorough review of other, nonnational-level research. This search revealed that no empirical data exist to answer the question.

The investigation then turned to a number of other data sources representing different perspectives: ethnographers, the print media, Internet-based data, law enforcement, victim advocates, policymakers, and the pharmaceutical industry. The search uncovered a considerable amount of conflicting information amid differing viewpoints.

The working group learned a great deal from its investigation but could draw no conclusions beyond a clear recognition that the incidence of this offense is extraordinarily difficult to measure, that existing indicators are incapable of monitoring the problem, and that the true magnitude of the problem cannot be known with certainty from the scientific methods that have been used to date.

To learn how to obtain a copy of the full report, see "For More Information" on page 15.

Description of Data Sources

Monitoring the Future (MTF): This ongoing survey of 8th, 10th, and 12th graders uses a national probability sample. Sponsored by the National Institute on Drug Abuse. Visit <http://www.monitoringthefuture.org>.

Drug Abuse Warning Network (DAWN): DAWN records instances of emergency room visits and deaths related to particular drugs. Sponsored by the Substance Abuse and Mental Health Services Administration. Visit <http://www.samhsa.gov> and <http://www.health.org/pubs/dawn/index.htm>.

Community Epidemiology Working Group (CEWG): This ethnographic reporting system, in place in 21 metropolitan areas, supplements findings from national drug data systems. Sponsored by the National Institute on Drug Abuse. Visit <http://www.nida.nih.gov>.

Pulse Check: This ethnographic reporting system covers 20 metropolitan areas. Sponsored by the White House's Office of National Drug Control Policy. Visit <http://www.whitehousedrugpolicy.gov>.

with alcohol, and is capable of producing anterograde amnesia.

GHB, a drug first synthesized in the 1920's, occurs naturally in the human body in minute amounts. It was under development as an anesthetic agent in the late 1950's and early 1960's, but no commercial products were developed from these efforts. Until the FDA banned the drug in 1990, it was available through health food stores and marketed as both a sleep aid and as a body-building supplement. Several vendors distributed products containing GHB under trade names such as "Gamma Hydrate" and "Somatomax PM."

GHB is marketed in some European countries as an adjunct to anesthesia

and currently is being tested for treatment of narcolepsy as well as alcohol addiction and withdrawal (with mixed results) in Europe and the United States.⁶

How Common Is Drug-Facilitated Rape?

No one really knows how common drug-facilitated rape is because today's research tools do not offer a means of measuring the number of incidents. However, recent findings from ethnographic research and school-based surveys can provide insight into the voluntary use of these drugs.

Flunitrazepam first appeared in early warning ethnographic systems in December 1993, when it was reported among Miami high school students.

By 1995, the Community Epidemiology Working Group (CEWG) found that use of Rohypnol was spreading in Florida and Texas. Pulse Check reported Rohypnol use was rising, particularly among youth and young adults. Ethnographers in Florida and Texas reported that local law enforcement agents were seizing more Rohypnol tablets, often still in the manufacturer's packaging.

In 1996, Monitoring the Future (MTF) began tracking Rohypnol. In 1999, MTF found that 0.5 percent of 8th graders and 1.0 percent of 10th and 12th graders had reported using Rohypnol in 1998, a level slightly below those found a year earlier.⁷ Such rates appear low in comparison to marijuana or amphetamine use, but they are not trivial—10th and 12th graders report similar levels of heroin use.⁸

In 1997, Pulse Check noted that although Rohypnol continued to be available in Florida and Texas, distribution had slowed.

In 1998, Texas' statewide student survey, which uses the same methodology and many of the same items as MTF, found that 1.3 to 2.1 percent of Texas students in grades 8 to 12 reported use of Rohypnol during the school year.⁹ Later in 1998, Pulse Check reported that Rohypnol was in use in Florida, Hawaii, Minnesota, and Texas.

Mention of widespread recreational use of GHB only recently has been reported by CEWG in December 1997. In winter 1998, Pulse Check reported use of GHB in many urban areas.

The Drug Abuse Warning Network (DAWN) also has captured information about GHB because of overdoses. The Drug Enforcement Administration has documented approximately 650 overdoses and 20 deaths related to GHB. MTF added questions about GHB to its year 2000 survey.

Available law enforcement statistics on seizures and trafficking (primarily from the Drug Enforcement Administration) tend to corroborate the ethnographic and survey data.

Ethnographic measures may not represent the true scale of the drugs' use, however, and more rigorous scientific measures have not been in place long enough to give researchers the ability to project accurate trends.

Another factor complicating science's ability to measure the incidence and prevalence of these drugs is the lack of law enforcement evidence. Investigations of suspected drug-facilitated assaults often turn out to be inconclusive because many victims do not seek assistance until hours or days later, in part because the drugs have impaired recall and in part because victims may not recognize the signs of sexual assault. By the time they do report a suspected assault, conclusive forensic evidence may have been lost. Even when

victims do suspect a drug-facilitated rape and seek help immediately, law enforcement agencies may not know how to collect evidence appropriately or how to test urine using the sensitive method required. (See further discussion of investigation

policies below and in the sidebar “Learning From Victims.”)

To add more complexity to the puzzle, school-based surveys seem to suggest that Rohypnol and GHB are consumed voluntarily, perhaps

increasingly so, because these drugs are cheap, easy to share, and easy to hide. Use appears to be concentrated among populations that also are at the highest risk of sexual assault, including middle school, high school, and college-age students.

Learning From Victims

by Gail Abarbanel, LCSW

Gail Abarbanel is the director of the Rape Treatment Center (RTC) at Santa Monica—UCLA Medical Center. Established in 1974, the RTC has treated more than 20,000 sexual assault victims. The RTC’s informational materials on drug-facilitated rape are distributed throughout the United States.

In late 1995, the Rape Treatment Center at Santa Monica—UCLA Medical Center began to see a new pattern in sexual assault cases. Victims were coming in who believed they had been drugged surreptitiously to incapacitate them for the purpose of sexually assaulting them. Many of these cases followed a similar pattern. Victims were in what seemed like a comfortable social environment, such as a restaurant, party, or club. Unbeknownst to them, someone slipped a drug into their drink. As they consumed the drink, they began to feel disoriented or sick. The next thing they remembered was waking up hours later, sometimes in a different location.

When they regained consciousness, some victims were unsure if they had been sexually assaulted. Others found signs that they had been: They were undressed; they had semen stains on their bodies and/or clothing; they had vaginal or anal trauma, such as soreness and/or lacerations. All of these victims reported significant memory impairment. Most could not recall

what was done to them, who participated, or how many people were present while they were unconscious. Some could remember brief, intermittent periods of awakening, during which they were aware of their surroundings but were unable to move or speak. They felt “paralyzed.” One victim said, “I came to and saw this guy on top of me about to rape me, but I couldn’t move my arms or legs. Then I passed out again.”

It was apparent to the staff at the Rape Treatment Center that some rapists were using a powerful new weapon to overpower, disable, and control their victims.

When victims began to report these crimes to the authorities, their cases often were dismissed. One victim was told, “He has his memory, you don’t have yours. There’s no evidence. The case is closed.”

In many instances, crucial physical evidence was never gathered from victims or crime scenes. For example, even when sexual assault evidentiary examinations were conducted, urine specimens needed to detect traces of the drugs were omitted because, in most jurisdictions, urine samples were not routinely included in standardized rape kits. As a result of these deficiencies, many victims felt revictimized by the agencies that were supposed to help them.

When these cases initially appeared, there was little information in the

professional literature or in news coverage about rape drugs or drug-facilitated sexual assaults. Victims were a crucial source of information. Their reports helped define this emerging crime pattern by identifying the characteristics of these crimes that distinguished them from other sexual assaults.

In addition, the problems victims encountered suggested an urgent need for a comprehensive, broad-based community response, including new protocols for hospitals, police departments, and crime labs; updated rape evidence kits; training for police officers, prosecutors, rape crisis centers, and other victim service providers; public policy and legislative reforms; research; and public education and prevention programs.

What Victims Have Taught Us

How Rape Drugs Facilitate Sexual Assaults. Rape drugs make it relatively easy for rapists to gain control of their victims. Perpetrators do not have to overcome any form of resistance. They do not have to use physical force. They do not have to threaten to harm the victim to get compliance. Nor do they have to be concerned about a victim’s screams attracting attention. The drugs they administer immobilize and silence the victim.

(continued on page 12)

How Victims are Prevented From Detecting Threats to Their Safety.

Victims of these crimes do not sense any threat to their safety when the assailant is incapacitating them. The “weapon” used to overpower and disable them is invisible. It is hidden in a drink.

How Victims are Inhibited From Exercising Self-Defense.

The ability to sense danger is critical to a person’s ability to implement self-defense strategies. When faced with the threat of being raped, most people employ one or more protective measures, such as verbally negotiating with the assailant, cognitively assessing their options, screaming, stalling, attempting to escape, and/or physically resisting. If these efforts fail to prevent the rape, victims may “fight back” in other ways. They may use their sensory and cognitive abilities to memorize details about the assailant’s physical characteristics, the location of the crime, and other factors that can later be used to aid authorities in apprehending and prosecuting the offender.

The incapacitating effects of rape drugs rob victims of their ability to use these coping strategies. One victim said, “Rape is never a fair fight, but I didn’t even have a chance to defend myself.”

How Rapists Can Appear to Be Rescuers.

When victims are drugged in places where other people are present, such as restaurants, clubs, bars, and parties, the rapist may appear to bystanders and witnesses to be a rescuer. The behavioral effects of rape drugs look very much like the effects of voluntary alcohol consumption. To onlookers, the victim may seem drunk. When the rapist carries or leads the victim to another location where the sexual assault will be committed, he may be viewed as “helping” or

transporting a vulnerable person to a safe place.

How Rape Drugs Affect Reporting Patterns.

Victimization surveys consistently indicate very low reporting rates among rape victims. Delayed reports also are common, particularly in acquaintance rapes. The reasons are well documented in the literature. In drug-facilitated rapes, additional factors may account for low and delayed reporting, including the immediate and residual effects of the drugs (the victim may be unconscious for several hours after the assault and may have hangover effects after regaining consciousness); feelings of guilt or self-blame because of prior voluntary ingestion of alcohol and/or drugs; confusion and uncertainty about what happened; and reluctance to make an accusation without personal knowledge or memory of the assault circumstances.

How Victims’ Inability to Recall What Happened Affects the System’s Response.

Many aspects of a rape investigation are facilitated by a victim’s ability to describe what happened. The victim’s narrative helps guide the medical/evidentiary examination and the police investigation. In addition, it may be an important consideration in prosecutor filing decisions and judgments about credibility. When victims of drug-facilitated rapes cannot give a complete narrative, they often encounter suspicion, disbelief, and/or frustration. Their inability to supply information that could assist the investigation and/or prosecution compounds their sense of helplessness.

How People Misjudge and Minimize Victims’ Trauma.

Because most victims of drug-facilitated rapes have no memory of the sexual assault, people may mistakenly minimize the trauma

they suffered. One victim was told, “You’re lucky you can’t remember, you won’t suffer as much as other victims.” For all rape victims, the loss of control experienced during an assault is profoundly traumatic. In drug-facilitated rapes, the additional deprivation of cognition during the assault, combined with anterograde amnesia afterwards, subjects the victim to an extreme form of powerlessness.

How Drugging Is a Unique Form of Trauma.

Many of the difficulties victims face in the aftermath of these assaults are due to the effects of the drugs given by offenders. The surreptitious drugging of a victim is, in and of itself, a cruel and criminal violation of the person. Some victims describe this aspect of the trauma as “mind rape.” The drugging should be recognized as a separate and distinct act of victimization in addition to any other acts of abuse and degradation to which the victim was subjected.

How Being Unable to Forget Compares With Being Unable to Remember.

In the aftermath of rape, most victims suffer acute stress disorder and post-traumatic stress disorder symptoms. One of the most disturbing symptoms is their inability to *forget* what happened. The trauma is reexperienced repeatedly. Victims commonly have recurrent, intrusive recollections of the rape, including thoughts, flashbacks, and nightmares. For victims of drug-facilitated rapes, this aspect of the aftermath may be experienced differently. Because they cannot *recall* what happened during a significant time period, they have to cope with a gap in their memory. They experience the horror, powerlessness, and humiliation of not knowing what was done to them. They can only imagine what happened. One victim said, “I would rather have the nightmare.”

Drug-facilitated rape may be initiated in social settings, like parties and clubs, not traditionally considered high-risk environments. Prevention strategies must consider reaching new audiences, such as bartenders, party hosts, cab drivers, and others who might frequent places where drug-facilitated rapes are initiated or who might see the victim immediately prior to the assault.

The good news is that public awareness about the drugs and their effects appears to be increasing.

What Is Being Done to Reduce Drug-Facilitated Rape?

Although current measuring methods do not reveal exactly how widespread drug-facilitated rape is, research does make it clear that the risk is real.

Since reports of drug-facilitated rape first started appearing, policymakers at the Federal level have moved to address the situation. One step was to improve enforcement at the U.S.-Mexican border of the ban on importation of flunitrazepam. Then in October 1996, President Clinton signed the Drug-Induced Rape Prevention and Punishment Act, which provides harsh penalties for distribution or possession of flunitrazepam. In February 2000, the

President signed similar legislation related to GHB.

The Office for Victims of Crime (OVC) within the Department of Justice currently is providing training and technical assistance for a model program designed to promote promising practices in sexual assault medical evidentiary exams. The program, which promotes the use of specially trained sexual assault nurse examiners, has developed a guide that addresses the issues of drug-facilitated rape, with specific information and guidance regarding comprehensive drug testing and an exam protocol.

National and local victim service organizations have responded to the situation by developing campaigns to raise awareness. A Los Angeles County task force developed a rape kit and procedures designed to improve the way evidence is gathered in suspected cases of drug-facilitated rape. The task force

members included the Rape Treatment Center at Santa Monica—UCLA Medical Center, the Los Angeles County District Attorney's Office, the Los Angeles Police Department, and the County of Los Angeles Sheriff's Department crime labs.

What Are the Implications for Decisionmakers?

Practices and strategies to reduce sexual assault may help reduce drug-facilitated sexual assault, but there are unique aspects to drug-facilitated rape that demand tailored strategies.

Environment Within Which the Crime Occurs. Drug-facilitated rape may be initiated in social settings, like parties and clubs, not traditionally considered high-risk environments. Prevention strategies must consider reaching new audiences, such as bartenders, party hosts, cab drivers, and others who might frequent places where drug-facilitated rapes are initiated or who might see the victim immediately prior to the assault.

Education of Targeted Audiences. Educational programs need to be targeted to high-risk populations—high school and college-age people and people who frequent nightclubs and resorts—rather than to more general audiences.

Investigation Policies. The most numerous implications relate to forensic and investigation practices.

■ **Interviewing Techniques.**

Drug-facilitated rape cases require interview techniques that can help identify a sexual assault case when the victim has memory gaps around the incident or isn't aware of being raped. When an interviewer suspects the victim has ingested a

rape drug, the victim should be asked to provide both urine and blood samples using established timeframes and guidelines for collection and preservation of forensic evidence.

In addition, even though the victim's memory of the assault may be extremely limited, consent should be obtained to conduct a thorough and complete medical/evidentiary examination. Oral, anal, and vaginal samples should be taken even when there is no visible trauma.

- **Importance of a Urine Specimen.** Rape drugs are more likely to be detected in urine than in blood, and the urine specimen should be collected as soon as possible. This can be done prior to commencement of the law enforcement interview and the forensic medical examination. Appropriate measures should be implemented to ensure that other potential evidence, such as sperm or semen, is protected when urine specimens are collected.

Law enforcement personnel, who are often the "first responders," should be aware of the importance of urine specimens in these cases. Victims should be transported immediately for medical care. If the victim must urinate before arriving at a medical care facility, the urine specimen should be saved in a clean container and brought to the medical facility. The chain of custody should be documented.

- **Crime Scene Evidence.** The crime scene also should be secured and examined immediately or critical evidence may be irretrievably lost. Drug-facilitated rape cases may involve multiple crime scenes, for example, the location of the drugging, the location of the sexual assault, locations where illegal

substances were produced or stored, and any vehicle used to transport the victim.

Investigators should be trained to look for specific types of evidence that have been present in other cases. Drug-related evidence may be found in the glasses from which the victim drank, containers used to mix drinks, and trash cans where these items were discarded. In one case, traces of GHB were found in the box of salt that was used to make margaritas. GHB is often carried in small bottles, such as eye drop bottles. It is often administered in sweet drinks, such as fruit nectars and liqueurs, to mask its salty taste.

Recipes for making GHB may be found on an offender's computer. In several cases, rapists who used drugs to incapacitate their victims also photographed or videotaped them. These pictures led to the identification of additional victims of the same offenders.

- **Rape Evidence Kits.** Standardized rape kits should be updated to include instructions and containers for the collection of urine specimens as well as blood in all cases in which drug-facilitated rape is suspected. In jurisdictions that do not have a standardized rape kit, a multi-agency task force composed of police officers, prosecutors, hospital personnel, crime lab technicians, and rape crisis counselors should develop one and monitor compliance. A forensic laboratory with the capability of conducting toxicology tests should be identified because not all crime labs have the specialized equipment needed to test for rape drugs. Procedures should be implemented to preserve the chain of custody of the evidence.

Where Do We Go From Here?

Only four substantial studies of the prevalence and incidence of drug-facilitated rape were under way in late 1999 when this article was prepared, but none will provide an accurate measure of the situation. Three do not interview victims and therefore cannot factor in recreational use of Rohypnol or GHB. The fourth, a study by the University of Cincinnati and funded by NIJ, asks victims specifically if someone has ever placed Rohypnol in a beverage but does not link the responses to sexual assault victimizations or recreational use.

To understand more about drug-facilitated rape, a research agenda should include the following:

- Expansion of existing Federal data systems to provide information on drug-facilitated rape. The *National Crime Victimization Survey* may be an appropriate means for collecting population-based information on the incidence of this offense.
- Collection of new data in the fields of pharmacology and offender profiling.
- Ethnographic studies to develop a better understanding of the nature of this offense, including the most likely victims and the risk factors for victimization.
- A major multiyear, multimethod research initiative structured as four separate studies designed to measure the incidence of drug-facilitated rape among suspected cases, within the general population, among high-risk populations, and in the context of acquaintance rape.
- Funding for development of new drug detection technologies, such as hair analysis methods.

Some of the ethnographic and newspaper reporting on Rohypnol and GHB, which the Department of Justice working group tracked, has been driven in part by sporadic signs of increased recreational use and overdoses. But the more important impetus for further study appears to be reports from people who turn to rape counseling centers and clinics with complaints and suspicions that they have been victimized.

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Notes

1. Perkins, Craig, and Patsy Klaus, *Criminal Victimization 1994*, National Crime Victimization Survey Report, Washington, D.C.: U.S. Department of Justice, Bureau of Justice Statistics, April 1996 (NCJ 158022). The number of rapes reported on victimization surveys, however, differs widely from the number reported to the police. In 1996, 95,770 forcible rapes were reported to the police, representing approximately 28 percent of the number of rape victims reported in the *National Crime Victimization Survey*.
2. Levine, E.M., and E.J. Kanin, "Sexual Violence Among Dates and Acquaintances: Trends and Their Implications for Marriage and Family," *Journal of Family Violence* 2(1):55-65 (1987).
3. Richardson, D.R., and G.S. Hammock, "Alcohol and Acquaintance Rape," in A. Parrot and L. Bechhofer (eds.), *Acquaintance Rape: The Hidden Crime*, New York: John Wiley and Sons, 1991, 83-95.
4. A national survey based on a sample of students in higher education showed that 55 percent of female student victims of acquaintance rape and

For More Information

- Fitzgerald, N., K.J. Riley, T. Alston, C. Mamalian, M. Mendez, A. Resnick, B. Taylor, and J. Wiseman, *Report to the Attorney General From the Drug-Facilitated Rape Working Group*, Washington, D.C.: U.S. Department of Justice, National Institute of Justice, 1998 (NCJ 181396). To obtain a copy, contact the National Criminal Justice Reference Service at P.O. Box 6000, Rockville, MD 20849-6000, 1-800-851-3420.
- Nora Fitzgerald, Social Science Analyst, National Institute of Justice, 810 Seventh Street NW., Washington, D.C. 20531, 202-305-1547, fitzgera@ojp.usdoj.gov.
- The National Institute on Drug Abuse's party drugs Web site: <http://www.clubdrugs.org>.
- Anglin, D., K.L. Spears, and H. Range Hutson, "Flunitrazepam and Its Involvement in Date or Acquaintance Rape," *Journal of Academic Emergency Medicine* 4(4) (1997).
- Calhoun, S.R., D.R. Wesson, G.P. Galloway, and D.E. Smith, "Abuse of Flunitrazepam (Rohypnol) and Other Benzodiazepines in Austin and South Texas," *Journal of Psychoactive Drugs* 28(2) (April-June 1996).
- Inciardi, J.A., and C.A. Saum, "Rohypnol Misuse in the United States," *Journal of Substance Use and Misuse* 32(6):723 (1997).
- Woods, J.H., and Gail Winger, "Abuse Liability of Flunitrazepam," *Journal of Clinical Psychopharmacology* 17,(3) (June 1997), Supp. 2.

- 74 percent of male student perpetrators self-reported using alcohol immediately before the assault. See Koss, Mary, "Hidden Rape: Sexual Aggression and Victimization in a National Sample of Students in Higher Education," in Ann W. Burgess (ed.) *Rape and Sexual Assault, vol. II*, NY: Garland Publishing, 1988.
5. Calhoun, S.R., D.R. Wesson, G.P. Galloway, and D.E. Smith, "Abuse of Flunitrazepam (Rohypnol) and Other Benzodiazepines in Austin and South Texas," *Journal of Psychoactive Drugs*, 28(2) (April-June 1996).
 6. "Gamma Hydroxy Butyrate Use—New York and Texas, 1995-1996," *Morbidity and Mortality Weekly Report*, 46(13):281-283 (April 4, 1997). Rosen, M.I., H.R. Pearsall, S.W. Woods, and T.R. Costen, "Effects of Gamma-Hydroxybutyric Acid (GHB) in Opioid-Dependent Patients," *Journal of Substance Abuse Treatment*, 14(2):149-154 (March 1997).
 7. Conversation with Lloyd Johnston, Principal Investigator of Monitoring the Future, University of Michigan, Institute for Social Research, January 1, 2000.
 8. Among 10th graders, 1.4 percent reported heroin use in 1998; 1.1 percent of 12th graders reported heroin use in that same year.
 9. Among Hispanic students, the rates increase from 1.9 to 3.5 percent. In one school district on the Texas-Mexico border, 14 percent of the students reported ever having used Rohypnol, and 5.3 percent reported using it in the past month. See Maxwell, J.C., and L.Y. Liu, *1998 Texas School Survey of Substance Use Among Students: Grades 7-12*, Texas Commission on Alcohol and Drug Abuse, 1999.