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Crystal Meth, Gay Men, and Circuit Parties

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Editorial

Public use of methamphetamine as an illegal drug is on the rise and poses substantial challenge, risk, and financial and resource drains on the police, the courts, the jails, treatment centers, and the public health system. Methamphetamine is easily made; cheap to buy; and provides the user with an immediate feeling of exhilaration, euphoria, and a sense of well-being. Taken over long periods of time, abuse causes depression, paranoia, and violent behavior—extended addiction leads to rapid deterioration of mental and physical health.

The focus of this edition of the *Forum* is methamphetamine. Emerging research on increased usage of methamphetamine in the United States, and particularly in rural America, is documented in a number of the articles which follow. Profiles of abusers provide disturbing and alarming data regarding problems currently being faced by criminal justice and public health professionals as well as the community at large.

In the state of Illinois, we have seen the number of arrests for methamphetamine increase drastically over the past five years. In total, over 1,500 meth labs were seized in rural Illinois in the past five years alone. Due to the explosive nature of ingredients used to cook methamphetamine, the number of accidents and physical injury involving the police and innocent bystanders, including children, continues to rise, and county jails and treatment centers are overburdened with methamphetamine users/addicts.

The research articles contained herein collectively document emerging trends in methamphetamine usage, and point to the danger that such usage poses to the police, the addict, and the community. Most importantly, this edition calls for an immediate, well-funded systemwide and community response—including legislative remedies—to address the public safety issues brought on by the rising use of methamphetamine.

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Methamphetamine in the United States

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Overview

Methamphetamine is a synthetic central nervous system stimulant that is classified as a Schedule II controlled substance. It is widely abused throughout the United States and is distributed under the names "crank," "meth," "crystal," and "speed." It is commonly sold in powder form, but it has also been distributed as tablets or as crystals (called "glass" or "ice"). Methamphetamine can be snorted, smoked, injected, or taken orally. It produces feelings of exhilaration, euphoria, and well-being. Prolonged abuse causes depression, tremors, irritability, and paranoia. It is highly addictive and causes aggressive behavior. Methamphetamine is popular because it is cheap. Methamphetamine sells for about half the price of cocaine and produces a high that can last twice as long.

Over the last decade, the methamphetamine trafficking and abuse situation in the United States has changed dramatically. Traditionally a "West Coast problem," abuse of the drug has spread rapidly around the country. The entry of Mexican traffickers into the methamphetamine production and distribution trade in the early 1990s resulted in a significant increase in the supply of the drug. Organizations based in Mexico and California originally provided high-purity, low-cost methamphetamine to cities in the Midwest and West with large Mexican populations. Since that time, however, precursor chemical controls have led to lower methamphetamine purity levels. The demand for the drug, however, has not decreased.

Through increased supply, these Mexican organizations initiated the growth of the methamphetamine problem in the United States. Several other factors have also contributed. The growing use of the Internet has allowed easy access to methamphetamine "recipes," resulting in a significant increase in the number of small-scale or small toxic laboratories (STLs) throughout the United States. The STLs do not produce methamphetamine on a large scale; however, the shear number of these laboratories strain community resources because of the fiscal, environmental, health, and safety issues that are associated with their removal. The most disturbing aspect of STLs concerns children present at these sites. In 2002, over 5,900 children were present during the seizure of clandestine methamphetamine laboratories nationwide. Most of these were STLs.

In addition, Southeast Asian methamphetamine tablets began to appear in the United States, threatening to expand the already lucrative market for methamphetamine. More recently, the highly potent rock form of methamphetamine, known as "ice," also appears to be gaining popularity in various states across the country.

Mexican Organizations

Beginning in the 1990s, Mexican national drug trafficking organizations in Mexico and California began operating "super labs," laboratories that can produce ten pounds or more of methamphetamine in one production cycle. Many of these laboratories produce several hundred pounds of methamphetamine in a few

days. Methamphetamine production and distribution, once controlled by outlaw motorcycle gangs (OMGs), was taken over by major Mexican traffickers who now dominate wholesale methamphetamine trafficking. In the early to mid-1990s, Mexican organizations had ready access to precursor chemicals on the international market. These chemicals had fewer controls in Mexico and other countries than in the United States. The Mexican national organizations further developed existing international connections with chemical suppliers in Europe, Asia, and the Far East to obtain large quantities of the bulk ephedrine and pseudoephedrine, the necessary precursor chemicals for the manufacture of methamphetamine.

From their experience trafficking cocaine, heroin, and marijuana, the Mexican organizations already had well-established transportation routes into and throughout the United States. Initially offering inexpensive, high-purity methamphetamine, the Mexican organizations ultimately gained a foothold in the existing U.S. market and subsequently expanded their operations. The OMGs realized that it was more advantageous to purchase methamphetamine from the Mexican organizations than to manufacture it themselves.

In the late 1980s, international efforts were undertaken to control the flow of bulk ephedrine and pseudoephedrine; consequently, Mexican traffickers resorted to using the tablet form of the precursors available in the United States. From 1997 to 1999, the majority of Mexican criminal organizations in California obtained their precursor chemicals from sources in the United States. Chemical wholesalers, chemical companies, and "back door" sales from unscrupulous retail and convenience store operators provided these organizations with large quantities of ephedrine/pseudoephedrine tablets. Law enforcement efforts targeting illicit U.S. chemical sales effectively eliminated the supply of pseudoephedrine available to traffickers domestically. In an effort to obtain these precursors, pseudoephedrine traffickers turned to Canada, where there were few restrictions on the sale of the precursor, and smuggled it across the border primarily for use in super labs. With encouragement from the United States, in January of 2003, Canada implemented new regulations regarding precursor chemicals, including pseudoephedrine. In April of 2003, the DEA along with the Royal Canadian Mounted Police (RCMP) arrested over 65 individuals, including executives from Canadian chemical companies for smuggling pseudoephedrine into the United States.

Methods of Production

Methamphetamine is now produced most commonly by using either pseudoephedrine (or ephedrine) reduction, the "Nazi" method, or the phenyl-2-propanone (P2P) method. The P2P method, traditionally used by motorcycle gangs, utilizes P2P and methylamine combined with aluminum and mercuric chloride to produce methamphetamine. This method is not used widely at this time; however, it is still encountered in parts of the western United States. The pseudoephedrine/ephedrine reduction method is the most common method found in super labs. This process most often uses ephedrine or pseudoephedrine, red phosphorous, and hydriodic acid or iodine. The first DEA seizure of a clandestine laboratory that employed this method of methamphetamine production occurred in 1987. Over the past decade, seizures of laboratories employing the ephedrine reduction method have far outnumbered those using the P2P method. The "Nazi method" became popular because it is quick and inexpensive, requires little setup

time or equipment, and can yield relatively pure methamphetamine. This is the method most often found in STLs. It requires pseudoephedrine, ether, lithium, and anhydrous ammonia.

Sources of Precursor Chemicals

Super Labs

The majority of methamphetamine precursors diverted to clandestine laboratories in the United States are dosage form, over-the-counter pseudoephedrine or ephedrine drug products. Nationwide networks of suppliers, working together, now provide ton quantities of pseudoephedrine tablet products to laboratory operators in California and to illicit distributors, such as convenience stores, in other states. The latter provide the product to local methamphetamine laboratories. Cells involved in the illegal smuggling and distribution of pseudoephedrine to the United States often obtain the product from wholesalers in Canada, where there are few precursor regulations. They then hire couriers to smuggle the product from Canada to the United States. To date, most of these cells have been operated by people of Middle Eastern descent.

Since Canada has had minimal chemical control laws, Canadian companies became a major source of supply for pseudoephedrine destined for U.S. super labs. Pseudoephedrine from Canada most often enters the United States via tractor trailers, van, or passenger vehicle in Detroit, and to a lesser extent, Buffalo. Some tractor trailer trucks are falsely labeled with legitimate government or commercial company names to avoid the suspicion of customs officials. Afterwards, the pseudoephedrine is often taken to the Chicago area where it is transferred to storage units for transport to Las Vegas. There, the pseudoephedrine is placed in storage facilities until methamphetamine laboratory operators arrange for pick-up. Occasionally, shipments from Detroit are driven directly to California for distribution to Mexican super labs.

A substantial profit can be realized from sales of pseudoephedrine. One case of pseudoephedrine (30,000 tablets), which sells for $200 in Canada, can be sold for $2,900-$4,000 to Mexican trafficking organizations. Although Mexican drug trafficking organizations primarily still purchase pseudoephedrine from traffickers of Middle Eastern descent, new information indicates that there have been some instances of the organizations transporting their own pseudoephedrine from the Canadian border to super labs in the West. Most of the tablets obtained in Canada are destined for California where they are used in the production of methamphetamine. The finished methamphetamine is then distributed across the United States through established trafficking routes.

Small Toxic Laboratories (STLs)

Operators of small toxic laboratories (STLs) generally obtain their precursors, including pseudoephedrine/ephedrine, from retail or convenience stores. With the exception of anhydrous ammonia, every product needed for the manufacture of methamphetamine can be readily purchased over-the-counter. To avoid law enforcement suspicion and bypass stores limiting the sales of pseudoephedrine/ephedrine, methamphetamine "cooks" visit several different stores buying the

maximum quantity of precursors allowed. Some groups have "smurfs" or "runners," hired specifically to purchase pseudoephedrine products from multiple locations. Other independent groups obtain pseudoephedrine from unscrupulous store owners or chemical wholesalers who falsify records to make the sales look legitimate.

Although most chemicals needed to manufacture methamphetamine can be purchased at any retail/convenience store, anhydrous ammonia must be purchased from specialized stores. It is much more efficient for small lab operators to simply steal it from area farms where it is legitimately used as a fertilizer. The tanks containing the anhydrous ammonia are usually located in open fields, allowing easy access. The stolen anhydrous ammonia is placed in unsafe containers such as propane tanks and fire extinguishers, often resulting in serious injury.

As controls of chemicals are tightened and law enforcement pressure rises, laboratory operators are continually forced to change their methods for obtaining precursors. Iodine crystals, an ingredient used to manufacture methamphetamine, were once readily available at many feed and tack stores, which legitimately sell the chemical to treat horses. As diversion of the crystals increased, many stores voluntarily limited sales of crystals, reported suspicious sales to authorities, or stopped selling the crystals completely. Reporting requirements for sales of iodine were enacted in 2000; as a result of such measures, cooks have resorted to using "tincture" iodine, an unregulated, diluted form of iodine. In August of 2000, drug agents seized the first known laboratory specifically set up for manufacturing iodine crystals in California.

Trafficking

The majority of methamphetamine presently available in the United States is produced domestically in super labs or STLs; however, methamphetamine produced in Mexico and smuggled through numerous ports of entry also fuel the supply. Currently, Mexican criminal organizations produce most of the methamphetamine made within the United States and Mexico.

The early primary suppliers of methamphetamine in the United States were OMGs. OMGs are still active in methamphetamine production, but they produce considerably less than their Mexican counterparts. Intelligence indicates, however, that OMGs are increasingly active in the distribution of methamphetamine, at times in concert with Mexican criminal organizations. Some OMGs obtain their supply of methamphetamine from Mexican criminal organizations.

Mexican methamphetamine organizations are composed of Mexican nationals residing in Mexico and the United States, Mexican-Americans who operate on either side of the border, and illegal aliens residing in the United States. Some of these organizations are directed by families that have been smuggling contraband for decades. These poly-drug groups are largely responsible for the transportation and distribution of large quantities of cocaine, methamphetamine, heroin, and marijuana in the United States. They regularly demonstrate their flexibility and adaptability, modifying smuggling routes and methods as necessary to evade law enforcement efforts.

Methamphetamine from Mexico continues to flow into the United States, adding to the supply produced domestically. For example, in 2000, the Tijuana Residence

Office (TJRO) reported only two methamphetamine laboratory seizures in Mexico; this number increased substantially in 2001 to 27 clandestine laboratories. This increase may represent more law enforcement actions or better reporting, rather than an actual change in the number of laboratories in Mexico; however, most of these methamphetamine laboratories were seized in the border cities of Tijuana and Mexicali, increasing the probability that the product produced in the labs was bound for the United States.

The primary points of entry into the United States for methamphetamine produced in Mexico have traditionally been located in California, particularly San Ysidro. Although a great amount of methamphetamine still transits this area, ports of entry in south Texas have experienced increases in smuggling activity. The most common method of transporting methamphetamine is within concealed compartments in passenger vehicles.

Distribution

Domestically, methamphetamine is distributed by a wide array of organizations that vary greatly in size, structure, and degree of sophistication—from small, local, independent groups that operate on a limited scale to large organizations that control all aspects of the trafficking. Intelligence indicates that many of the established distribution networks around the country are supplied by sources in California.

Trafficking groups based in California and Mexico dominate distribution in most areas of the West, Southwest, and Midwest. For example, they operate in Arizona, Colorado, Georgia, Florida, Idaho, Iowa, Nebraska, Kansas, Texas, and Washington. More recently, methamphetamine has reached the eastern United States. Investigations reveal that independent cells are distributing methamphetamine in states such as Maine and New Hampshire.

The widespread migration of Mexicans to various states across the country affords a pool of unemployed or low-paid individuals who might be eager to earn illicit income from trafficking organizations. States across the country, including those in the East, are experiencing increased drug trafficking activities in areas where the Hispanic population has grown significantly. Large Hispanic populations provide cover for distribution groups of Mexican descent, allowing them to conduct business without drawing attention to themselves.

When California and Mexico-based drug traffickers cannot find people who are willing to distribute drugs, they have been known to coerce illegal aliens into illicit activities by threatening to expose them to immigration officials. Under these circumstances, a closed system has been established based upon self-interest and legal status, which permits the illicit activities to flourish.

Super Labs

The presence of a super lab generally indicates the involvement of a large organization rather than an independent small-scale operation. In 2002, 340 of the approximate 9,000 clandestine methamphetamine laboratory seizures reported to the National Clandestine Laboratory Database at the El Paso Intelligence Center (EPIC) were super labs. During 2000, the number of super labs totaled 168. Reporting

indicates a sharp increase in the number of 10- and 20- (or more) pound capacity labs in California. The number of 10-pound capacity super labs in California increased from 127 in 2000 to 213 in 2002. Twenty-pound or more capacity labs shot from 58 in 2000 to 101 in 2002.

Super labs, although still primarily located in California, are spreading to other parts of the country that traditionally have only seen STLs. For example, in 2001, super labs were found in Arkansas, Alabama, Alaska, Kansas, Missouri, Nebraska, and Tennessee. Large labs have also been increasing in Texas since 2000 (National Clandestine Laboratory Database at the El Paso Intelligence Center (EPIC) as of July 30, 2002).

Small Scale Production: Small Toxic Labs or "Tweeker" Laboratories

STLs, operated by independent "cooks," who obtain their ingredients from retail and convenience stores, also supply the illicit methamphetamine market. The amount of methamphetamine produced in these laboratories is usually measured in ounces. The growing use of the Internet, which gives ready access to methamphetamine "recipes," coupled with increased demand for high-purity product, has resulted in a dramatic increase in the number of ounce production laboratories throughout the United States.

STL operators often substitute mason jars, coffee filters, hot plates, pressure cookers, pillowcases, plastic tubing, and gas cans for sophisticated laboratory equipment. Such practices, however, often lead to explosions, fires, and other chemical-related injuries. For example, a cook was injured at a "Nazi" lab when he peeled off the casing of a lithium battery and placed the lithium strip into a pot containing boiling Coleman fuel. The pot exploded, burning the cook's upper body and arms and causing another can of Coleman fuel to ignite. On May 10, 2002, two men died as a result of anhydrous ammonia vapors while attempting to manufacture methamphetamine in a small town outside of Knoxville, Tennessee (National Clandestine Laboratory Database at the El Paso Intelligence Center [EPIC], 2002).

Ice

Ice, also known as glass, is similar in appearance to rock candy, broken glass, or crushed ice. Ice contains the same active chemical compound as powder methamphetamine, but it undergoes a recrystallization process in which some impurities in the methamphetamine are removed. The finished product is allowed to dry into crystal chunks that are broken into smaller rocks for sale.

Ice is a very pure, smokable form of methamphetamine that is more addictive than other forms of the substance. When smoked, highly concentrated doses of the drug are delivered instantaneously into the user's system and may cause more compulsive use, severe paranoid delusions, and hallucinations. Usually smoked in a glass pipe, hollowed aluminum can, or light bulb, several "hits" can be obtained from a single gram of this substance. In a method of smoking sometimes referred to as "chasing the dragon," a term commonly associated with smoking opium or heroin, users heat ice on a piece of aluminum foil and inhale the released vapors—usually through a straw or similar device.

Historically, Asian criminal groups from South Korea, Taiwan, or China supplied ice to Guam, Hawaii, and parts of California. Production, distribution, sale, and consumption of ice in the Los Angeles area were centered in the Asian community. In the mid-1990s, however, traffickers from Mexico, operating out of Los Angeles, began supplying powder methamphetamine to ethnic Asian criminal organizations and gangs on the West Coast and in Hawaii for conversion to ice. In the mid-1990s, Mexican criminal groups began shipping methamphetamine to Hawaii, where it was converted to ice. More recently, Mexican criminal groups are producing ice themselves and selling it for significantly less than rival Asian trafficking groups. Intelligence indicates that some groups "push" ice by reducing the price in an attempt to create a user base for this form of the drug. The substantial profit derived from sales of ice versus powder is likely the reason for its increased manufacture by Mexican trafficking groups.

The increased availability of Mexican-produced ice increased abuse of the substance. Ice is reportedly spreading to "raves" where "club drugs" such as MDMA, Ketamine, and GHB are commonly used. Club-goers sometimes snort this form of methamphetamine by crushing it into a powder or smoke it. The spread of ice use may be associated with the misperception that its higher purity makes it safer. Users sometimes convert methamphetamine powder to ice themselves in an effort to remove impurities, which they believe may cause "bad trips."

Ice use is still most prevalent in Guam, Hawaii, and parts of California, but it has also reached Ohio, Florida, New York, Texas, and Virginia. Asian and Samoan/Pacific Islander gangs also have been associated with ice trafficking in Alaska and California.

Southeast Asian Methamphetamine Tablets

Since the early 1990s, the tablet form of methamphetamine has been popular throughout much of Southeast and East Asia; however, Southeast Asian-produced methamphetamine tablets are a recent phenomenon in the United States. To date, most methamphetamine tablets have been found in northern California and the Los Angeles area. Frequently referred to by their Thai name "yaba," which means "crazy pill," the tablets are usually a combination of methamphetamine and caffeine.

Southeast Asian methamphetamine tablets are produced by large drug trafficking organizations in Burma. The United Wa State Army, a former insurgent group and Burma's largest heroin trafficking organization, is the preeminent producer of the tablets in Southeast Asia. Its primary market is the neighboring country of Thailand. A recent anti-drug crackdown by the police in Thailand was in response to the violence brought on by the yaba epidemic in that country.

Southeast Asian traffickers, mainly Thai or Lao nationals, and United States citizens/resident aliens whose families have emigrated from those countries, dominate the trafficking of methamphetamine tablets in the United States. The tablets are primarily sent from Southeast Asia by mail, and, to a lesser extent, by either courier or air cargo. A seizure of tablets was also made from a maritime cargo ship. To date, most of the tablets seized in the United States have arrived through the international mail system, destined for the native Hmong community in northern California and the Los Angeles area.

In the United States, the tablets are commonly reddish-orange or green and fit inside the end of a drinking straw. They have a variety of logos, with "WY" the most common. Methamphetamine tablets are normally ingested orally, although they can be crushed into powder and snorted or mixed into drinks.

Seizures of "yaba" increased significantly from 1,232 tablets in 1997 to 301,697 in 2000. Although the rapid increase in seizures signaled that yaba may become an increased threat to the United States, seizures in 2001 decreased to 32,280 pills. It is likely that traffickers have resorted to other smuggling methods.

It is currently believed that the Southeast Asian methamphetamine tablets arriving in the United States are primarily for sale to the Asian community; however, it is possible that demand could expand to the "rave" party scene, given the similar appearance to other tablet form "club drugs," such as MDMA, or ecstasy. In addition, the less expensive price of the Southeast Asian methamphetamine tablets, usually between $10 and 20, may motivate distributors to market the tablets as ecstasy, which commands an average of $20-30 per tablet.

"Copycat" Ecstasy

In addition to the emergence of Southeast Asian methamphetamine pills, recent seizures of methamphetamine tablets from unknown sources have been made in various parts of the country. These tablets were being marketed as MDMA or ecstasy. The substitution of methamphetamine in tablet form for MDMA may indicate that shrewd traffickers are using readily available domestically produced methamphetamine to take advantage of the popularity of MDMA. Past domestic investigations have uncovered the use of pill presses to convert methamphetamine into pill form.

Methamphetamine Abuse

Initially, the high obtained by using small amounts of methamphetamine makes users feel energetic, suppresses their appetite, and helps them to accomplish more tasks by allowing them to stay awake for a longer period of time. Prolonged use of methamphetamine leads to "bingeing," consuming the drug continuously for up to three days without sleep. The user then is driven into a severe depression, followed by worsening paranoia, belligerence, and aggression, a period known as "tweaking."

Ephedrine-based methamphetamine is several times more potent than methamphetamine made using the precursor P2P; therefore, it can produce more severe reactions, with sleepless binges that last up to 15 days. The user commonly collapses from exhaustion, only to awaken days later to begin the cycle again.

Chronic, high-dose methamphetamine abusers, often called "speed freaks," are generally undernourished and have a gaunt appearance, poor hygiene, and decaying teeth. Methamphetamine is a vasal constrictor, which means that it restricts the flow of blood to the capillaries. This restricted flow of blood causes a degeneration of the various organs of the body. Hardcore abusers inject as much as 1,000 milligrams of methamphetamine every two to three hours. Due to the high level of methamphetamine in their systems, "speed freaks" are extremely paranoid.

The Drug Abuse Warning Network (DAWN) Mortality/Emergency Room Data

The DAWN obtains information on drug-related admissions to emergency departments and drug-related deaths identified by medical examiners. The DAWN cities reporting the highest number of methamphetamine-related deaths in 2000, (the most current data available), were Los Angeles (155), San Diego (112), Phoenix (109), and Las Vegas (49). Nationwide DAWN emergency department episodes rose from 10,447 in 1999 to 14,923 in 2001. In 2000, DAWN statistics showed that most incidents involved white (64%), males (64%) between 18 and 34 years old (58%). Most of those entering emergency departments reported "dependence" as the primary motive for seeking treatment.

Arrestee Drug Abuse Monitoring Program (ADAM)

ADAM collects drug-use information, based on interviews and urinalysis, on a voluntary basis from recent arrestees. Cities with the highest percentage of positive urinalyses for methamphetamine among male arrestees were as follows:

Honolulu – 35.9
Sacramento – 29.3
San Diego – 26.3
San Jose – 21.5

Cities with the highest percentages of positive results for methamphetamine among female arrestees were as follows:

Honolulu – 47.2
San Jose – 40.8
Sacramento – 29.6
Salt Lake City – 28.9

Of these cities, the majority of those testing positive for methamphetamine, both male and female, were between the ages of 26-35.

In most cities, male arrestees who tested positive for methamphetamine were primarily white; however, several cities reported higher percentages of Hispanic males. Cities with a high percentage of positive urinalysis for methamphetamine among white male arrestees were as follows:

Sacramento – 44.6
Portland – 30.5
San Diego – 30.2
Phoenix – 28

High percentages of Hispanic male arrestees were reported in Honolulu (39.6%), Sacramento (37%), Spokane (35.7%), and San Diego (35%).

Female arrestees who tested positive for methamphetamine were also primarily white in most areas. The highest percentages of white female arrestees were as follows:

Honolulu – 66.7
San Jose – 57.1
Sacramento – 50
Phoenix/Mesa area – 38.4

Hispanic arrestees positive for methamphetamine were most prominent in Honolulu (50%) and Salt Lake City (37.5%).

Seizures

Mexican organization involvement, combined with growing numbers of independent clandestine laboratories, resulted in a record number of methamphetamine laboratory seizures. Domestically produced methamphetamine has grown significantly in recent years, expanding to locations across the nation. The number of methamphetamine clandestine laboratories seized nationwide was 8,865 in 2002 compared to 2,498 in 1995. The number increased to 15,594 when chemicals, glassware, equipment, and dumpsites were included. STLs, once found primarily only in the West, are now increasing in Missouri and along the East Coast.

According to the federal Drug Seizure System, U.S. federal authorities seized a total of 2,883 kilograms of methamphetamine in 2001 compared with 3,473 kilograms in 2000, and 2,776 kilograms in 1999. A large portion of the 2001 total was seized in California, signaling a continuing problem in the state with large quantity production labs. Data collected through Operation Pipeline, a U.S. highway interdiction program managed by the El Paso Intelligence Center (EPIC), indicates an increase in methamphetamine seizures. Operation Pipeline reported that 782 kilograms of methamphetamine were seized in 2000, a slight increase compared with 751 kilograms in 1999, but almost an 80% increase from 170 kilograms seized in 1994.

According to EPIC statistics, the methamphetamine seized in transit from Mexico to the United States has increased dramatically since 1996. Authorities seized 1,224 kilograms of methamphetamine along the border in 2002, compared with 1,172 kilograms in 2001 and only 669 kilograms in 1996. During 2001, approximately 40% of the seizures made within 150 miles of the U.S./Mexico border were seized at the San Ysidro and Calexico, California ports of entry.

Purity

International chemical control efforts of the 1990s reduced the supply of precursor chemicals necessary for the production of high-quality methamphetamine. Additionally, in many states, legislation tightening the threshold amounts of pseudoephedrine/ephedrine that can be purchased in a single transaction has made over-the-counter procurement of precursors more difficult. Quite possibly, these measures have contributed to a decline in methamphetamine purity by making precursors more difficult to obtain. Although the average purity of methamphetamine exhibits seized by DEA in 2002 rose to 44% from 36% in 2000, this average purity level is still dramatically lower than the 1994 average of 72 percent.

MSM

As precursors became more difficult to obtain, Mexican methamphetamine organizations increasingly used the diluent or "cut" methylsulfonymethane (MSM). Legitimately used as a nutritional supplement for horses and humans, MSM is readily available at feed and livestock stores, as well as health and nutrition stores. MSM has displaced other cuts, such as caffeine and vitamin B, since it is inexpensive, easy to purchase, and blends easily with the finished product. Increased use of MSM may simply represent a marketing method to meet demand while increasing profit.

In 1995, the DEA Southwest Regional Laboratory in San Diego first identified MSM as a cutting agent in a methamphetamine exhibit. Methamphetamine samples, which prior to 1995 tested in the 90 to 95% pure range, now test between 2 to 29% pure. Average purity levels in samples processed by the DEA Western Regional Laboratory in San Francisco dropped significantly from 60% in 1995 to 20% in 2001. MSM is found in varying amounts of methamphetamine samples analyzed by DEA forensic laboratories.

Price

Methamphetamine prices vary throughout different regions of the United States. At the distribution level, prices range from $3,500 per pound in parts of California and Texas to $23,000 per pound in southeastern and northeastern portions of the country. Retail prices range from $400 to $2,500 per ounce.

Arrests

After consistently increasing over an eight-year period, DEA arrests of methamphetamine violators decreased in 2000 and again in 2001 to 6,557 arrests, a 33% decline from the 8,783 arrests made in 1999 as the DEA shifted its priorities to major trafficking organizations and away from STL operators. Despite the decrease, the 2001 figure is 181% higher than the 1994 figure of 2,332 arrests.

Health and Safety Hazards, Site Contamination, and Environmental Impact

Methamphetamine laboratories present both acute and chronic health risks to individuals involved in the seizure and cleanup of the facility, to those who live and work nearby, and to the violator who operates the facility. The presence of ignitable, corrosive, reactive, and toxic chemicals at the sites results in explosions, fires, toxic fumes, and irreparable damage to human health and the environment. The amount of waste material from clandestine laboratories varies from a few pounds to thousands depending on the size of the laboratory and its manufacturing capabilities.

Cleaning up a seized clandestine drug laboratory site is complex, dangerous, expensive, and time-consuming. Due to the risk of exposure to toxic fumes and dangerous chemicals, law enforcement personnel engaged in clandestine drug laboratory seizures require specialized training in the investigation of such facilities, including training in appropriate health and safety procedures and in the use of personal protective equipment.

Chemical reactions that occur during the manufacture of illegal drugs can produce toxic vapors that permeate into the plaster and wood of buildings or are released outside. Respiratory problems can often be experienced by unsuspecting inhabitants of buildings formerly used by clandestine drug laboratory operators because of residual contamination inside and outside the structure. Further problems are caused when the chemicals are stored at locations such as rental lockers. Often, the lack of proper ventilation and temperature controls at these locations increases the potential for fire and explosion. For example, methamphetamine lab operators converting methamphetamine to "ice" place a mixture of methamphetamine and acetone in a jar and place it in the refrigerator where crystallization takes place. Refrigerators are not vented to handle the vapors produced in this process and become saturated with flammable vapors. When the refrigerator is opened and the inside light bulb switches on, a violent explosion can occur.

Methamphetamine laboratories also contaminate water sources and/or soil, and in some cases, this contamination spreads off-site. Careless handling or intentional dumping by the laboratory operator is a major source of contamination. It is common for the operator to spill chemicals on the floor or dump waste into bathtubs, sinks, toilets; on the grounds surrounding the laboratories; and along roads and creeks. Surface and groundwater drinking supplies can be contaminated, potentially affecting large numbers of people. The cost of remediating some contaminated sites can be as high as $20,000. Local, state, and federal agencies spend millions of dollars each year to remove hazardous wastes from methamphetamine laboratories and dumps. The clean up of clandestine methamphetamine laboratories costs the U.S Government over 20 million dollars per year.

Farmland, waterways, and public lands are often used to dump chemical wastes. Although most of the labs found on public lands are small, the cooks almost always leave behind a dangerous combination of caustic chemicals that both destroy the environment and present health hazards for visitors. The Mark Twain Forest, located in Missouri, attracts more than 1.5 million visitors per year. In 2000, the U.S. Forest Service reported approximately 450 methamphetamine labs and dumpsites in the Mark Twain National Forest. The combination of unsuspecting tourists and methamphetamine cooks embarking on illegal endeavors creates a serious safety issue.

Every year, fires or explosions occur at clandestine laboratory sites, often injuring or killing both the violator engaging in the cooking process and innocent bystanders. For example, on November 26, 1994, a 12-plex apartment building in West Valley City, Utah, was destroyed by a fire ignited in a clandestine laboratory located within one of the units, leaving 40 people homeless. In Aguanga, California, in 1995, three small children were killed in a mobile home fire started by their mother while she was making methamphetamine.

Communities around the United States are developing Drug Endangered Children (DEC) programs in direct response to the threat that these laboratories present to children. DEC programs integrate law enforcement, prosecution, and protective service agencies to ensure that children exposed to laboratories are cared for. In 2002, 1,304 children were reported to be exposed to toxic chemicals, and 968 children were placed in protective custody. Twenty four children were injured, and two were killed in methamphetamine laboratories.

Associated Violence

Violence is frequently associated with methamphetamine from its production and trafficking to its use. Users under the influence of the drug may act out as a result of paranoia produced by the drug. Users also commit violent acts to obtain methamphetamine or the money to purchase it. Distributors may use violence to force payment for methamphetamine or to intimidate individuals who they suspect to be cooperating with law enforcement. Booby traps and weapons are commonly used at lab sites to harm law enforcement or rival drug traffickers and to protect the methamphetamine. Law enforcement entry teams have been attacked numerous times by dogs and, in one instance, confronted with several poisonous snakes.

Every community with a methamphetamine abuse problem experiences violence in some form. Most commonly, this violence occurs as domestic disputes or child abuse and neglect. The extreme agitation, paranoia, and lack of sleep associated with use of this stimulant often leads to situations in which violence is more likely to occur. Chronic use of methamphetamine causes delusions and auditory hallucinations that precipitate violent behavior or response. The following incidences are examples of violent behavior produced by the use of methamphetamine:

- In San Diego, a man high on methamphetamine stole a National Guard tank and rode down the freeway, running over cars along the way.

- In Arizona, a sheriff's deputy tweaking on methamphetamine gunned down two of his fellow officers after they found him rifling through evidence.

- Three sheriff's detectives were shot in Seattle when they raided a suspect's meth lab. One officer sustained gunshot wounds to the upper legs; another detective was hit in the foot. The third detective was seriously injured with a shot to the stomach and elbow.

Methamphetamine traffickers' disputes, acts of retribution, and attempts to eliminate competition have resulted in homicides and assaults. Reporting indicates that Idaho gang members involved in the distribution of methamphetamine from Mexico have been identified in shootings, assaults, and witness intimidation. Members of OMGs and Mexican methamphetamine organizations have also been implicated in violent criminal activity, including assault, extortion, attempted murder, and homicide. Violence of this magnitude is an alarming characteristic of the methamphetamine trade.

Legislative Efforts

Many states have responded to the STL issue by passing new and improved precursor legislation. Numerous states have pending bills concerning blisterpack pseudoephedrine, iodine, and other precursor chemicals. Oklahoma recently restricted pseudoephedrine sales to six grams, and California restricted sales to nine grams with no exemption for blisterpacks. Arnold, Missouri recently passed a law that requires identification for purchases of more than one box of pseudoephedrine. A Missouri statewide law limiting purchases of pseudoephedrine to two boxes with all packages being maintained behind counters, is expected to be signed by the governor soon.

Outlook

Law enforcement agencies, in both the United States and Canada, are working to target the supply of precursor chemicals, particularly pseudoephedrine, in an effort to thwart production of methamphetamine. New regulations regarding record-keeping for import and export of pseudoephedrine have been implemented by the Canadian government.

At the same time, methamphetamine continues to pose significant problems for law enforcement across the United States. Although super labs operating primarily in California and methamphetamine smuggled from Mexico continue to be the main sources of supply in the United States, local small-scale operations increasingly contribute to the overall availability of the drug. Mobile labs and those operating on public lands make detection more difficult and increase the likelihood of injury to innocent bystanders. Ever-changing methods of manufacturing or obtaining precursor chemicals render efforts to limit supplies of chemicals, such as iodine, pseudoephedrine, and MSM, challenging.

Higher numbers of super labs also add to the already overwhelming presence of this drug while increased production of high-purity ice threatens to expand methamphetamine addiction. Furthermore, while not currently a widespread problem, Southeast Asian methamphetamine tablets threaten to spread the methamphetamine problem to new user populations.

The DEA, in concert with our local, state, and international partners, continues to meet the threat posed by the methamphetamine scourge that faces our society today. As this threat evolves from one that is centered primarily on methamphetamine produced by domestic OMGs to one in which international organizations acquire precursor chemicals from sources across the globe, the DEA and its law enforcement counterparts have adapted and responded with a level of flexibility and commitment that is second to none.

Rogelio E. "Roger" Guevara was selected as chief of operations of the Drug Enforcement Administration in May of 2002. As chief of operations, Mr. Guevara is responsible for the overall direction of the worldwide drug enforcement and intelligence operations of the agency and is a principal advisor to the DEA administrator and deputy administrator on all enforcement-related matters.

Mr. Guevara began his drug law enforcement career with the DEA's predecessor agency, the Bureau of Narcotics and Dangerous Drugs, in September of 1972 in Los Angeles, California. In 1974, Special Agent Guevara received the DEA Award of Honor, the highest award in the agency, for his performance as part of a Joint U.S./Mexico Task Force targeting a principal area of narcotics production.

From 1978 to 1982, he was assigned to the Monterrey, Mexico DEA Office. In 1982, he returned to Los Angeles to open the DEA Riverside office where he worked until 1985. Mr. Guevara was reassigned to the Los Angeles Divisional Office in 1985 where he served in the public affairs office until 1987.

In 1987, Special Agent Guevara was promoted to a supervisory position, in charge of the Southeast Asian Heroin Enforcement Group in Los Angeles. In January of 1992, he was assigned to DEA Headquarters in Arlington, Virginia where he served in the Office of Congressional and Public Affairs until 1994. From late 1994 through 1997, he was reassigned to the Office of Professional Responsibility (DEA Internal Affairs Division) as an inspector. In October of 1997, Mr. Guevara was promoted to the rank of assistant special agent in charge (ASAC) at the DEA Los Angeles Division.

In September of 2000, ASAC Rogelio Guevara was promoted to the Senior Executive Service when he was named special agent in charge (SAC) of the Caribbean Field Division in San Juan, Puerto Rico. In this position, he had responsibility over domestic operations in Puerto Rico and the U.S. Virgin Islands, as well as six foreign offices in Jamaica, Haiti, Dominican Republic, Barbados, Trinidad and Tobago, and Curacao, Netherlands Antilles.

Rogelio Guevara grew up in the San Gabriel Valley in Los Angeles, California where he attended the California State University from 1969 to 1972. Mr. Guevara graduated with a B.S. degree in police science and administration.

Methamphetamine Epidemics: An Empirical Overview

Jonathan P. Caulkins, Professor of Operations Research and Public Policy, Carnegie Mellon University, Heinz School of Public Policy

Introduction

By all accounts, methamphetamine (meth) use is a significant problem in the United States that is growing in some regions. It raises unique challenges for law enforcement and difficult strategic questions. This article seeks to provide some context for and insight into these questions by looking at historical and spatial patterns in meth-related data indicators.

A guiding principle motivating this exercise is the idea that drug control policy ought to adapt over the course of a drug epidemic and that law enforcement is particularly valuable early in an epidemic cycle. For many illicit drugs, it is clear what stage of the epidemic cycle pertains. Cocaine and marijuana passed through periods of epidemic growth but are now endemic. MDMA is still in epidemic growth (Caulkins, 2000). Heroin is most likely endemic, with reports of small epidemics in places where use has heretofore been rare, such as in rural areas (Hogue, 2001) and suburbs surrounding small- and medium-sized cities (e.g., Prine, 2003).

The issue is more complex for meth for at least two important reasons. First, there is extreme spatial variation in meth use patterns. It is entirely possible that use has stabilized at endemic levels in some western cities at the same time it is growing contagiously in the Midwest and has not even kicked into rapid spread in some East Coast cities. Unfortunately, there is at present very limited knowledge concerning how the existence of a matured epidemic in one location affects a possible new epidemic in a different location (Behrens, Caulkins, & Tragler, 2002).

Second, while information pertaining to illicit drug use and markets is generally poor (Manski et al., 2001), that pertaining to meth is even harder to work with than data for, say, cocaine or marijuana. An indicator of the severity of the problem comes from comparing two pairs of recent official estimates of meth prices, supply, and consumption. The Office of National Drug Control Policy (ONDCP) issued two documents in 2001 (ONDCP, 2001a, 2001b) that included dramatically different annual series for meth prices from 1988 – 2000. The correlation between the two series was only 0.3.[1] Likewise ONDCP (2001b, p. 23) estimates that total U.S. meth consumption quintupled from 10.0 to 54.2 metric tons between 1991 and 1995, before falling back to 18 – 20 metric tons in 1999 and 2000. In contrast, the Drug Availability Steering Committee (2002, p. 74), chaired by the Drug Enforcement Administration, estimates that there were 106.5 – 144.1 metric tons of meth available for consumption in the United States in 2001. To be fair, both documents are quite forthright about the enormous uncertainty surrounding their estimates.

The objective of this article is to overcome these challenges by assembling, synthesizing, and interpreting spatially disaggregated descriptive statistics concerning trends in a meth-related data series. Hopefully this will help policymakers to better understand the current nature and perhaps even the future trends of the

meth epidemics in the United States. (Epidemics are intentionally referred to in the plural because meth trends in the United States are better understood as an agglomeration of many city- and region-specific phenomena, not as a single national epidemic.) Before proceeding to the data, we first briefly review key findings and insights concerning how and why law enforcement's effectiveness may vary over the course of an epidemic cycle.

Overview of Models of Drug Enforcement, Drug Epidemics, and Issues of Timing

Historically, drug use has changed far more dramatically and rapidly than one would expect from exogenous factors alone (Caulkins, 2001). Such extreme variation in drug use has long been described in "epidemic" terms (Bell & Champion, 1977; Hunt & Chambers, 1976), and meth is no exception in this regard (Brill & Hirose, 1969; Tamura, 1989). These are not literally epidemics since there is no pathogen as with HIV or the flu. Nevertheless, drug use is "contagious" in the sense that use by one person can influence initiation by another, as in models of the diffusion of ideas, fads, and consumer product adoption (Bass, 1969).

Since the dynamics of drug initiation, escalation, and use vary so dramatically over an epidemic cycle, it would not be surprising if the effectiveness of various drug control strategies likewise varied over the course of the epidemic (Caulkins, 2001, forthcoming). In recent years, this possibility has been investigated intensively using models that embed market dynamics and the impact of various interventions within a contagious epidemic framework. A common finding is that supply-control interventions in general are relatively most effective in the early, exponential growth stages of a drug epidemic (Tragler, Caulkins, & Feichtinger, 2001), and later, when use is more endemic, treatment and other styles of enforcement may be more productive (Caulkins, 2002).

There are several intuitive ways of understanding why these models produce this result. One is simply that early in an epidemic, demand is spreading very rapidly and has in some sense outstripped supply. Later, demand plateaus and the supply of drug sellers catches up because high-profits attract more entrants, prior convictions create "barriers to exit," or the technology of production diffuses. So late in an epidemic, removing sellers can bring only modest benefits because incarcerated sellers are easily replaced (Kleiman, 1997). Early in the epidemic, they are the "constrained" or "limiting factor," so their removal can reduce availability and slow the contagious spread.

Even early in an epidemic incarcerated sellers can eventually be replaced, so it may not be obvious why the models find such a striking difference in effectiveness. The answer lies in the workings of a nonlinear dynamical system that has a positive feedback (e.g., the contagious spread of initiation) tempered by some perhaps lagged negative feedback. In such circumstances, interrupting supply during the explosive growth stage not only delays the peak in use, but also reduces the magnitude of that peak (Behrens, Caulkins, Tragler, & Feichtinger, 2000). Depending on the details of the model and the timing of the intervention, the temporary disruption can in some circumstances lead to a quite dramatic moderating of the subsequent course of the epidemic.

One class of models, which yields amplified effects of enforcement when properly timed, is "tipping point" models (Schelling, 1978). Tipping models are characterized by (at least) two stable equilibria. Either low or high levels of use can persist indefinitely absent some intervention or exogenous shock. These models view explosions in drug use as instances of "tipping" from the low to the high level equilibrium. One implication is that policymakers should do whatever they can to prevent that tipping (Kleiman, 1993; Tragler et al., 2001). In other words, timely and aggressive investments in enforcement that cut short contagious spread may keep the drug from becoming a truly mass market phenomenon.

A second class of such models includes lagged negative feedback from drug use to initiation. Musto (1973) hypothesized from long-run historical considerations that when some users progress to dependence, they serve as a sort of negative advertisement warning potential initiates of the drug's dangers. Egan's (1999) journalistic description of the ebbing of New York City's crack epidemic is similar in spirit. This qualitative model was elaborated by Kleiman (1992) and formalized by Behrens, Caulkins, Tragler, Haunschmeid, & Feichtinger (1999); Behrens et al. (2000); and Behrens, Caulkins, Tragler, & Feichtinger (2001).[2] A key finding is that interventions that slow the spread of an epidemic until the endogenous negative feedbacks take effect can prevent the worst effects of the positive feedback loop surrounding initiation.

Understanding of how enforcement and other drug control interventions interact with dynamic epidemiological models of the spread of drug use is still evolving. Nevertheless, there are strong plausible arguments suggesting that enforcement is uniquely effective in the early stages of an epidemic, so it is of interest with respect to meth to inquire as to the stage and nature of the growth trajectory, a topic to which we turn next.

Long-Term National Trends

Traditionally drug policy has focused on the "big three" illicit drugs: (1) heroin, (2) cocaine, and (3) marijuana. This is reflected, for example, in which drugs are singled out for specific mention in news releases and tabulations of data.[3] In many respects, however, meth rivals heroin and marijuana in importance. (Cocaine remains the most problematic drug in the United States in almost every respect except sheer number of users, for which marijuana is first.) Specifically, in terms of both dollar value of black market revenues and enforcement efforts, meth is roughly comparable to heroin or marijuana. Only in drug-related morbidity and mortality as recorded by the Drug Abuse Warning Network (DAWN) does meth trail significantly.[4] (See Table 1.)

Furthermore, as is discussed below, there is great regional variation in meth use, so at the local and regional level, meth can be even more prominent. For example, according to 2001 ADAM data (cited in Maguire & Pastore, 2002, p. 383), the proportion of adult male arrestees testing positive for meth in Honolulu (38%) is greater than the proportion testing positive for heroin in any city, and for cocaine in any city except New York (46%).

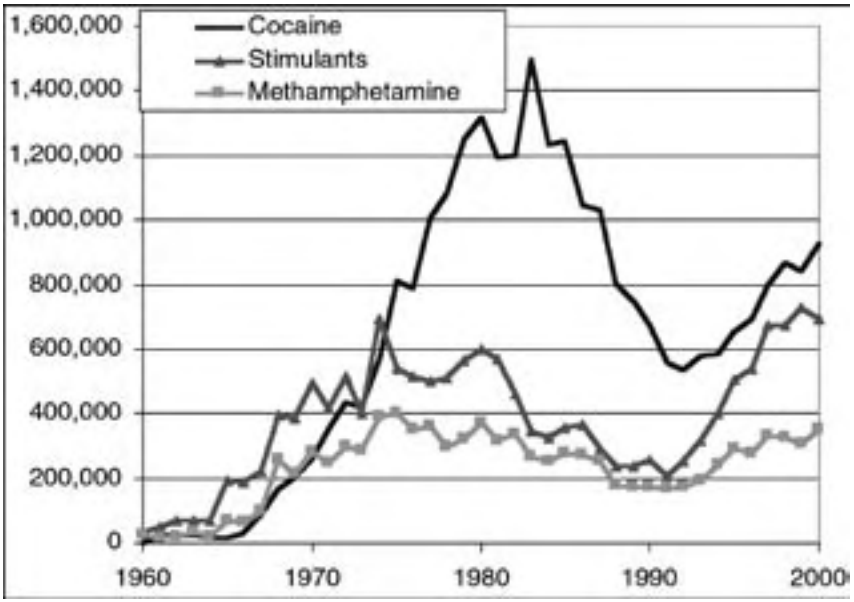
Table 1
Comparison of Magnitude of Problems Associated with Cocaine, Heroin, Marijuana, and Meth

Quantity	Source	Year	Cocaine	Heroin	Marijuana	Meth
Black Market ($B)	ONDCP (2001b)	2000	$35.3	$10.0	$10.5	$5.4
Chronic Users (millions)	""	2000	2.7	0.9	--	0.6
DEA Arrests	Maguire and Pastore (2002)	2000	15,452	3,557	7,783	8,382
% of Federal Drug Prisoners	Sevigny & Caulkins (in submission)	1997	63%	9%	15%	10%
% of State Drug Prisoners	""	1997	69%	11%	8%	9%
Average ADAM Arrestee Urinalysis Rate	Maguire and Pastore (2002)	2001	27%	7%	42%	10%
DAWN ED Mentions	SAMHSA (2003)	2000	174,881	94,804	96,426	13,505
DAWN ME Mentions	SAMHSA (2000)	1998	4,587	4,330	598	501

Some historical context helps to provide a sense of how meth came to be such a significant problem. The longest-running time series one can assemble for meth pertains to the calendar year of initiation as reported retrospectively in the National Household Survey on Drug Abuse (NHSDA).[5] Obviously, there are limitations to such data. Memories are imperfect. Individuals may under-report illegal behavior on government surveys. Some subpopulations are overlooked or under-sampled. Some who initiated many years ago may have died in the interim. Nevertheless, this self-report data may be indicative of broad trends.

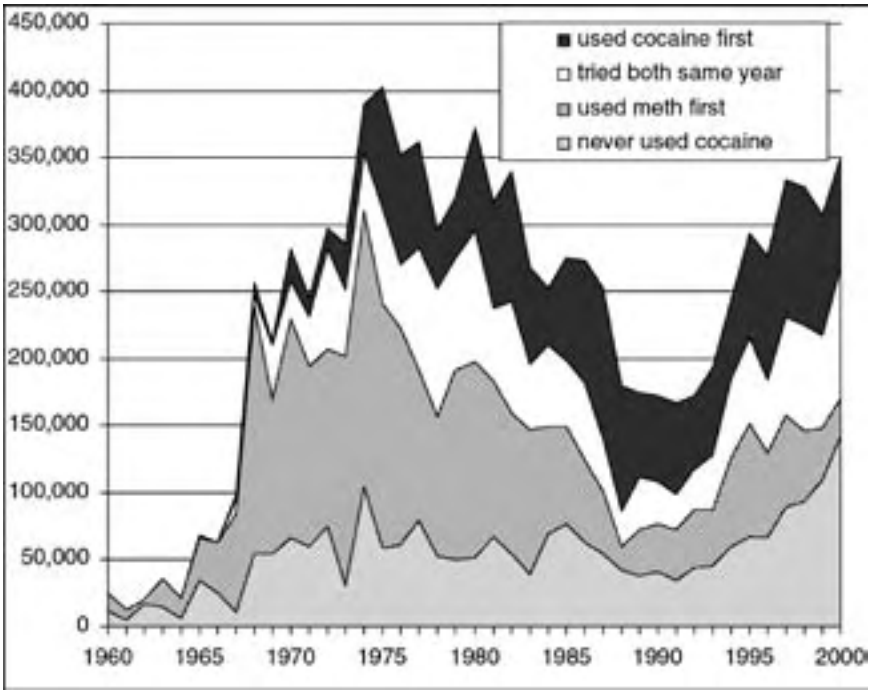
Figure 1 compares estimated annual initiation rates for meth, cocaine, and non-prescription use of prescription stimulants based on combined data from the 1999, 2000, and 2001 household surveys.[6] Through 1970, annual initiation rates were higher for meth than for cocaine. Meth initiation continued to grow to a peak of 400,000 in 1975, but cocaine initiation grew far more. All three series fell to lows in the early 1990s but have since rebounded, almost doubling for meth, increasing by about 60% for cocaine, and more than tripling for stimulants.

Figure 1
Number of First-Time Users of Meth, Cocaine, and Non-Prescription Use of Prescription Stimulants, 1960-2000



It is not clear how the cocaine epidemic affected initiation into meth use. To some extent, the two drugs may be substitutes, so the popularity of cocaine may have preempted some meth initiation. On the other hand, individuals who become dependent on cocaine often become polydrug users, at least trying quite a wide range of substances even if cocaine remains their primary substance of abuse. Given the lag between cocaine initiation and dependent use (often several years or more), these considerations suggest that the cocaine epidemic may have dampened meth initiation during the 1970s, when trying cocaine was increasingly popular, but also added some initiates during the 1980s, when heavy users were coming to dominate cocaine consumption (Everingham & Rydell, 1994). Figure 2 offers some circumstantial support for this conjecture by breaking down the meth initiation curve, from bottom to top, into individuals who never used cocaine, those who only tried cocaine after initiating meth, those who started using meth and cocaine in the same year, and those who only tried meth after having initiated cocaine.

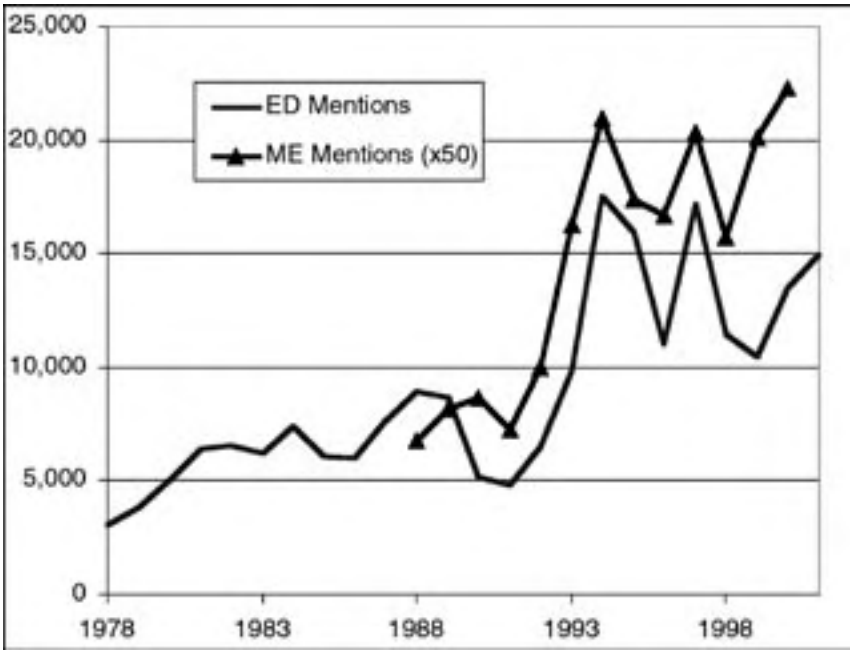
Figure 2
Numbers of People Initiating Meth Use from 1960-2000, Broken Down by Their Level of Prior Cocaine Experience



If one imagined that those who try meth only after using cocaine merely reflect the polydrug use of existing, committed drug users and, hence, are less indicative of the contagious spread of meth among new users, then the decline and rebound of meth initiation before and after 1990 is even more pronounced. That is, Figure 1 suggests that meth use spread rapidly in the early 1960s and has averaged about 280,000 initiates per year since 1970, roughly doubling from a trough of 170,000 around 1990 to about 350,000 in 2000. Excluding those who initiated cocaine a year or more before trying meth obviously reduces the average number of meth initiates (to 215,000), but it makes the recent run-up more dramatic, roughly a tripling from about 90,000 in 1990 to 270,000 in 2000.[7]

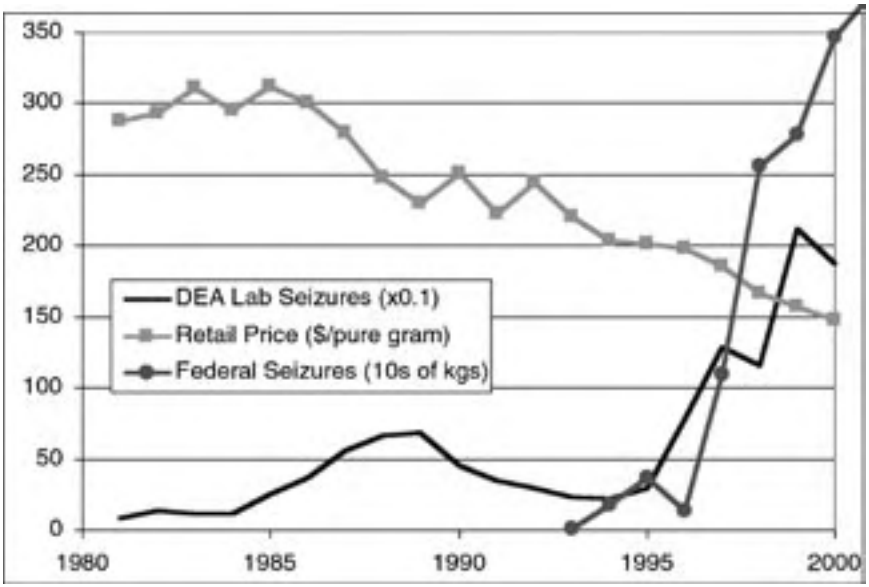
The increase in initiation during the 1990s has been paralleled in general by increases in emergency department (ED) and medical examiner (ME) mentions recorded by DAWN.[8] (See Figure 3.) There have been abrupt and not insubstantial variations in these DAWN series. Cunningham and Liu (forthcoming) suggest that similar oscillations in hospital admissions for meth may be linked to regulations designed to control precursors, although Reuter and Caulkins (forthcoming) note that other related trends showed at most weak concordance.[9]

Figure 3
DAWN-Measured Trends in Meth-Related Emergency Department and Medical Examiner Mentions



One would like to likewise plot long-term trends in meth enforcement, but this is complicated by the fact that standard-tabulations of criminal justice statistics infrequently separate out meth-related activity explicitly (e.g., Uniform Crime Report (UCR) data breaks down arrests only by marijuana, cocaine/heroin, and other drugs). Figure 4, however, shows numbers of meth labs seized by the DEA (Maguire & Pastore, 2002), quantity of meth seized by all federal agencies (ONDCP, 2003), and average retail meth prices, as reported by ONDCP (2001a). The patterns for these two indicators parallel those for cocaine and heroin, namely, prices drifting lower despite increased enforcement pressure (Bushway, Caulkins, & Reuter, in submission; Caulkins & Reuter, 1998).

Figure 4
ONDCP (2001a) Reported Meth Prices Have Drifted Lower Despite Increased Enforcement Activity by the Drug Enforcement Administration



Regional Variation in Meth Markets

As we have just seen, in broad outlines, aggregate national data concerning meth can be characterized as follows: explosive growth in the 1960s, some oscillation with a general downward trend through 1990, and a substantial rebound (at least a doubling) since 1990.

Some drugs (e.g., cocaine and marijuana) have essentially national distribution and markets, so such aggregate patterns are mirrored to a greater or lesser extent in most cities and regions. Others manifest striking geographic variation. For example, in the late 1980s and again in the mid-1990s, rates of arrestees testing positive for PCP in Washington, DC, were many times higher than they were a few miles away in Baltimore.[10]

Meth is more like PCP in this regard. By at least some measures, it displays the greatest spatial variation in use, at least among the most important drugs of abuse. Table 2 illustrates this in terms of DAWN ED mentions in 2001 (SAMHSA, 2002a). For each major substance of abuse and each city, numbers of drug-specific mentions were normalized by the total number of ED mentions for all causes in that city. This helps adjust for the different sizes of different cities. Looking only at raw numbers of meth mentions might suggest that Los Angeles, with 1,517 mentions, has a more acute problem than either Phoenix (604 mentions) or San Francisco (611 mentions). Los Angeles, however, is simply a bigger city and has more ED mentions in total (2,435,000) than do Phoenix or San Francisco (937,000 and 545,000, respectively). So, the number of meth mentions per 1,000 total ED mentions for Los Angeles and Phoenix in that year were similar (0.62 and 0.64, respectively), and San Francisco

appears to have had the more acute problem (1.12 meth ED mentions per 1,000 total ED mentions).

Having made this normalization, Table 2 then shows the average, standard deviation, and coefficient of variation of the normalized ED mention rates across cities for which DAWN data is reported. (The coefficient of variation is simply the standard deviation divided by the mean. It is a measure of the amount of variation in drug mentions across cities relative to the average rate.) With the exception of Rohypnol, for which the numbers of ED mentions are very small (just 23 in total across all the cities), methamphetamine displays the greatest coefficient of variation (1.31), exceeding even that of PCP (1.20). Not surprisingly, the most widely used substances (alcohol and marijuana) have the lowest coefficients of variation (0.34 and 0.35, respectively). Cocaine is only a bit higher (0.47), reflecting its national distribution.

Table 2
Methamphetamine Has Greater Variation Across Cities in Rates of DAWN Emergency Department Mentions in 2001 Than Does Any Other Major Drug

Substance	Average	Standard Deviation	Coefficient of Variation
Cocaine	3.86	1.81	0.47
Alcohol in Combination	3.68	1.24	0.34
Heroin	2.26	1.53	0.68
Marijuana	1.92	0.68	0.35
Amphetamines	0.46	0.45	0.97
Methamphetamine	**0.28**	**0.37**	**1.31**
PCP	0.12	0.15	1.20
MDMA	0.10	0.06	0.64
GHB	0.06	0.07	1.14
LSD	0.04	0.02	0.56
Misc. Hallucinogens	0.03	0.03	1.10
Inhalants	0.01	0.02	1.19
Ketamine	0.01	0.01	0.76
Rohypnol	0.00	0.00	1.95

Results are similar for 2001 ADAM data, as reported by Maguire and Pastore (2002, p. 383), concerning the proportion of male arrestees who test positive across 31 cities. Marijuana shows the smallest coefficient of variation (0.17). Cocaine and heroin are intermediate (0.34 and 0.65, respectively). Methamphetamine is much higher (1.14), with only PCP (1.40) showing greater spatial variation.

Although spatial variation in meth use is substantial, it is not purely random. There are regional effects (e.g., monthly time series on treatment admissions for methamphetamine in California and neighboring Oregon are strongly correlated).[11] DAWN medical examiner data for the six cities with the most mentions between 1988 and 2000 shows something similar. (See Table 3.) There is a clear geographic relationship. Trends in meth medical examiner (ME) mentions for cities that are

physically close (most noticeably Los Angeles and San Diego) are highly correlated. Philadelphia, the only one of the six cities that is east of the Mississippi, stands out as an outlier from the other five.

Table 3
Correlation in Meth ME Mentions from 1988-2000
(Dark shading indicates high correlation; light shading, medium correlation)

	San Francisco	Los Angeles	San Diego	Dallas	Phoenix	Philadelphia
San Francisco	1	0.73	0.72	0.29	0.65	0.14
Los Angeles	0.73	1	0.85	0.71	0.66	-0.07
San Diego	0.72	0.85	1	0.82	0.66	0.00
Dallas	0.29	0.71	0.82	1	0.53	-0.22
Phoenix	0.65	0.66	0.66	0.53	1	-0.49
Philadelphia	0.14	-0.07	0.00	-0.22	-0.49	1

As is well-known, longitude is a strong predictor of this variation: meth is far more common in the western parts of the United States than in the East.[12] Table 4 illustrates this by ranking cities in terms of meth ED mentions per 1,000 total ED mentions in 2001. Except for Atlanta (normalized meth ED rate of 0.14) exceeding Saint Louis (0.13) and Dallas (0.11), no city east of the Mississippi River had a higher normalized DAWN meth ED rate than did any city west of the Mississippi.

Table 4
Meth DAWN ED and ADAM Urinalysis Rates are Higher West of the Mississippi

City	Meth DAWN ED Mentions in 2001 per 1,000 Total ED Mentions	% of Male Arrestees Testing Positive for Meth in 2001
San Francisco	1.12	NA
San Diego	1.08	27
Phoenix	0.64	25
Los Angeles	0.62	NA
Seattle	0.56	11
Minneapolis	0.40	3
Denver	0.17	4
Atlanta	0.14	NA
St. Louis	0.13	NA
Dallas	0.11	2
Miami	0.04	NA
Philadelphia	0.03	0
Chicago	0.02	NA
Washington	0.02	NA
Buffalo	0.01	NA
Boston	0.01	NA
Baltimore	0.01	NA
Newark	0	NA

This east-west spatial variation in ED mentions appears to be mirrored by spatial variation in meth retail price and purity, as reported by the ONDCP (2001a). There are relatively few purchase observations upon which such annual price series can be estimated, so the series are noisy. Hence, Table 5 reports simple averages over 1991-2000 of retail prices and purity (i.e., for purchases of 10 grams or less). Still, it is clear that the purity is higher and purity-adjusted prices lower in the western regions with the greatest rates of use, as measured by DAWN.

Table 5
Average Retail Methamphetamine Price and Purity Indicate Greater Availability in the Western United States than in the East

Region	Price per Pure Gram	Purity
Pacific	$256	45
Mountain	$495	35
West Central	$655	26
Northeast	$672	19
East Central	$706	23
Southeast	$742	22

Inverse Correlation in Regional Variation Between Meth and Other Substances

There is another perspective on spatial variation in meth use that is less widely appreciated. To some extent, meth appears most common in those cities where the "big three" illicit drugs are less common. That is, there is an inverse correlation between meth ED mention rates per 1,000 total ED mentions and the corresponding rates of these three other substances. Conversely, meth rates are positively correlated with three other amphetamine-related compounds (i.e., amphetamines, ketamine, and MDMA) and several other miscellaneous substances (e.g., LSD and GHB), many of which are "club drugs" or are associated with rave culture.

Table 6 shows that to some extent one can view this as two "blocks" of substances: (1) the "big three" plus alcohol-in-combination and (2) methamphetamines and most other illicits.[13] In particular, the table shows pairwise correlations across substances, with dark shading indicating positive correlations of one-half or more and light shading indicating positive correlations of one-third to one-half. This blocking is far from perfect. There are DAWN cities with high rates of ED mentions for cocaine but not heroin (notably Atlanta and Miami) and vice versa (Newark and San Francisco). In contrast, among Table 4's list of cities with high rates of DAWN meth mentions, with the exception of San Francisco's high-rates of heroin mentions, none has unusually high rates of mentions for any of the traditional "big three" until one drops all the way down to Atlanta (and its high rates of cocaine use).

Table 6
Correlations Across Cities in DAWN ED Mentions per 1,000 Total ED Mentions for Pairs of Substances Blocked into Two Groups: (1) The "Big Three" Illicits Plus Alcohol in Combination and (2) Meth and Almost All Other Illicit Drugs

	Alc.	Coke	MJ	Heroin	Amphet	Meth	MDMA	Ket.	LSD	Misc H	GHB
Alcohol in Combo	—	0.79	0.80	0.21	-0.21	-0.10	0.23	-0.34	0.25	-0.07	-0.17
Cocaine	0.79	—	0.64	0.50	-0.32	-0.30	0.31	-0.29	-.20	-0.17	-0.08
Marijuana	0.80	0.64	—	-0.05	-0.25	-0.22	0.12	-0.39	0.17	-0.15	-0.30
Heroin	0.21	0.50	-0.05	—	0.05	-0.08	0.21	0.28	-0.13	-0.01	0.17
Amphetamines	-0.21	-0.32	-0.25	0.05	—	0.93	0.43	0.62	0.50	0.59	0.54
Methamphetamine	-0.10	-0.30	-0.22	-0.08	0.93	—	0.41	0.38	0.47	0.51	0.63
MDMA	0.23	0.31	0.12	0.21	0.43	0.41	—	0.23	0.62	0.50	0.61
Ketamine	-0.34	-0.29	-0.39	0.28	0.62	0.38	0.23	—	0.09	0.25	0.54
LSD	0.25	0.20	0.17	-0.13	0.50	0.47	0.62	0.09	—	0.66	0.37
Misc. Hallucinogens	-0.07	-0.17	-0.15	-0.01	0.59	0.51	0.50	0.25	0.66	—	0.48
GHB	-0.17	-0.08	-0.30	0.17	0.54	0.63	0.61	0.54	0.37	0.48	—

Parallel analysis with ADAM data concerning arrestees' rates of testing positive in 2001 shows that the strongest positive correlation is between cocaine and heroin (0.49) and the strongest negative correlation is between cocaine and methamphetamine (-0.75). Indeed, rates of testing positive for cocaine and methamphetamine are so strongly negatively correlated that the sum of their two rates is remarkably stable across the 31 cities, with a coefficient of variation almost as low as that for marijuana.[14] That is, cities with high cocaine rates had low meth rates and vice versa, so the total rate of "stimulants" (cocaine + meth rates) varied only modestly across cities. (See Table 7.)

Table 7
For Proportions of Arrestees Testing Positive as Measured by ADAM in 2001, Results for Methamphetamine Vary Dramatically Across the 31 Cities, but the Sum of Meth + Cocaine Rates Shows Much Less Variation

	Min	Max	Mean	Std Dev	Coeff of Var
Cocaine	9	46	26.8	9.1	0.34
Marijuana	27	58	42.1	7.1	0.17
Opiates	1	18	6.5	4.3	0.65
Methamphetamine	0	38	10.0	11.5	1.14
PCP	0	9	1.5	2.2	1.40
Cocaine + Meth	20	53	36.8	7.6	0.21

There may also be some rural-urban variation [e.g., 2001 NHSDA (based on author's analysis of data available at www.icpsr.umich.edu/SAMHDA/) respondents living outside a metropolitan statistical area (MSA) were 25% more likely than those living in an MSA to report past-year use of meth]. They were also 13% more likely to report past-year use of a prescription stimulant without a prescription (but 30% less likely to report past-year cocaine use).

What is perhaps even more striking than the spatial variation is the ethnic variation. In 1998, for both white and Hispanic decedents in the DAWN Medical Examiner system, meth/speed was the sixth most commonly mentioned substance. For blacks, it did not even make the list of the top 15 substances, falling somewhere below number 15 Doxepin's 1.62% mention rate (SAMHSA, 2000, p. 42). Likewise, blacks account for just 3.4% of mentions of stimulants between 1995-2000 in the Treatment Episodes Dataset, and non-white/black high-school senior's lifetime prevalence of amphetamine use has persistently been just 30-40% that of the aggregate figures since the beginning of the survey. In the 2001 NHSDA, Non-Hispanic Black/African-American respondents were only one-fifth as likely to report past-year meth use as were respondents generally. Non-Hispanic Asians were also substantially under-represented, with past-year meth use rates just half those for the nation as a whole.

City-Specific Variation in Methamphetamine Indicators Over Time

The discussion above has established two elementary points. First, aggregate national statistics indicate substantial increases in meth use since 1990. Second, there is so much spatial variation in meth use patterns that national aggregate statistics are of questionable value, no matter whether one looks at that spatial variation in terms of longitude (i.e., meth use is common in the West but not the East) or availability and use of other substances. What one needs, both to understand past variation and project the future, is city- or region-specific time series. At that level of geographic specificity, there are four principal sources of data: (1) DAWN ED mentions, (2) DAWN ME mentions, (3) treatment admissions, and (4) ADAM data on arrestees.

Trends in DAWN ED mentions between 1991-2001 are quite interesting. (See Figure 5.) The total counts are dominated by a handful of cities. In particular, three cities in California (Los Angeles, San Francisco, and San Diego) account for 63% of all mentions for the 21 cities over this time period. The trend in these cities was an increase through about 1994; then there was a decline through about 1999, with a subsequent rebound (partial rebound for San Diego and San Francisco, complete for Los Angeles). The pattern is very similar in Phoenix (13% of all mentions), Dallas (3.0% of mentions), and Denver (2.7%), with peak numbers of mentions in 1994, 1995, and 1995, respectively.

The "rest of the West" area in the figure is dominated by Seattle (7% of all mentions), which shows a different pattern, with mentions in each year from 1999-2001 exceeding the local peak in 1994. The pattern is similar for the other three cities in the "west" layer, although they are geographically "middle" cities (Minneapolis with 3% of all mentions, St. Louis with 2%, and New Orleans with 0.4%). It is by no means clear that the worst of the meth epidemic has passed in these cities, as measured by DAWN ED mentions.

Meth ED mentions east of the Mississippi River are dominated by Atlanta (38% of mentions east of the Mississippi) where DAWN mentions peaked in 1997 at 214 but rebounded in 2001 to 172, and Philadelphia (28% of mentions east of the Mississippi), where the epidemic appears to have been in decline since 1992. In the remaining nine East Coast cities (accounting for just 2.1% of all mentions), counts reached 120 per year in 1994 and have not varied much since.

Figure 5
Meth DAWN ED Mentions by City, 1991-2001

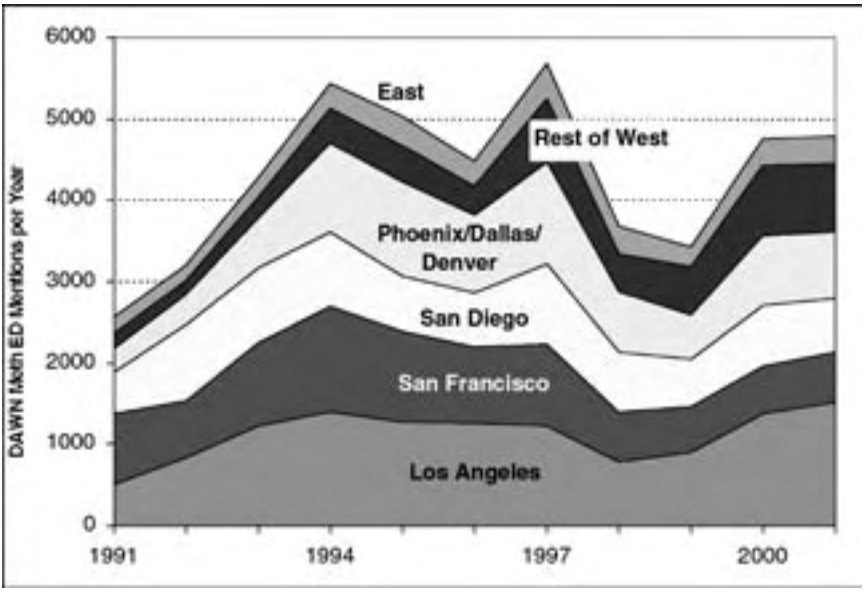
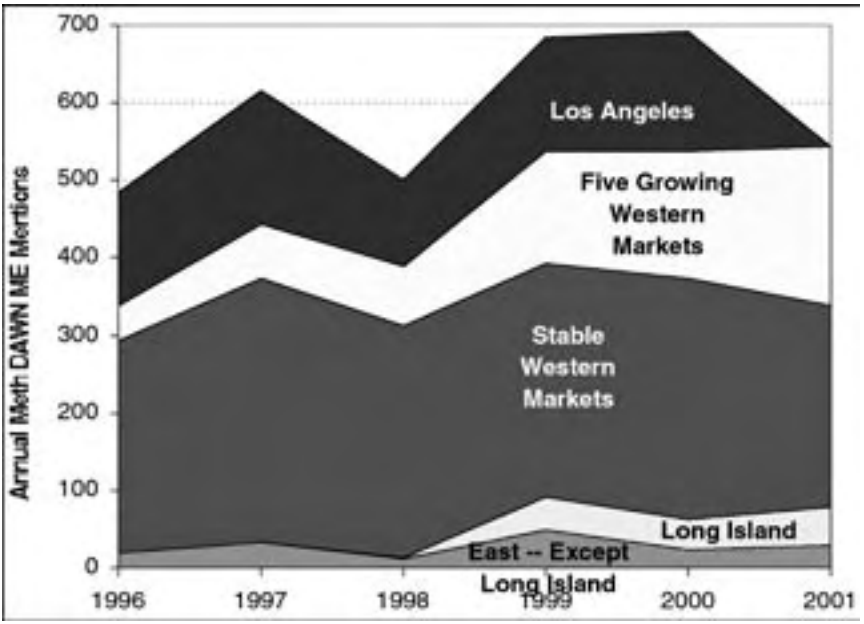


Figure 6 plots DAWN ME data available from 1996-2001 for 36 cities (SAMHSA, 2002b, 2003). One complication is that three cities did not report in 2001. For one, this is inconsequential. Norfolk had no meth ME mentions from 1996-2000. New York City also did not report. For most drug-related time series that is a major omission, but meth ME mentions in New York from 1996-2000 were 0, 5, 0, 2, and 3, respectively, so plotting New York's 2001 missing data point as if it were a 0 is not a major distortion. The third missing city, however, is Los Angeles. It had the most meth ME mentions in each of the years 1996-2000. So Figure 6 devotes a separate area block just to Los Angeles so the artificial decline from 155 mentions in 2000 to "0" in 2001 is visible and can mentally be adjusted for.

The regional variation in Figure 6 mostly parallels that in Figure 5, but the aggregate trend is stable, not declining. As with the ED data, the majority of mentions come from western cities whose numbers of mentions per year are fairly stable. Those cities were Los Angeles and the collection of cities labeled "Stable Western Markets" (San Diego, San Francisco, Las Vegas, Oklahoma City, and eight other cities with smaller numbers of mentions). The next largest contributor is western cities whose problems seem to be growing, at least by this measure, but the specific cities with apparently growing problems are somewhat different. In Figure 6, the five cities labeled as having "growing" problems are Dallas, Denver, Phoenix, San Antonio, and Seattle, with Phoenix accounting for 60% of the total and of the growth. Of these, only Seattle showed an upward trend in ED mentions. (ED data were not available for San Antonio.) For both ED and ME mentions, eastern cities constitute a small but growing share of all meth mentions, but for the ME data, almost all of the growth comes from a sudden and sustained increase from 2 to about 40 mentions in Long Island between 1998 and 1999. (Long Island is not a DAWN ED site.)

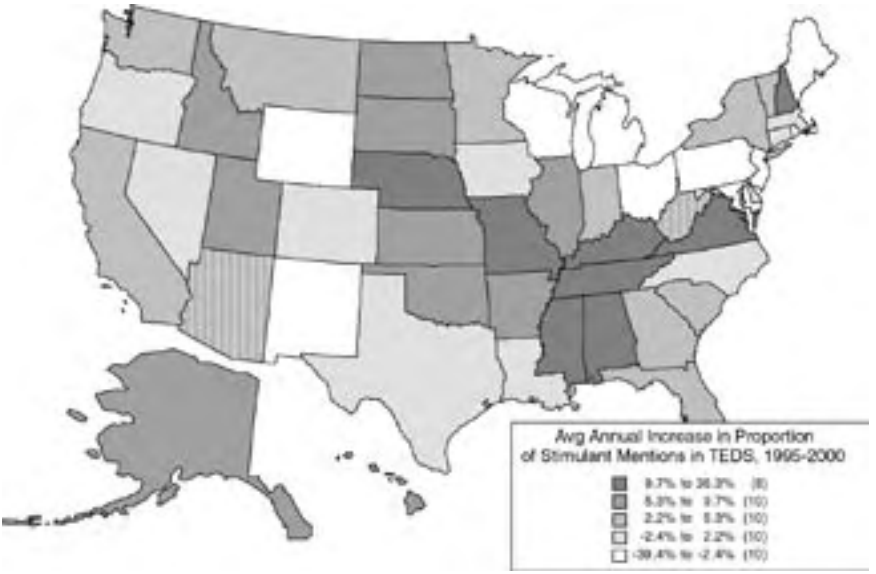
Figure 6
Meth DAWN ME Mentions in 36 Cities, 1996-2001



Treatment admissions information from the Treatment Episodes Dataset does not single out meth, but it does have a variable (STIMFLG) that pertains to mentions of stimulants generally. In light of the sometimes abrupt fluctuations in the total number of TEDS episodes from year to year, particularly at the state level, it is useful to focus on the proportion of TEDS cases mentioning stimulants. From 1995 to 2000, the states with the highest proportions of treatment episodes mentioning stimulants were in the West Coast/Rocky Mountain area, including Hawaii, plus Iowa and Oklahoma. (Figure not shown.)

Nationwide, this proportion of mentions involving stimulants grew at an average annual rate of 4.3% from 1995 to 2000. Figure 7 shows the state-by-state average annual *increases*.[15] (Data are missing for Arizona and West Virginia.) The map shows that the greatest percentage increases were in states in the Midwest and South-Central region; however, for the subset of these states that are east of the Mississippi (i.e., not Nebraska and Missouri), these percentage increases apply to quite low initial base, so even at the end of the period, none of these states had a proportion of treatment episodes involving stimulants that exceeded 5%. There is no evidence of penetration into the Northeast. Indeed, TEDS stimulant mentions were actually declining in much of the Northeast from the already low levels.

Figure 7
State-by-State Average Annual Increase in Proportion of TEDS Mentions That Are for Stimulants, 1995-2000



The final relevant indicator is the Arrestee Drug Abuse Monitoring (ADAM) system. Unfortunately, the biggest geographic hole in ADAM falls precisely in the block of states Figure 7 shows to have the sharpest increases in stimulant mentions in TEDS. Nevertheless, ADAM does have data on 40 cities and a unique ability to quantify the intensity of use, not just the prevalence or presence. Prevalence of use (technically, of the presence of metabolites) can be established objectively by urinalysis, but ADAM also asks respondents whether they have used a given substance in the last year and, if so, on how many days they used it. Self-report data concerning illegal activity is always somewhat dubious, and there is every reason to think that under-reporting could be an even greater problem when the respondents are sitting in a booking facility. With the possible exception of marijuana, however, it is not obvious why the extent of under-reporting necessarily varies greatly across substances. Hence, one can combine the answers to these questions to get a rough sense of the "market share" of meth, cocaine, and heroin, among all instances of use of one of these substances by criminally involved users. This population of respondents is of particular interest not only because of their criminal involvement, but also because they probably account for the vast majority of consumption of these substances (Kleiman, 1992; ONDCP, 2001b). Furthermore, these substances account for the majority of drug market spending (ONDCP, 2001b) and drug-related social problems (Caulkins et al., 2002).

To illustrate the computation, in Los Angeles the self-reported past-year prevalence for ADAM respondents (4th quarter, 2002) for meth, heroin, crack, and powder cocaine was 16.0%, 5.9%, 14.6%, and 7.1%, respectively.[16] Self-reported past year days of use for those reporting past-year use were 107, 30, 96, and 33, respectively. Multiplying associated pairs of these numbers suggests that the average numbers

of self-reported days of past-year use per arrestee in Los Angles were 17.2, 1.8, 7.0, and 3.3 for meth, heroin, crack, and powder, respectively. Again, the actual average number of days of use per arrestee could well be higher. If under-reporting is comparable across drugs, however, this suggests that meth accounted for 59% (17.2 / [17.2 + 1.8 + 7.0 + 3.3] = 59%) of all days of use of expensive illicit drugs by arrestees in Los Angeles.

Table 8 shows that by this measure, meth accounted for half or more of arrestees' consumption of expensive drugs in 12 of the 40 cities with ADAM data. (Shading of cells in the three right-hand columns indicates whether meth, cocaine, or heroin accounted for the plurality of self-reported consumption in the given city.) All 12 are west of the Mississippi. The largest meth "market share" east of the Mississippi was 4.6% in Indianapolis. Meth did not have a dominant market share in all cities west of the Mississippi. Meth's share was below 10% in four of the Texas locations, and no meth use was reported that quarter in Laredo.

Table 8
ADAM Data for 40 Cities, Predominantly from the 4th Quarter of 2002: Shading in Right-Hand Columns Indicates Whether Meth, Cocaine (Crack + Powder Combined), or Heroin Accounted for the Plurality of Arrestees' Self-Reported Consumption of Expensive Illicit Drugs

City	Quarter	% Testing Pos. for Meth	Average Number of Days Used in Past Year					Share of Days of Use of "Expensive" Drugs (in %)		
			Meth	Crack	Powder Cocaine	Heroin	Marijuana	Meth	Cocaine	Heroin
Honolulu	Q4 '02	48.1	63.6	8.5	1.2	2.3	40.9	84	13	3
San Diego	Q4 '02	36.5	41.3	11.1	3.2	10.5	46.5	63	22	16
San Jose	Q4 '02	33.7	39.4	5.3	4.3	4.9	60.5	73	18	9
Phoenix	Q4 '02	33.9	38.8	13.4	7.2	7.1	55.8	58	31	11
Sacramento	Q4 '02	40.6	38.2	14.0	3.3	4.0	86.8	64	29	7
Portland, OR	Q4 '02	25.0	31.3	20.3	13.0	24.5	42.4	35	37	27
Spokane	Q4 '02	25.7	30.9	13.0	4.4	8.6	64.7	54	31	15
Salt Lake City	Q4 '02	27.5	30.1	7.5	9.2	12.9	44.1	50	28	22
Des Moines	Q4 '02	24.0	29.5	1.3	0.6	0.0	50.3	94	6	0
Las Vegas	Q3 '02	21.1	27.1	23.1	6.0	2.1	49.3	47	50	4
Oklahoma City	Q4 '02	14.4	23.7	16.0	6.8	1.3	62.3	50	48	3
Tucson	Q4 '02	9.4	17.9	24.0	14.9	5.8	71.0	29	62	9
Los Angeles	Q4 '02	14.4	17.2	7.0	3.3	1.8	46.2	59	35	6
Tulsa	Q4 '02	16.0	16.4	12.5	1.7	0.0	84.3	54	46	0
Seattle	Q4 '02	10.7	15.2	36.1	15.0	21.9	54.5	17	58	25
Omaha	Q4 '02	21.4	11.3	20.3	4.4	0.0	57.8	31	69	0
Woodbury Cty, MN	Q4 '02	8.9	10.6	2.3	1.7	1.9	45.9	64	24	11
Albuquerque	Q4 '02	7.8	9.8	21.1	7.8	18.3	49.8	17	51	32
Denver	Q4 '02	5.0	8.4	15.6	7.8	11.3	56.6	20	54	26
Kansas City	Q4 '01	1.6	7.9	27.7	11.8	1.0	85.0	16	82	2
Dallas	Q4 '02	3.4	5.0	11.5	10.2	4.7	65.5	16	69	15
Anchorage	Q4 '02	1.2	4.4	15.7	8.1	0.0	53.0	16	84	0
Minneapolis	Q4 '02	5.4	3.8	18.6	4.4	3.9	83.2	12	75	13
Rio Ariba, TX	Q3 '02	0.0	2.7	16.3	24.0	51.5	50.7	3	43	55
Indianapolis	Q4 '02	1.4	2.1	29.8	10.5	3.3	65.8	5	88	7
San Antonio	Q4 '02	2.8	2.1	2.0	12.2	14.0	62.7	7	47	46
Atlanta	Q4 '02	2.8	1.6	45.4	9.3	5.6	52.4	3	88	9
Houston	Q2 '00	0.7	1.0	13.5	8.1	1.6	55.7	4	89	7
Albany, NY	Q4 '02	0.0	0.9	15.9	8.2	11.4	86.6	2	66	31
Birmingham	Q4 '02	0.0	0.9	23.3	11.6	1.6	60.9	2	94	4
New Orleans	Q4 '02	2.2	0.6	29.6	11.6	22.0	72.9	1	65	34
Chicago	Q4 '02	0.4	0.5	38.9	3.6	1.7	80.2	1	95	4
Washington, DC	Q4 '02	0.0	0.4	11.3	6.7	9.6	61.7	2	64	34
Cleveland	Q4 '02	1.2	0.2	20.0	9.9	0.3	75.4	1	98	1
Philadelphia	Q3 '02	0.0	0.2	28.2	10.8	22.8	95.8	0	63	37
Charlotte, NC	Q4 '02	0.0	0.1	33.8	4.7	34.9	84.3	0	52	48
New York City	Q4 '02	0.3	0.0	45.2	16.7	28.4	68.7	0	69	31
Detroit	Q4 '01	0.0	0.0	15.0	3.0	5.3	71.7	0	77	23
Ft. Lauderdale	Q2 '00	0.0	0.0	13.0	6.3	1.7	52.9	0	92	8
Laredo	Q3 '02	0.0	0.0	3.6	12.9	11.6	23.0	0	59	41
Simple Average		0.1	13.4	18.3	8.0	9.4	61.9	26	57	17

Discussion

The characteristics of the spatial diffusion of meth are not yet well understood, but four statements can be made with a high degree of certainty: (1) Meth use can grow very quickly, with indicators sometimes growing by 20% or more per year for a number of years in specific cities, (2) Meth use can reach very high levels; it appears to be responsible for the majority of criminals' days of use of expensive

illicit drugs in a dozen ADAM cities, (3) A substantial proportion of the nation's population lives in regions that meth has essentially not yet reached, (4) Meth is spreading geographically into regions that previously had little meth use.

Together those four statements might seem to be cause for considerable alarm. They do not necessarily imply an impending disaster, however, for two reasons. The less important counter-argument is that the high levels of meth use in a city or region may not be sustained for an extended period, so even if the problem becomes acute in additional regions, those problems might subsequently ebb moderately quickly. Whether that is the case remains an unanswered empirical question, but the ED and ME data for Los Angeles and San Diego are not encouraging in this regard.

The second possible counter-argument is that use may stabilize at levels well below those in Los Angeles or San Diego. The best available evidence concerning this possibility comes from the 17 cities with multiple indicators at reasonably high levels. More specifically, the cities selected were those with data for at least two of the four indicators (DAWN ED, DAWN ME, TEDS, and ADAM) and TEDS stimulant mention proportions averaging at least 3%, plus Philadelphia (important because it is the only East Coast city with a long history of meth abuse) and Phoenix (no TEDS data, but very high levels on the other three indicators). Also, San Jose is paired with San Francisco because it is so close and because it does not have its own DAWN data.

For each of these cities, Table 9 shows recent average levels and average annual growth rates for DAWN ED mentions (1995 – 2001), DAWN ME mentions (1996 – 2001), and the proportion of TEDS episodes mentioning stimulants (1995 – 2000). The cities are rank ordered in terms of descending average of these growth rates (given in the second to last column), where the average includes the DAWN ME growth rate only if the average number of ME mentions is at least 20[17] [e.g., Phoenix' 12% average = (-7% + 13%) / 2]. Finally, the last column gives meth's "market share" in the ADAM data (from Table 8).

The key insight from Table 9 is that even leaving Denver aside, ten of the remaining fifteen cities had average meth problem indicator growth rates of 2% or less. Four of these ten cities with "stable" meth problems stabilized at very high levels of use (Las Vegas, Los Angeles, Oklahoma City, and San Diego). Furthermore, if one assumes San Jose's market share is indicative of what San Francisco's would be if it were an ADAM site, then San Francisco would also be part of this group; however, three of the ten (Atlanta, Philadelphia, and San Antonio) stabilized with meth market shares of 0.3% to 7%. The remaining two "stabilized" cities, Dallas and Portland, have intermediate meth market shares of 16% and 35%, respectively.

Table 9
Meth Problem Growth Rates and Recent "Market Share" Among Arrestees' Use of Expensive Illicit Drugs for Cities with Best Meth Data

	DAWN ED (95-01)		DAWN ME (96-01)		TEDS Prop. (95-00)		Avg. Growth Rate	ADAM (~02)
	Level	Growth Rate	Level	Growth Rate	Level	Growth Rate		Market Share
Phoenix	613	-7%	73	31%			12%	58%
Omaha			6	12%	16%	10%	10%	31%
Salt Lake City			15	4%	23%	10%	10%	50%
Minneapolis	159	15%	5	4%	8%	0%	8%	12%
Seattle	355	10%	11	22%	13%	5%	7%	17%
Kansas City			15	-9%	10%	5%	5%	16%
San Antonio			8	20%	6%	2%	2%	7%
Los Angeles	1194	2%	146	0%	13%	5%	2%	59%
Oklahoma City			49	-5%	20%	8%	2%	50%
Las Vegas			50	0%	29%	3%	1%	47%
San Diego	722	-1%	98	0%	38%	-1%	-1%	63%
Atlanta	146	-3%	3	51%	3%	0%	-1%	3%
Portland, OR			9	3%	20%	-1%	-1%	35%
Dallas	144	-7%	18	21%	12%	0%	-4%	16%
San Francisco	775	-12%	46	-4%	15%	1%	-5%	
San Jose					44%	6%		73%
Philadelphia	69	-8%	10	-27%	2%	-9%	-8%	0%
Denver	143	-10%	8	34%	4%			20%

More generally, in these cities with the best data, of the three growth indicators, the one typically growing the fastest is the DAWN ME mentions. DAWN ED mentions are growing most slowly, and TEDS growth is intermediate. It is perhaps possible that ME mentions are something of a trailing indicator of epidemic growth, with many deaths attributable to long-time chronic users. Some ED mentions are similar, but others can include adverse reactions from inexperienced users.[18] It would be useful in subsequent work to obtain the original data tapes and break down these time series by age of respondent and reason for ED visit.

It is possible then to look at these city-specific trends in a way that gives grounds for cautious optimism regarding the future. *If* the epidemic really has peaked in the western cities that accounted for most of the mentions over the last decade and *if* eastern cities continue to be largely immune to the meth epidemic, then subsequent increases may be confined to the Midwest and South-Central regions. Furthermore, use in cities where meth is still growing (e.g., Kansas City) could possibly stabilize at levels more like what pertains now in San Antonio, rather than San Diego.

Those are very big "*ifs*," however. It is entirely possible that meth use could grow even in cities where it has been common and stable for some time. (Los Angeles' ED figures for 2001 are troubling in this regard.) It is possible that Kansas City's use levels will rise to those of Oklahoma City, if not San Diego, and it is entirely possible that meth will continue its march east, with sharp increases in use next being recorded in cities such as Chicago and Detroit, which heretofore have seen little use.

The future, as always, is uncertain. Nevertheless, this detailed look at the data does clarify some things. For instance, while it is true that recent years have seen large percentage increases in some indicators in some cities, since the mid-1990s those increases have mostly been confined to cities that are small- to medium-sized and/or had a small problem to begin with. The overall national counts have been dominated by what happens on the West Coast and in the Rocky Mountain regions, where meth use seems to have stabilized. Furthermore, not all areas with historically low rates of use are seeing these sharp percentage increases. Hence, it is possible to reconcile the three simultaneous images of stable national data, alarm at sharp increases in some regions, and a frustration in other regions with repeated dire warnings that have not been followed by any increase in use.

Several policy prescriptions emerge from this somewhat complex and nuanced view. Further disaggregation and analysis of these existing data is worthwhile, particularly looking at patterns in specific demographic groups in specific locations (one might wish to look separately at trends in DAWN and TEDS data for younger cohorts). Likewise, the new state-level indicators in the NHSDA could be utilized.

Meth is a large enough and dynamic enough problem that data collection instruments should be modified. DAWN, ADAM, and the NHSDA single out meth, but TEDS and Monitoring the Future ask only about stimulants. UCR arrest data are even less useful.

Those recommendations pertain to further research, but what if any action should be taken today? There is good reason to think that law enforcement is particularly effective during the initial, rapid growth stages of a drug epidemic. There is clear evidence that some specific regions of the country are in those early stages. There is some possibility, though by no means certainty, that this currently regional phenomenon of rapid growth will spread to the populous eastern seaboard. Hence, it would seem prudent to target additional enforcement resources at meth distribution in those specific regions where its use appears to be growing quickly. Presumably, local and state law enforcement agencies in these regions are already doing their utmost to confront the spread of meth. It may, however, make sense for agencies with a national purview, notably DEA and FBI, to shift some of their efforts from more stabilized markets (e.g., for cocaine generally or perhaps meth on the West Coast) into regions where meth is making rapid inroads.

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Endnotes

[1] The price report (ONDCP, 2001a) showed a more or less steady decline in prices. In the report on drug users' spending (ONDCP, 2001b), prices first increased, then fell sharply before increasing again. Below we display the first series because it came from a report whose primary results pertained to prices, rather than reporting prices merely as an intermediate result, and because estimates of short-term variation may be less reliable than overall secular trends.

[2] Agar and Wilson (2002) independently developed a model for heroin epidemics with a similar reputational dynamic.

[3] The Monitoring the Future Survey's core questions only ask about amphetamines, not meth, and the NIDA news release on the 2002 Monitoring the Future survey results had separate sections for marijuana, cocaine, heroin/opiates, cigarettes/smokeless tobacco, inhalants, hallucinogens, club drugs, and alcohol (http://www.nida.nih.gov/Newsroom/02/NR12-16.html), but not amphetamines or meth.

[4] There is not good data on which drugs are responsible for spreading HIV, HCV, and other drug-related infectious diseases. Heroin is probably the worst

offender in this regard, but since meth is often injected, it may also be a prime contributor.

[5] NHSDA, MTF, and TEDS data were accessed via the Substance Abuse and Mental Health Data Archive at http://www.icpsr.umich.edu/SAMHDA/das.html.

[6] Plotting points are simple averages of IRMTHYFU, IRCOCYFU, and IRSTMYFU variables, excluding years in which the survey was run (i.e., the 1999 survey was not used to estimate initiation in 1999 or 2000, and the 2000 survey was not used to estimate initiation in 2000).

[7] Another data source for long-term trends concerning initiation is Monitoring the Future, but its core questions consider only amphetamines, not meth. Past-year amphetamine use by high-school seniors roughly tracks the initiation trends derived from the NHSDA data from 1975-1990, except for a roughly three-year spike between 1979-1981. The MTF amphetamine series, however, shows more modest increases in the 1990s (from a low of 7.1% in 1992 to 10.9% in 2001).

[8] Medical examiner mentions cited here are for the six cities with the most mentions and reporting consistently: San Francisco, Los Angeles, San Diego, Dallas, Phoenix, and Philadelphia. Extended series were produced by combining overlapping, multiyear published series. Series from 1991-1994 and from 1994-2001 were combined by scaling city-specific data in the first data set so its 1994 value matched the second series' value for that city in 1994.

[9] Note: Amphetamine ED mentions recorded by DAWN grew even faster (61% per year, compounded) between 1991-1994 than did meth ED mentions.

[10] Peter Reuter gets credit for pointing this out.

[11] Steve Suo, personal communications. The correlation was 0.95 over entire available data range of September 1992 through June 2001.

[12] Note: MTF data on lifetime prevalence of amphetamine use shows minimal differences between the west, north central, and northeast. Until the mid-1980s, rates were about 20% lower in the south, but that difference has since disappeared.

[13] PCP, Rohypnol, and inhalants do not seem to belong to either "block"; their ED mention rates are not highly correlated with any other substances.

[14] It would be interesting as well to look at the coefficient of variation across sites in the proportion testing positive for *either* cocaine or methamphetamine, but that requires access to the original data files.

[15] More specifically, a best-fitting linear trend was passed through the annual data points, and its slope was divided by the average proportion of mentions over the period. There are strong and interesting parallels between this map and the DEA's map of meth laboratory incidents in 2001 (http://www.usdoj.gov/dea/pubs/pressrel/methmap.html).

[16] This detailed ADAM data was accessed via the National Institute of Justice's Public Data Site at <http://www.adam-nij.net/datapub.asp>.

[17] No average growth rate is listed for Denver because it had few ME cases (average of eight per year), and its TEDS stimulant proportions for 1998 to 2000, and to a lesser extent even for 1997, are suspect since the total number of TEDS episodes reported for Denver in those years is very low (e.g., just nine TEDS cases in 2000). The average TEDS rate listed in the table for Denver is for 1996 to 1998.

[18] This is purely conjectural, but it is worth noting that in 1998, individuals 25 years old and younger account for just 10% of all DAWN ME mentions vs. 30% of DAWN ER mentions and about 25% of TEDS mentions.

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Methamphetamine Use in the United States: An Overview

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An Overview of Patterns of Methamphetamine Use in the United States

The stories were terrifying. The abuse of methamphetamine, a more potent sister of the amphetamines, was sweeping the country like wildfire. Within a few short years, the United States would be awash in "ice"—recrystalized methamphetamine sulfate. Methamphetamine was, according to the media in the late 1980s, the drug of choice for a "new generation." Methamphetamine would replace heroin, cocaine, and even marijuana as the nation's premier problematic drug. Law enforcement was put on notice: "crystal meth" or "crank" (other terms for illicit methamphetamine sulfate) was the drug to watch—or so the media announced in the late 1990s (Lerner, 1989; Young, 1989).

Every decade or two, a particular drug or drug type is designated by the media as, in the words of criminologist Ronald Akers, the "scary drug of the year." A panic or scare is generated about its use, and headlines scream out the danger its use poses. A tidal wave of abuse has hit or is about to hit our shores, these stories assert, and we should be prepared. In the 1930s, that drug was marijuana; in the 1960s, it was LSD; in the late 1970s, it was PCP; in the 1985-1990 era, it was crack cocaine. Just as the crack scare had begun to die down, a smaller but no less terrifying scare emerged over the use of methamphetamine. In every case, the headlines were exaggerated. Experts do not doubt the dangers attendant upon compulsive drug use, but they do argue that the headlined drugs are not nearly as harmful, nor are they likely to be used as compulsively, or as widely, as most of these headlines claimed. Sober, systematic evidence eventually revealed that the vast majority of episodes of PCP use did not result in self-destructive or violent behavior, that neither LSD nor crack use by expectant mothers produced birth defects in their babies, and that very few crack users engaged in the "inferno of addiction" described by the press. Now, the proclamations that smoking marijuana causes, as was claimed in the 1930s, a frenzy of violence and insanity, is regarded as fanciful, even laughable.

What of methamphetamine? Is the country "awash" in "ice"? Has "crystal meth" become the drug of choice for our younger generation? Is it as dependency-producing as the headlines proclaimed? What evidence do criminologists, epidemiologists, and sociologists have of the use of this powerfully reinforcing drug?

Introduction

Compared with the amphetamines, methamphetamine use tends to escalate—far more rapidly—to high-dose, compulsive abuse. Methamphetamine is more potent than any of the amphetamines; it can cross the blood-brain barrier more rapidly and is metabolized more efficiently. A drug's effect is also influenced by route of administration, that is, how it is taken. Amphetamine has traditionally been taken orally via capsule or sniffed in powder form, while methamphetamine, in addition to

being snorted, is also injected and smoked; less commonly, although occasionally, it is ingested in pill or other form. John Kramer, who studied amphetamine addiction in the 1960s, said at the time that the drug, administered intravenously, "is an ecstatic experience." The user's first thought is, "Where has this been all my life?"

At one time, methamphetamine was prescribed under the brand name Methedrine; it is no longer legally manufactured in the United States. (Another methamphetamine is currently marketed in pill form under the brand name Desoxyn; it is a Schedule II drug.) In the 1960s, Methedrine was injected intravenously in high doses; a sizeable "speed scene" developed, which involved tens of thousands of youths taking huge doses day in and day out. Use peaked around 1967 and declined sharply after that. Many "speed freaks" (as compulsive, high-dose users of Methedrine were called) at the time eventually became heroin addicts because they alternated the use of methamphetamine, a stimulant, with heroin, a depressant, so that they could "come down" from their Methedrine high. They began to use more and more heroin and less and less methamphetamine, and eventually, the heroin took over. Considering the way that Methedrine was used by speed freaks, heroin turned out to be a safer, easier drug to take, and it had less of a deleterious impact on their lives.

Although the street speed scene did not last a very long time, it had a tremendous impact on its participants' lives. What was it like? The speed freak of the late 1960s took Methedrine to get high. More specifically, the drug was injected intravenously to achieve a "flash" or "rush," whose sensation was likened to an orgasm—a "full body orgasm"—or a jolt of electricity. Extremely large quantities of the drug were taken. While five to ten milligrams of Dexedrine or Dexamyl taken orally via tablet or capsule would represent a typical therapeutic or instrumental dose of an amphetamine, the speed freak would inject as much as half a gram or a full gram (500 or 1,000 milligrams!) of Methedrine in one intravenous dose. Such massive doses of speed would cause unconsciousness or even death in a nonhabituated person but a pleasurable rush in the experienced user. Since amphetamine inhibits sleep, intravenous administration every four hours or so causes extended periods of wakefulness, often two to five days at a stretch (called a "run"). This would be followed by long periods of sleep ("crashing"), often lasting up to 24 hours (Carey & Mandel, 1968).

In the late 1980s, the heavy use of methamphetamine made a comeback; it began in Hawaii and spread to California. The current form of methamphetamine is considerably more potent than its older version, Methedrine. (Its current manufacture involves a somewhat different chemical process, in which ephedrine, a heart and central nervous system stimulant, is used as its precursor drug.) The effects of methamphetamine last a long time, 12 hours; its half-life is at least as long, and it takes two days to be totally eliminated from the body. Its relatively slow breakdown rate means that if taken daily, accumulation can occur. This both boosts the effect of each subsequent dose and potentiates serious organic harm.

The chemical process to produce methamphetamine is extremely simple, and its precursor chemicals are readily available. As a consequence, until the mid-1990s, most of the meth used in this country was manufactured either by biker gangs or very small "mom and pop" operations, mainly in the southwestern United States, usually California. According to the Drug Enforcement Administration (DEA), however, beginning about ten years ago, Mexican gangs began muscling into the bikers' turf and managed to wrest a majority of the business away from them. In 1994, a total of

263 methamphetamine labs were seized by American authorities. In 2000, 1,800 were seized by the DEA alone, and 4,600 by local and state police. In the last two or three years, methamphetamine originating from Canada began to be seized. In addition, methamphetamine tablets that had its origin in Southeast Asia began to show up on the streets of America's cities (www.dea.gov/pubs/intel/01020/index.html).

ADAM

In 1987, at the initiative of drug researcher Eric Wish, the National Institute of Justice established DUF—the Drug Use Forecasting program (Wish, 1995). In 1997, the name of the program was changed to ADAM—the Arrestee Drug Abuse Monitoring Program. During each year, a sample of persons who are arrested for violent crimes, property crimes, drug crimes, DWI, and domestic violence crimes is drawn in the counties in and around most of the nation's largest cities. These arrestees are approached and asked whether they would be willing to be interviewed and supply urine samples. Responses are confidential, and neither testing positive for drugs nor giving information about illegal activities results in any legal consequences. For both males and females, roughly 85% of the arrestees who are approached agree to an interview, and of these, 85% agree to provide a urine specimen. Today, four separate ADAM samples are drawn: (1) adult males, (2) adult females, (3) juvenile males, and (4) juvenile females. What is so remarkable about ADAM is that it accesses populations that are inaccessible by means of more conventional research methods, such as surveys. Most of ADAM's respondents would not be drawn by the National Household Survey on Drug Abuse's or Monitoring the Future's samples because many of them do not live in conventional households. For anyone interested in the relationship of drug use and crime, ADAM is the best place to start.

Table 1 presents the median percentages for male and female arrestees testing positive for the drugs indicated, in the metropolitan counties participating in ADAM's program for the years 1990 and 2000. This table tells several stories.

Table 1
Median Percentage, All Counties, Adult Arrestees Testing Positive, 1990 and 2000

	1990		2000	
	Males	Females	Males	Females
Any Drug	56	64	63.0	62.5
Cocaine	45	49	29.3	33.3
Marijuana	20	12	40.8	26.7
Opiates	6	11	6.3	7.5
Methamphetamine	*	*	1.9	5.3
PCP	*	*	0.3	0.0

*Not recorded in 1990.

Source: Drug Use Forecasting (DUF), 1991; Arrestee Drug Use Monitoring Program (ADAM), 2003a.

Quite obviously, the first story of Table 1 is that arrestees—presumably, all or almost all of whom are criminal offenders—are *extraordinarily* highly likely to use drugs. In 2000, in *all* sites, more than 50% of adult male arrestees tested positive for at least one drug,

and the median percentage testing positive for one or more drugs for both males and females was 63%. In stark contrast, according to the national household drug abuse survey (discussed below), only 7% of the American population say that they used at least one illicit drug once or more during the past *month.* With most tests employed, no drug (except for marijuana) can be detected more than a week or two since most recent use—most in fact are detectable only within two to three days of most recent use. The chances are, if that 7% figure is accurate, less than 3% of the American population would test positive for an illegal drug; in other words, they would have used recently enough to have traces in their bodies. When you compare this statistic with the fact that roughly two-thirds of arrestees test positive for at least one illicit drug, the message is loud and clear: Compared with a cross-section of the population at large—most of whom are *not* criminals—criminal offenders are *extremely* likely to use psychoactive drugs; in fact, they are *hugely* more likely to do so—on the order of 20 times—than is true of nonoffenders.

Another statistic conveyed by Table 1 is that female arrestees are a bit more likely than males to test positive for the presence of cocaine and heroin and *much* more likely for methamphetamine, but less likely for marijuana, and very slightly less likely to do so for PCP. Table 1 also indicates that PCP is an *extremely* rarely used drug among arrestees: For males, in the median county, only 0.3% tested positive for PCP, and for females, in more than half the metropolitan counties in the country, *no one* tested positive for PCP. Additionally, "Ice," "crystal," or methamphetamine is also fairly rarely used; for male arrestees, a median of 2% and for females, 5% tested positive. Opiates (mainly heroin) are also fairly rarely used, although more so than for PCP and meth. Marijuana (for men, a median of 40.8%) and cocaine (again, for men, a median of 29.3%) are *by far* the two premier drugs that arrestees have taken recently. Table 1 also shows that between 1990 and 2000, while cocaine use declined significantly, eighth, marijuana use increased. To be more specific, for cocaine, arrestees testing positive in the median county declined 16%, and for marijuana, the figure doubled. Marijuana seems to be becoming the drug of choice of the nation's criminals, especially among the young (Golub & Johnson, 2001).

In short, with respect to methamphetamine use, ADAM's data indicates that, nationwide, the drug does not rank in the top two or three of the most commonly used illicit substances among arrestees.

Table 2 highlights the changes for male arrestees between 2000 and 2002. While they are not dramatic, they are fairly consistent. Only for Charlotte, NC, there was a decline in positive tests for methamphetamine, and in three areas that had no methamphetamine positives in 2000 (Albany, Laredo, and Philadelphia), there was no change in 2002. For all other areas which reported in both 2000 and 2002, the percentage of male arrestees testing positive for methamphetamine increased. The percent testing positive for the *median* area increased from 2.6 to 4.0%, and the *mean* increased by 3.1 percentage points. For three areas (Honolulu, Phoenix, and Omaha), the increase was on the order of 10%. Perhaps equally as important, the nation's two largest cities—New York and Chicago—cities that had *no* positive methamphetamine tests for male arrestees in 2000, registered *some* positives for 2002. In other words, in the early years of this century, among male arrestees, methamphetamine use is not only increasing nationwide, it is also making inroads into areas in which it was previously unknown. This is a significant development for a drug whose use is so strikingly regional in character.

Table 2
Arrestees Testing Positive for Methamphetamine and Cocaine, Males Only

Catchment Area	2000 Testing Positive for . . . Meth	Cocaine	2002 Testing Positive for . . . Meth	Cocaine
Albany, NY	0.0	24.6	0.0	25.5
Albuquerque, NM	4.7	34.8	6.7	37.5
Anchorage, AK	0.2	22.1	1.5	20.4
Atlanta, GA	0.5	48.5	2.1	49.4
Birmingham, AL	0.2	33.0	0.6	34.3
Charlotte, NC	1.4	43.5	0.2	33.7
Chicago, IL	0.0	37.1	0.3	47.9
Cleveland, OH	0.1	38.4	1.5	34.6
Dallas, TX	2.1	27.7	4.0	30.7
Denver, CO	2.6	35.4	3.8	32.7
Des Moines, IA	18.6	11.0	20.2	10.2
Ft. Lauderdale, FL	0.0	30.9	*	*
Honolulu, HI	35.9	15.8	44.8	9.1
Indianapolis, IN	0.7	31.1	1.5	34.9
Laredo, TX	0.0	45.1	0.0	36.2
Las Vegas, NV	17.8	22.5	22.9	24.2
Los Angeles, CA	*	*	14.8	32.1
Minneapolis, MN	1.6	25.7	3.9	30.8
New Orleans, LA	0.2	46.6	1.3	42.4
New York, NY	0.0	48.8	0.5	49.0
Oklahoma City, OK	11.3	22.4	14.3	25.5
Omaha, NE	11.0	18.0	21.0	21.1
Philadelphia, PA	0.0	30.9	0.0	38.7
Phoenix, AZ	19.1	31.9	31.2	27.1
Portland, OR	21.4	21.9	21.9	22.3
Rio Arriba, NM	*	*	0.0	30.1
Sacramento, CA	29.3	18.4	33.5	20.9
Salt Lake City, UT	17.1	18.0	21.9	19.3
San Antonio, TX	0.2	20.4	2.3	32.5
San Diego, CA	26.3	14.6	31.7	12.7
San Jose, CA	21.5	12.1	29.9	13.0
Seattle, WA	9.2	31.3	10.9	38.1
Spokane, WA	20.4	15.1	22.3	15.9
Tucson, AZ	6.9	40.8	9.2	42.5
Tulsa, OK	*	*	15.3	22.5
Washington, DC	*	*	0.0	27.0
Woodbury, IA	*	*	16.4	11.5
Median Area**	2.6	27.7	4.0	30.8

*Not reported that year

**Only areas that reported both years included.

Sources: ADAM, 2003a (for 2000), 2003b (for 2002, preliminary data).

Table 2 also has two other stories to tell. One is that, while the use of methamphetamine is increasing among arrestees—albeit modestly—it is important to keep things in perspective. Arrestees are still nearly ten times as likely to test positive for cocaine as for methamphetamine. The second story is that areas that are above the median for positive methamphetamine tests also tend to be areas that are below the median for positive cocaine tests—and vice versa. Although this rule is far from absolute, it is consistent enough for us to speculate that areas with a deeply entrenched cocaine

subculture are less likely to be penetrated by methamphetamine distribution. To put the matter another way, meth distribution seems to have most easily penetrated areas with low levels of cocaine use. New York, Chicago, New Orleans, and Atlanta, nearly half of whose male arrestees tested positive for cocaine, registered methamphetamine tests of 0.5, 0.3, 1.3, and 2.1% respectively. Contrarily, Honolulu, nearly half of whose male arrestees tested positive for methamphetamine, registered cocaine tests less than one-third of the median area. In some respects, cocaine and meth are functional equivalents or stand-ins for one another.

The most important story conveyed by Table 2 is that methamphetamine use is hugely regional. The area-by-area variation in positive tests is vastly greater for methamphetamine than it is for any other drug. There is no other drug whose use is unknown in some cities (for instance for methamphetamine, Philadelphia and Washington, DC), and the major drug of abuse in others (e.g., Honolulu and San Diego). How methamphetamine use became deeply entrenched among criminal subcultures in some areas but has not made inroads into others is a topic worth exploring. The fact is, with respect to methamphetamine abuse, Honolulu, Phoenix, San Diego, and Sacramento law enforcement have a problem of major proportion on their hands, while their colleagues in Philadelphia, Washington, DC, Chicago, and New York have no, or practically no, problem with the drug at all.

Researchers agree that ADAM's data is unique and valuable, but it does have limitations. To begin with, ADAM's program only draws arrestee samples from the counties with the country's largest cities, which is important, because, as we'll see, methamphetamine is being used at extremely high rates in rural areas (Herz, 2000; Topolski, 2003). Also, by definition, arrestees are offenders who get caught. Many offenders are able to escape detection; those who do may differ from arrestees in important ways, including their drug use patterns. Additionally, whether or not arrestees provide an adequate sample of the criminal population, there remains the question of whether and to what extent the drug use patterns of offenders reflect the drug use patterns of the population as a whole. In spite of these limitations, however, ADAM's sample of arrestees is as good as any comparable sample is likely to be, and data from its tabulations is extremely valuable to an understanding of the drugs and crime picture.

Drug Abuse Warning Network (DAWN)

Through a program funded by the Substance Abuse and Mental Health Services Administration (SAMHSA), information is collected on two crucial drug abuse events: (1) emergency department (ED) episodes and (2) medical examiner (ME) reports. This program is referred to as DAWN—the Drug Abuse Warning Network. DAWN tabulates the number of acute medical complications that are caused by or associated with the use of certain drugs. Comparing DAWN's figures with the percentage of the population who uses these drugs gives us a rough idea of how dangerous their use is, at least within the time frame of a particular episode of use and given the total, episode-by-episode, user-by-user volume of use. As with ADAM, DAWN collects data only in the metropolitan counties in and around the areas in which the nation's largest cities are located and hence, its data does not represent the population of the country as a whole.

An emergency department (ED) episode is any nonlethal, untoward, drug-related event that results in an emergency department visit, including a suicide attempt,

panic reactions, a psychotic episode, hallucinations, unconsciousness, extreme allergic reactions, and dependence for which the patient demands treatment. (A patient presenting for drug treatment is the only nonacute episode that is tallied in ED figures.) In a given episode, recorded by a designated member of the emergency department staff, up to four different drugs may be mentioned as the cause of the untoward effect. (Alcohol is mentioned only if it was used *in combination* with one or more other drugs.) A bit more than half of all ED cases entails reactions to two or more different drugs. Obviously, in a given year, the same patient could present to one or more emergency departments on two or more occasions; hence, the yearly tabulation of *episodes* does not indicate the number of *people* who experienced untoward, drug-induced emergency department visits during that year. Since several drugs could be mentioned as having been taken in a given episode, the number of drug "mentions" tabulated is greater than the number of drug "episodes" that took place. It should also be emphasized that illicit street drugs may be adulterated or bogus and hence, tabulations of ED episodes may be misleading in that they may not tell us about the inherent dangers of a particular drug. For instance, more dangerous drugs, such as PMA and DXM, have been sold as ecstasy, and thus, users who experience untoward effects after taking them will present to hospitals self-reporting of symptoms of an "ecstasy" overdose when in fact, they've taken a very different drug (Rosenbaum & Heilig, 2001). Hence, all DAWN figures should be read with a measure of skepticism.

Medical examiner (ME) reports are tabulations of deaths caused directly or indirectly by one or more drugs, as reported by a city's or a county's coroner or medical examiner. In the case of a nonroutine death, that is, a death that requires investigation, an autopsy is performed on the decedent. Roughly 70% of all autopsies performed in the United States are included in DAWN's program, indicating that ME reports, at any rate, are not wildly unrepresentative of drug "overdoses." If drugs are deemed to be a factor in the death, it is counted as an ME episode. In the most recent report, two-thirds of all the ME episodes were directly drug-induced (that is, were regarded as drug "overdoses"); in one-third of the cases, the drug or drugs played a "contributory role." The rules followed by different medical examiners for including a case in their DAWN reports are not completely standardized. Hence, a case that is included in one jurisdiction may be excluded in another. As with ED tallies, alcohol is counted only if it was taken in combination with one or more other drugs. For ME cases, up to six drugs may be counted; in the last DAWN report, in three-quarters of all ME episodes, more than one drug was tallied.

Keep in mind the fact that DAWN tabulates only acute drug reactions (i.e., those that take place specifically during the immediate aftermath of an episode of use). It does not tally the untoward chronic effects of drugs (i.e., those that take place over the long run—after weeks, months, or years of use). (An exception to this rule, as we saw, is the user who appears at an emergency room seeking treatment for drug dependence, which is a chronic rather than an acute effect.) If a heroin addict is hospitalized for hepatitis or a "crack whore" dies of AIDS, their deaths will not be tallied in DAWN's data. Also, keep in mind the fact that many factors could cause a given untoward episode, including the dose and combination of drugs taken, the impurities in the drugs taken, and the route of administration by which they are taken. Another issue to keep in mind is the fact that the methods of recording both ED and ME episodes is unstandardized, varying somewhat from one metropolitan area to another. For instance, in some counties, medical examiners mention marijuana in ME reports while

in others, they do not. This indicates that in the latter cases, the medical examiners did not believe that the drug played a contributory role in overdose deaths, even though decedents may have tested positive for the presence of the drug. It is also true, however, that procedures for recording DAWN data are becoming more standardized over time. In the following summary, I make use of the most recent DAWN reports: the 2001 Emergency Department (ED) reports and the 2000 Medical Examiners (ME) reports.

With respect to population demographics, relative to their numbers in the population, fatal drug "overdose" (including directly and indirectly caused ME deaths) decedents are substantially more likely to be male (74%) than female (26%); not quite two-thirds are white (63%); a quarter are African-American (25%); and one in ten (11%) are Hispanic. Perhaps, the most startling demographic statistic for drug-related mortality is related to age. While teenagers and young adults are strikingly more likely to use drugs than older adults, the younger age categories are vastly less likely to die of drug-related causes; only 1% of drug overdoses are 17 and younger, and only 8% are between the ages of 18 and 24. The reason for the discrepancy is that as age rises, the risk of dying of drug-related causes rises as well. Not quite one-fifth of DAWN's decedents (19%) are between 25 and 34; a third (37%) are between 35 and 44; and a whopping 35% are 45 and older. Considering the oldest age category is *extremely* unlikely to use illicit drugs, it becomes clear that taking psychoactive substances recreationally poses a much more serious health hazard to the middle-aged than the younger categories of the population. By a certain age, illicit, recreational drug use becomes an *enormous* threat to the user's very existence.

Table 3
Trends in Drug-Related Emergency Department (ED) Mentions, 1994-2001

Substances Mentioned	Total 1994	Total 2001	% change 1994-2001
Alcohol-in-combination	160,798	218,005	35.6
Cocaine	143,337	193,034	34.7
Marijuana	40,034	110,512	176.0
Benzodiazepines	74,637	103,972	39.3
Narcotic-analgesics	44,518	99,317	123.1
Heroin	63,158	93,064	47.4
Antidepressants	54,442	61,012	12.1
Acetaminophen	43,637	39,165	-10.2
Antipsychotics	25,012	20,182	-19.3
Muscle relaxants	12,223	19,001	55.5
Amphetamines	10,118	18,555	83.4
Ibuprofen	19,588	17,123	-12.6
Methamphetamine	17,537	14,923	-14.9
Barbiturates	5,887	9,506	61.5
Aspirin	16,875	7,235	-57.1
PCP	5,899	6,102	3.4
MDMA	253	5,542	2,090.5
GHB	56	3,340	5,864.3
LSD	5,158	2,821	-45.3
Ketamine	19	679	3,473.7

Note: Substances arranged by rank in 2001.
Source: Based on data supplied by DAWN, 2003, pp.2-5.

Table 4
Medical Examiner (ME) Reports, 1996-2000, Number of Mentions and Deaths, Drug/Drug Type

	1996	1997	1998	1999	2000
Cocaine	4,424	4,277	4,556	4,816	4,782
Heroin	3,525	3,953	4,021	4,434	4,398
Alcohol	3,476	3,473	3,701	3,903	4,081
Narcotics	2,901	2,941	3,267	3,750	4,624
Anti-Depressants	1,664	1,614	2,031	2,415	2,310
Benzodiazepines	1,339	1,422	1,599	1,672	1,809
Total ME mentions	22,539	23,466	24,917	28,427	28,846
Total ME deaths	9,306	9,584	9,750	11,464	11,168

Note: Cocaine includes crack; heroin includes morphine; alcohol cases are counted only if used in combination with another drug; "narcotics" are all the narcotic analgesics (with the exception of heroin and morphine), such as methadone, dilaudid, fentanyl, and codeine, added together; anti-depressants include Zoloft, Prozac, Paxil, Tofranil, Elavil, and Sinequan; benzodiazepines are tranquilizers, such as diazepam (Valium), chlordiazepoxide (Librium), alprozolam (Xanax), chlorazepate (Traxene), and lorazepam (Ativan). Table does not included cases in "Abbreviated Profiles for Areas with Few Cases," pp.104-107. Cases enumerated in "Area Spotlights," pp.110-141 are included in "Metropolitan Area Profiles," pp.30-101.

Source: DAWN, 2002.

Table 5
Medical Examiner (ME) Data for Amphetamine and Methamphetamine, 2000, in All Metropolitan Counties Combined, Mentions and Single-Drug Deaths

	Mentioned	Single-Drug Deaths
Amphetamine	421	11
Methamphetamine	693	68
Metropolitan areas in which methamphetamine is . . .		
not in the top ten drugs mentioned	22	
is tenth among drugs mentioned	2	
eighth among drugs mentioned	4	
fifth among drugs mentioned	3	
fourth among drugs mentioned	3	
third among drugs mentioned	1	
first among drugs mentioned	1	

Source: DAWN, 2002

As with ADAM's data, DAWN's tables have several interesting stories to tell.

The first is that alcohol is involved in a great many untoward drug reactions; in fact, it ranks first in emergency department mentions and third in drug-related deaths. On the other hand, since alcohol is used so often by such a huge percent of the population, on a dose-by-dose, user-by-user basis, it is certainly a great deal less toxic than most of the other drugs in DAWN's tabulations. To repeat, DAWN tallies alcohol *only* if it is used in combination with another drug. Both the ED and ME figures for alcohol would be *vastly* higher if alcohol-alone episodes were tallied; one expert estimates that alcohol consumed by itself causes six times as many emergency

room admissions than when it is used in conjunction with another drug (Goldstein, 2001, p. 11). This does not mean that it is more dangerous to use alcohol alone than with other drugs. In fact, other things being equal, precisely the reverse is true. It is just that a lot more people use alcohol alone than use it with other drugs. Hence, alcohol's role in overdoses is hugely minimized by DAWN.

Another story contained in DAWN's tables is that marijuana ranks very high in DAWN's emergency department (ED) data, surpassing heroin in this respect in 2001. (Marijuana appears in an extremely tiny percentage of DAWN's medical examiner figures—and *always* in combination with another drug—indicating that the drug is not terribly toxic.) As with alcohol, marijuana is a frequently-used drug and hence, its appearance in DAWN's emergency department figures should not be surprising. On a dose-for-dose, user-by-user basis, it rarely causes complications, yet some users, a very small minority, do experience untoward reactions. In addition, let's keep in mind that when a user presents for drug abuse treatment, DAWN counts this as an ED episode, and a certain proportion of persons convicted of marijuana possession opt for treatment rather than jail or prison. In addition, people who abuse marijuana tend to be much younger than those who are abusively involved with the harder drugs and hence, are more likely to be pressured into a treatment program as a result of complications.

The main point of the DAWN information is that there are three drugs—DAWN's "Big Three"—that appear consistently at or near the top in both ED and ME figures: (1) cocaine, (2) heroin, and (3) alcohol-in-combination. These are the three most dangerous drugs consumed in America in the sense that they are associated with the greatest number of untoward reactions, both lethal and non-lethal. More specifically, given that heroin is used roughly one-twentieth as often as cocaine and less than one-one-hundredth as often as alcohol, the fact that it appears so often in DAWN's data is clear and unambiguous evidence that it is an extremely dangerous, toxic drug. It bears a disproportionately high risk of damage and even death on an episode-by-episode, under-by-user, gram-by-gram basis.

Experts agree that the high ranking of a particular drug or drug type in DAWN's tables is cause for concern by interested observers. For the first time, in 2000, the number of medical examiners mentions for all the narcotic analgesics added together—including codeine, methadone, oxycodone, dilaudid, and fentanyl—surpassed those for both alcohol and heroin. Of course, the category "narcotic analgesics excluding heroin and morphine" is a drug type (or more accurately, a subset of a drug type) as opposed to a specific drug, which is the case with heroin/morphine and alcohol. Still, this category's recent rise to prominence is a noteworthy development and indicates the growing abuse of a number of narcotic drugs aside from and in addition to heroin. This is indicated by the fact that in a number of metropolitan areas around the country, several of the non-heroin narcotics are in fourth place (after heroin, cocaine, and alcohol) in causing ME lethal overdoses—for instance, codeine (in eight metropolitan areas), methadone (in three), and oxycodone (in one).

For our purposes, it is important to note that methamphetamine ranks very far down the ladder of toxic drugs in DAWN's ED and ME data. Only 1% of DAWN's ED mentions (and 2% of all its episodes) involved methamphetamine. In 2001, there were nearly 15 times as many alcohol mentions, 13 times as many cocaine mentions, seven and one-half times more marijuana mentions, seven times as many benzodiazepine mentions, nearly seven times more narcotic-analgesic mentions, and over six times as many heroin mentions,

as methamphetamine mentions. With respect to nonlethal emergency department "overdoses," methamphetamine is not even in the top ten of the most serious drugs of abuse. (Again, this does not deny the drug's serious status in some cities.) Moreover, between 1994 and 2001, the number of ED cases involving methamphetamine decreased by 15%, and in 2000, a grand total of only 68 cases of a lethal drug "overdose" involving a single drug were with methamphetamine alone. In 22 of these 36 areas, methamphetamine was not even in the top ten drugs mentioned in a drug-related death. In only two was it in the top three. None of this is to say that methamphetamine is not a dangerous drug; it is. In fact, in some areas (such as the counties in and around which San Diego, Las Vegas, Los Angeles, and Oklahoma City are located), it ranks very high on DAWN's list of dangerous drugs. With respect to the most clear-cut measures of harm (i.e., causing or being associated with emergency department episodes and lethal drug "overdoses"), however, its use does not rival that of cocaine, heroin, or alcohol—indeed, it does not even rival several other drugs or drug categories, such as narcotics other than heroin, tranquilizers (benzodiazepines), or antidepressants.

As with ADAM's data, DAWN has a valuable, though limited, story to tell. In spite of the lack of complete standardization from one catchment area to another in what constitutes a drug "episode," DAWN tells us, roughly, which drugs make the major contributions to the impact that the abuse of certain drugs has on both nonlethal and lethal untoward drug-related episodes. Within that specific framework, nationwide, methamphetamine remains outside the circle of the half-dozen most harmful drugs abused in the United States.

Monitoring the Future (MTF)

Each year since 1975, the Institute on Survey Research at the University of Michigan has surveyed a nationally representative sample of 15,000 or so high school seniors about their use of and attitudes toward legal and illegal drugs. In addition, beginning in 1977, adults who completed high school one or more years earlier were also questioned. The adult sample is divided into college students and noncollege respondents, whose answers are tabulated separately. In 1991, samples of 8th and 10th graders were included. In 2002, its survey of drug use among 8th, 10th, and 12th graders drew a sample of 44,000 students in 400 secondary schools around the country. This ongoing survey is referred to as the Monitoring the Future survey (MTF).

The MTF survey is conducted by the University of Michigan's Institute for Social Research. Its surveys are conducted in the classroom, and its questionnaires are self-administered by each respondent. For each drug, four levels of use are asked about: (1) lifetime prevalence (i.e., whether the respondent ever used the drug in question); (2) annual prevalence, or use during the past year; (3) 30-day prevalence, or use during the past month; and (4) daily use, or use on 20 or more days during the past 30 days. (Most researchers do not make use of the daily figure, since, for most drugs, a tiny percentage of respondents fall into this category.) Respondents are also asked about perceived risk, their disapproval of drug use, and perceived availability of specific drugs.

Two crucial findings emerge from MTF's annual surveys of drug use: (1) The MTF study does not demonstrate widespread use of methamphetamine and (2) methamphetamine use figures do not seem to be increasing substantially, although this depends on the wording of the question. The question specifically about "methamphetamine" elicited stability or slight declines in use for all grades and

all three measures of use, lifetime, yearly, and use in the past 30 days. The question about "ice," asked only of high school seniors, elicited very slight although uneven increases between 1991 and 2002. In short, the nationwide epidemic predicted for methamphetamine abuse (Labianca, 1992; Lerner, 1989; Young, 1989) has clearly not yet materialized; stability rather than explosive growth seems to have been the rule for middle school and high school methamphetamine use over the past decade or so.

Table 6
Use of Methamphetamine 8th, 10th, and 12th Graders, 1991-2002

	1999	2000	2001	2002
Lifetime				
8th grade	4.5	4.2	4.4	3.5
10th grade	7.3	6.9	6.4	6.1
12th grade	8.2	7.9	6.9	6.7
Past Year				
8th grade	3.2	2.5	2.8	2.2
10th grade	4.6	4.0	3.7	3.9
12th grade	4.7	4.3	3.9	3.6
Past 30 Days				
8th grade	1.1	0.8	1.3	1.1
10th grade	1.8	2.0	1.5	1.8
12th grade	1.7	1.9	1.5	1.7

Table 7
Use of "Ice," 12th graders, 1991-2002

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Lifetime	3.3	2.9	3.1	3.4	3.9	4.4	4.4	5.3	4.8	4.0	4.1	4.7
Year	1.4	1.3	1.7	1.8	2.8	2.8	2.3	3.0	1.9	2.2	2.5	3.0
30 days	0.6	0.5	0.6	0.7	1.1	1.1	0.8	1.2	0.8	1.0	1.1	1.2

Source: Johnston, O'Malley, & Bachman, 2003.

Note: Questions about "ice" not asked of 8th and 10th graders, and questions about "methamphetamine" not asked before 1999.

The National Household Survey on Drug Abuse

In 1972, the first systematic survey of drug use among a randomized sample of Americans was conducted. Sponsored by the National Commission on Marijuana and Drug Abuse, this survey gave us our first accurate look at patterns of drug consumption in the United States. Between 1975 and 1991, nine similar surveys were sponsored by the National Institute on Drug Abuse (NIDA). Beginning in 1992, yearly surveys of drug use in the American population have been sponsored by the Substance Abuse and Mental Health Services Administration (SAMHSA), a division of the United States Department of Health and Human Services. The 2001

National Household Survey on Drug Abuse (NHSDA) is based on information provided by answers to questionnaires from just under 70,000 respondents. The resultant report, released in 2002, provides, in the words of the Substance Abuse and Mental Health Services Administration, national estimates of rates of use, number of users, and other measures related to use of illicit drugs, alcohol, cigarettes, and other forms of tobacco by the population, ages 12 years and older.

As we can see from Table 8, self-reported methamphetamine use in the United States is substantial; although, as we've seen from the other sources of data, it does not rival that of alcohol, marijuana, or cocaine. SAMHA's national household survey also compared self-reported methamphetamine use in 2001 with that of use in 2000 and found a slight increase—from 4.0 to 4.3% for lifetime use, from 0.5 to 0.6% for use in the past year, and from 0.2 to 0.3% for use in the past month. In 1999, this same survey asked respondents when they first used methamphetamine and, based on their age, calculated numbers and percentages of "initiates" on a year-by-year basis. Based on these calculations, the year stretching back from when the survey was conducted (1998) generated the greatest number of new users or initiates (378,000) and the highest age-specific rates for 12-to-17-year-olds (7.4 per 1,000 person-years of exposure). In other words, from this national household survey, we see a modest increase in methamphetamine initiation and use from the late 1990s into the early 21st century. At the same time, the explosive growth predicted more than a decade ago, and the exaggerated claims of more recent reports in the press about the nationwide extent of the use of crank, ice, and meth (Brooks, 2001; Kirn, 1998; Sanchez, 2001) do not seem to be entirely accurate.

Table 8
Use of Various Drugs, Lifetime, Past Year, and Past Month, Persons Age 12 and Older, 2001

	Lifetime	Past Year	Past Month
Marijuana/hashish	36.9	9.3	5.4
Cocaine	12.3	1.9	0.7
Crack	2.8	0.5	0.2
Heroin	1.4	0.2	0.1
LSD	9.0	0.7	0.1
PCP	2.7	0.1	0.0
MDMA	3.6	1.4	0.3
Methamphetamine	4.3	0.6	0.3
Any Illicit Drug Other Than Marijuana	25.6	7.0	3.1
Any Illicit Drug	41.7	12.6	7.1
Tobacco	71.4	34.8	29.5
Alcohol	81.7	63.7	48.3

Source: Substance Abuse and Mental Health Services Administration, 2002.

Methamphetamine Use in Rural Areas

As we've already seen with the ADAM data, and in our brief but more detailed examination of the DAWN data, national statistics cannot provide an accurate picture of drug abuse in a specific region or area. In a like fashion, urban statistics cannot provide an accurate picture of drug abuse in rural areas—even within the same region of the country. By the last few years of the 1990s, it had become clear

that the usual pattern of strikingly higher drug abuse in urban areas was no longer necessarily valid. In fact, in some rural regions, the abuse of certain drugs began to challenge or even surpass that of urban areas. This is strikingly the case for the consumption of methamphetamine.

In 1998, in an ADAM "outreach" project, Herz (2000) studied drug use in four rural Nebraska counties and compared those figures with use in Omaha, a large city in Nebraska. While the usual pattern prevailed—Omaha's booked arrestees were more likely to use illicit drugs in general than those in the rural counties—the pattern was distinctly different for methamphetamine. Arrestees in the four rural counties, taken as a whole, were just as likely to test positive for methamphetamine as those in Omaha; in comparison with Omaha (7%), those in two of the rural counties tested at slightly lower levels (3% and 6%), while two tested at higher levels (13% and 14%). While the Omaha arrestees' second most popular drug, after marijuana, was cocaine, in the rural counties, it was meth. The appeal of methamphetamine, said Herz, is that it is easy to manufacture and is cheaper and more long-lasting than cocaine (p. 1). In some areas, the drug is described as the "poor man's cocaine." Given the collapse of the economic structure of much of the rural Midwest, and the influx into these regions of substantial numbers of members of racial and ethnic groups that have in the past only populated urban areas, the recent increases in the use of methamphetamine in rural areas should not be surprising.

One indication that the place that methamphetamine use has in rural areas is markedly different from that which it occupies in more urban areas is indicated by a recent study by James Topolski (2003). The 2002 admission rates into treatment programs for methamphetamine abuse as the primary drug in Missouri for urban areas was 24.8 per 100,000 in the population for males and 23.5 per 100,000 for females. For rural areas, the comparable figures were 72 and 49, respectively, between twice and three times as high. For the state of Missouri as a whole, treatment admissions for methamphetamine shot up from 325 in the second half of 1994 to 2,063 in the second half of 2002, an increase of over six times. For none of the four major drugs recorded was the increase as substantial, and for cocaine, stability rather than growth has been the rule (See Tables 9 and 10 for these figures.). Of course, a number of factors can influence treatment admissions, including available placements, but the magnitude of the figures is so great that the evidence strongly suggests that methamphetamine abuse is not only hugely on the rise in some areas, but it seems to be rising much faster in rural areas than urban ones.

Table 9
Rural/Urban, Male/Female Admissions to Methamphetamine Treatment, Missouri, 2002, Rate/100,000 in the Population

Urban Males	24.8
Urban Females	23.4
Rural Males	72
Rural Females	49

Source: Topolski, 2003.

Table 10
Statewide Treatment Admissions by Drug, Missouri 2002*

	Heroin	Meth	Marijuana	Cocaine
2H94**	435	325	1,685	3,273
1H95	454	454	1,983	3,069
2H95	509	526	1,996	2,593
1H96	464	581	2,349	2,807
2H96	494	730	2,592	3,210
1H97	627	1,088	3,197	3,225
2H97	645	1,438	3,325	3,346
1H98	722	1,460	3,570	3,601
2H98	621	1,244	3,650	3,760
1H99	1,104	1,449	4,653	3,792
2H99	825	1,611	4,590	4,007
1H00	973	1,723	5,400	3,983
2H00	956	1,665	5,132	4,057
1H01	938	2,008	5,850	4,440
2H01	892	1,900	5,384	4,004
1H02	782	1,981	5,514	3,880
2H02	734	2,063	5,003	3,904

Source: Topolski, 2003.

*Raw admission numbers, not rates
**1H = first half of the year; 2H = second half of the year

Drug Dependence: Measures of Drug Continuance or "Loyalty"

Both cocaine and the amphetamines, methamphetamine included, are described as highly reinforcing or pleasurable. Some argue that we can predict patterns of use from laboratory experiments. If in an experimental situation, both animals and humans love taking a particular drug and take it over and over again, that drug, these observers say, has an immense potential for abuse and will, in the typical case, generate untold numbers of abusers. Do actual patterns of use in real life support these theories? Does a drug's high level of pleasure automatically translate into extremely high levels of abuse?

The number of people who have used a given drug is less important than the number and proportion who use it regularly—and abusively. Continuance rates are one of the most important features of a drug's pattern of use. Drugs vary with respect to user "loyalty." Users "stick with" some drugs longer than others. Some tend to be given up after experimental use; others are used over a long period of time but episodically, sporadically, on a once-in-a-while basis; a few are more often used regularly, even frequently.

Of the many factors that determine a drug's continuance rate, perhaps the legal-illegal distinction is most influential. As a general rule, legal drugs have higher continuance rates than illegal drugs. In spite of some observers' claims, illegal drugs are *not* as easy to obtain as legal drugs. There is a certain "hassle factor" involved with obtaining them; they are considerably more expensive, and obtaining them entails the risk of arrest. As a result of the "hassle"—the cost, locating a dealer, and the risk of arrest—illegal drugs are much more likely to be given up or used much more infrequently and sporadically than is true of legal drugs.

How are drug use continuance rates measured? One way is to compare lifetime use with use in the past month. Picture a large circle representing all the people who have ever used a given drug, even once, during their lifetimes. Then picture a smaller circle within the larger one that represents the number of people who have used that drug within the past month. If the smaller circle is a substantial proportion of the larger circle. If most of the people who ever used a given drug are still using it, then that drug generates a high continuance rate; in other words, its users are relatively "loyal" to it. On the other hand, if the inner circle is much smaller than the outer circle and most of the people who ever used a given drug are no longer using it, or used it the last time a long time ago, then the drug's continuance rate is low. Its users are not very "loyal" to it; most typically, they give up its use rather than "stick with" it.

Of all psychoactive substances, alcohol generates the highest loyalty or continuance rates. In the 2001 National Household Survey, of all at-least one-time users of alcohol, nearly half (59%) drank in the past month. Just over one-third of all people who smoked cigarettes once or more in their lives (37%) smoked them within the past month. In this study, marijuana—the "least illegal" of the illegal drugs—generated a 15% continuance rate. Heroin and crack cocaine, the "most illegal" and the least popular—although theoretically the most dependency-producing—of the illegal drugs, manifested a continuance rate of 6.5%. LSD, a drug of sporadic use, generated a continuance rate of only 1.5%, and PCP, a drug widely recognized as having potentially dangerous effects, a continuance rate of only 1%. Methamphetamine ranks very slightly below crack cocaine and considerably above PCP in the degree to which its users "stick with" the drug. In other words, overwhelmingly, someone who tries methamphetamine is much more likely to give up its use rather than continue using it.

A slightly different continuance rate can be obtained by comparing the use of a given drug in the past year with use in the past month. As measured by this particular indicator, the drug with the highest continuance rate is the nicotine in tobacco cigarettes; in the year 2001, 86% of all people who smoked during the past year also smoked during the past month. Measured this way, 76% of alcohol drinkers continued to take their drug of choice, while 58% of marijuana users, and 40% of cocaine users did so. Clearly, while many more people use alcohol than tobacco cigarettes, people smoke cigarettes a great deal more often than they drink alcohol. In fact, the typical pattern of cigarette smoking is chronic use. For illicit drugs, lifetime users divide into quitters, sporadic or less-than-monthly, and monthly-or-more users. For most drugs, daily or chronic use tends to be extremely atypical.

Based on this second measure, methamphetamine ranks near the top among all illicit drugs in user "loyalty." Nearly half of all people in the national household survey who used meth in the past year *also* used it in the past month. In this respect, only marijuana outranked methamphetamine. It is clear that methamphetamine (along with powder and crack cocaine) is a drug with a substantial population of experimental users—those who give up the drug after one, two, or a half-dozen tries, but also a fairly substantial minority who go on to regular, frequent, and even abusive use. While the typical methamphetamine at-least-one-time user is an experimenter, and the typical regular user is not a compulsive "addict," a sizeable number of users of methamphetamine do use so frequently that they may be classified as compulsive abusers. Experimentation leading to desistance is the rule; continued use leading to regular but not frequent use constitutes a substantial minority pattern;

and compulsive, abusive use tends to be very atypical. Still, enough users take methamphetamine compulsively to cause a substantial problem for society.

Table 11
Continuance or "Loyalty" Rates, Selected Drugs, 2001

Lifetime-to-30-Day Continuance Rates		Yearly-to-30-Day Continuance Rates	
Alcohol	59.1	Cigarettes	85.8
Cigarettes	37.1	Alcohol	75.9
Marijuana	14.6	Marijuana	57.5
Ecstasy	9.7	Meth	43.0
Heroin	6.5	Cocaine	40.0
Crack	6.5	Crack	39.5
Cocaine	6.0	Heroin	27.0
Meth	6.0	Ecstasy	24.2
LSD	1.5	PCP	21.6
PCP	0.9	LSD	19.9

All numbers expressed in percentages.

Source: SAMHSA, 2002.

The two most important things about drug use as a social problem are as follows: (1) how large the minority of compulsive users is and (2) how disruptive the drug is in the user's life. In both of these criteria, methamphetamine stands tall among the many substances of abuse.

As we might expect, the National Household Survey's figures are sufficiently flawed as to qualify these generalizations. Since this survey only samples households, people living outside an established residence are not included, and this includes the homeless. Those populations most likely to abuse drugs, to use them on a compulsive and addictive basis, are statistically least likely to be captured by the National Household's sampling technique. Hence, the "loyalty" rates of users of certain drugs, methamphetamine included, are likely to be deflated somewhat by this study's methodology. Still, the National Household Survey should make us skeptical of the view that experimentation with meth automatically leads to regular use and that regular use automatically leads to compulsive dependence. It is important to emphasize this point because if we looked only at animal experiments, we would be led to the conclusion that no organism can resist the most pleasurable and reinforcing drugs, that anyone dabbling in a drug as reinforcing as methamphetamine will inevitably become an addict. This is simply not the case. Most dabblers are capable of deciding not to continue, and even most regular users are capable of limiting their use to specific, less-than-daily occasions. "Try it once and you're hooked" does not apply to methamphetamine—nor, indeed, does it apply to any drug known to humanity.

Summary

Recent media accounts on methamphetamine abuse have warned the public and put law enforcement on alert: Methamphetamine is the drug to watch. Scary stories have appeared announcing that "ice" (recrystalized methamphetamine sulfate) or "crank" (illicit methamphetamine) is the drug to watch. Does systematic evidence bear out these journalistic claims?

In attempting to understand the prevalence of and trends in drug use and abuse, epidemiologists, criminologists, and sociologists have several data sources to consult. Four of the most widely used are ADAM (the Arrestee Drug Abuse Monitoring program), DAWN (the Drug Abuse Warning Network), MTF (Monitoring the Future), and the National Household Survey on Drug Abuse.

ADAM drug tests and interviews arrestees who have agreed to volunteer information about their use; 85% agree to be interviewed. Of these, 85 agree to be urine tested for the presence of drugs. The program looks at arrestees from the counties in and around the nation's largest cities. In the past decade, cocaine has declined as the drug of choice among arrestees, and marijuana has increased. Nonetheless, nationwide, only one-tenth as many arrestees tested positive for methamphetamine as for cocaine. The most remarkable of ADAM's findings, however, is that the use of methamphetamine remains extremely regionalized. In some cities (e.g., Honolulu, Sacramento, and Phoenix), meth is the number one drug, with between one-third to just under one-half testing positive for methamphetamine. In others (e.g., Philadelphia, Chicago, New York, and Washington, DC), the presence of meth among arrestees is totally, or almost, nonexistent. This may change in the near future, since some cities that, just two or three years ago, tested 0% for methamphetamine among arrestees, now find that a tiny percentage test positive.

DAWN is a data-collection program that examines both nonlethal and lethal untoward drug reactions, again, in counties in or around which the nation's largest cities are located. (**Note:** DAWN only works with data from areas in the continental United States, which excludes Hawaii.) DAWN's emergency department (ED) data indicates that in 2001, methamphetamine was mentioned in less than 15,000 nonlethal untoward, drug-related episodes, slightly less than for ibuprofen and only one-thirteenth as many as for cocaine. Meth was not in the nation's top ten drugs with respect to emergency department episodes. Moreover, between 1994 and 2001, the number of such episodes actually declined by 15%. DAWN's medical examiners episodes tell more or less the same story. In 2000, in most of the areas of the country, methamphetamine does not appear in the top ten drugs with respect to lethal "overdoses." Nationwide for that year, methamphetamine was mentioned in only 68 single-drug deaths, a minuscule fraction of the figures for cocaine and heroin. These figures do not deny that in some communities, methamphetamine is a major drug of abuse, appearing frequently in its DAWN figures. In 2000, in one area (the counties in and around which Oklahoma City is located), meth was the number one drug of abuse, as measured by DAWN's figures.

MTF is a yearly survey of 8th, 10th, and 12th graders, as well as college students and adults not in college. Questions about ice have been asked since the early 1990s; the increase to 2002 has been modest. Questions about "methamphetamine" have been asked since 1999; they indicate stability or slight declines. MTF's data do not indicate any upsurge in use in recent years.

The data from the National Household Survey on Drug Abuse indicate that recent increases in methamphetamine use have been fairly modest and that the drug's use nationwide is far below that of marijuana and cocaine.

These nationwide figures mask not only regional differences but rural-urban differences as well. In some rural communities, methamphetamine has become *the* drug of abuse. In some areas, in the past few years, narcotics law enforcement spends most of its person-hours on methamphetamine, and in these same areas, admissions to

treatment programs for meth abuse have shot up severalfold and have overwhelmed local and regional facilities. Clearly, the national picture is not the same everywhere; to get the big picture, piecing together many smaller pictures is necessary.

At the same time, the nationwide picture does not warrant alarm—yet. Even today, in most areas of the country, methamphetamine abuse is dwarfed by the use of cocaine and, as measured by harm if not by its volume of use, even heroin. That may change in the years to come, but the current picture does not justify a recent *USA Today* headline: "'Meth' Moves East" (www.usatoday.com/news/nation/2003-07-29-meth-cover_x.htm). This story quotes a DEA agent who says "It looks almost like a wildfire moving east." The potential for growth, and harm, are there, and law enforcement must meet this challenge with vigilance, not hysteria.

Our fear of methamphetamine should be partially qualified by an examination of "loyalty" or continuance rates. Most at-least one-time users do not go on to continued use; most give up the use of methamphetamine after a few trial experiments with it. Methamphetamine, however, is second among illicit drugs only to marijuana in the degree to which persons who took the drug during the last year also took it within the past 30 days. In other words, a minority—albeit a substantial minority—who graduate from the experimental use of methamphetamine begin taking it more or less regularly, and if we had more precise data, we'd see that a minority within that minority—but again, a fairly substantial minority—begin taking the drug compulsively and abusively. It is this minority within a minority that law enforcement has to worry about. No, "tasting" crank does not even remotely inevitably lead to a "maelstrom of addiction," but yes, that risk is very likely as high as it is for any drug currently available on the drug menu. The "loyalty" figures should give us cause for concern about the use of methamphetamine.

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The Emergence of Methamphetamine in Illinois: Examining Law Enforcement and Drug Treatment Indicators to Gauge the Extent and Nature of the Problem

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Introduction

Methamphetamine is a powerful stimulant that, when smoked, can produce almost immediate effects that last for up to eight hours. Based on law enforcement information, methamphetamine in Illinois costs roughly $100 per gram, and each gram translates to approximately 10-20 doses. Based on national surveys conducted by the United States Substance Abuse and Mental Health Services Administration (SAMHSA), methamphetamine use is on the rise: the *2001* N*ational Household Survey on Drug Abuse* reported that the 9.6 million people had tried methamphetamine at least once in their lifetime, which was more than double the 1994 estimate of 3.8 million (Substance Abuse, 2002). By comparison, more than 83 million people had tried marijuana, and 27 million had tried cocaine. Thus, while methamphetamine use is still low when compared to other drugs, like marijuana or cocaine, it increased dramatically during the 1990s and appears to be concentrated in different types of geographic/population environments.

As with many drugs of abuse, there are some clear geographic differences in the availability and use of methamphetamine, but this may be changing. For example, the National Institute on Drug Abuse's (NIDA) Community Epidemiology Work Group (CEWG), an early warning network of researchers that provides information about the nature and patterns of drug use in major cities, reported that while methamphetamine continued to be a problem in the West, increased methamphetamine availability and production were being reported in diverse areas of the country, particularly rural areas, prompting concern about more widespread use (U.S. Department of Health and Human Services, 1999). Furthermore, a study by the National Center on Addiction and Substance Abuse found higher rates of methamphetamine use in rural areas: researchers found that eighth-graders in rural America were more than twice as likely than those in urban centers to report use of methamphetamine, leading researchers to claim that illegal drug use among adolescents in small towns and rural areas is reaching alarming proportions (ABC News, 2000). Thus, up until the last decade, methamphetamine was limited to rather isolated regions of the West and Southwest; however, that is no longer the case. Methamphetamine is now spreading through the Midwest and becoming an emerging and significant new drug problem in previously unaffected rural and urban areas, and even though the drug has been made and used in the United States for more than three decades, large-scale methamphetamine production and

use is a fairly new phenomenon. As such, relatively little research has been done to examine the extent and nature of methamphetamine production and use. This article attempts to explore the emergence of this drug in Illinois by examining a variety of indicators across different regions of the state. Specifically, the answers to two questions were sought:

1. Using indicators from law enforcement and drug treatment agencies, how has the methamphetamine problem emerged across Illinois' 102 counties, and where is it most prevalent?

2. To what degree do law enforcement and drug treatment agency indicators regarding methamphetamine correlate/correspond to one another?

With these two questions answered, the conclusions then provide some specific recommendations for criminal justice practitioners, policymakers, and crime analysts.

Methodology

In order to examine the emergence of methamphetamine in Illinois, data sources were identified and examined to measure rates of drug arrests, drug seizures by law enforcement agencies, identified clandestine methamphetamine labs, and drug treatment admissions across each of Illinois' 102 counties. The specific strengths and weaknesses of these data sources are described in more detail in the sections below. Also, for ease of presentation and analyses, data for each of Illinois' 102 counties was aggregated into groupings, which included the following: Cook County/Chicago, the suburban Chicago "collar" counties, urban counties in other areas of Illinois, and finally, rural counties. Rural counties were those 74 of the 102 counties in Illinois that were not within what the U.S. Census Bureau classifies as a metropolitan area. For purposes of the rates calculated and used in the analyses, the total county populations for 2001, as estimated by the U.S. Bureau of the Census, were used. Also, under Illinois law, there are four general laws that address drug control policies: (1) the Controlled Substances Act, (2) the Cannabis Control Act, (3) the Drug Paraphernalia Control Act, and (4) the Hypodermic Syringes and Needles Act. While the latter two primarily address drug paraphernalia, the first two relate to specific classes of drugs. The Cannabis Control Act delineates the offenses that relate to marijuana, while the Controlled Substances Act includes all other substances, including drugs such as cocaine, heroin, and methamphetamine, among others. Given the exploratory nature of the current analyses, the statistical techniques used are primarily descriptive in nature and involve some simple univariate and bivariate (e.g., correlation) analyses.

Law Enforcement Indicators

There were three primary variables that measure police activities that were used to examine the extent and nature of methamphetamine from the justice system's perspective: (1) the weight and number of cases involving methamphetamine submitted from local law enforcement agencies to Illinois State Police Crime Labs, (2) methamphetamine labs identified by law enforcement agencies in the state, and (3) drug arrests reported through the Illinois Uniform Crime Report (I-UCR) program. For each of these measures, rates were calculated based on the total population of the counties or regions. Finally, the availability of these measures varied over time,

ranging from long periods of time for the arrest data (the mid-1970s through 2002) to only recent years (the late 1990s through 2002), for activities like methamphetamine cases submitted to crime labs or methamphetamine labs uncovered by police.

Crime Lab Submissions

In Illinois, law enforcement agencies submit seized drugs to Illinois State Police crime laboratories for identification and analysis. From this data, the Illinois State Police were able to provide the number of submissions (e.g., cases) involving particular drugs for each county and for each year from 1998 to 2002, as well as the *quantity* of each drug submitted (e.g., the weight in grams) for each county from 1994 through 2002. From analyses of this data, it can generally be concluded that the number of cases involving methamphetamine have increased, as has the quantity of the drug submitted to crime labs. Furthermore, the extent to which law enforcement agencies are encountering methamphetamine has also dispersed during the 1990s across a large area of the state; however, when this data is examined more closely and disaggregated, it is evident that most of the statewide increase has been fueled by activities in Illinois' rural jurisdictions. For example, the quantity of methamphetamine seized and submitted to the Illinois State Police increased dramatically between 1994 and 2002, jumping from 3,433 grams to 28,002 grams. When controlling for the differences in the population of Illinois' counties, the 2002 methamphetamine seizure rate of 710.8 grams per 100,000 residents in Illinois' rural counties was more than five times that seen in the rest of the state (see Table 1).

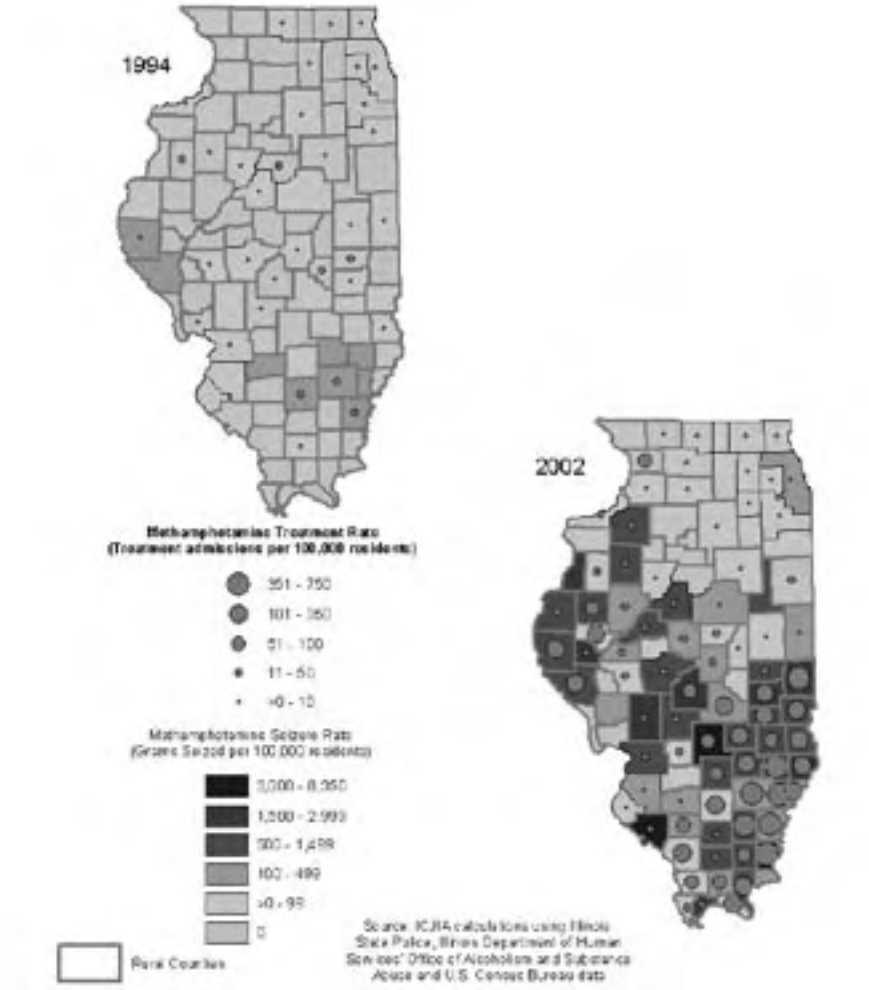
Table 1
Volume and Rate of Methamphetamine Drug and Lab Seizures by Law Enforcement Agencies, and Treatment Admissions, 1994 to 2002 (Rates per 100,000 Residents in Parentheses)

	Rural Counties		Other Counties		State Total	
	1994*	2002	1994*	2002	1994*	2002
Meth Seizures Submitted to Crime Labs (Grams)	2,632 (140.2)	13,268 (710.8)	801 (8.1)	14,734 (138.8)	3,433 (29.1)	28,002 (224.3)
Meth Submissions to Crime Labs (Cases) (*1998)	362 (18.7)	2,034 (107.5)	266 (2.6)	683 (6.4)	628 (5.2)	2,717 (21.8)
Meth Labs Identified (*1997)	23 (1.2)	317 (17.0)	1 (0.01)	86 (0.81)	24 (0.2)	403 (3.2)
Meth Treatment Admissions	46 (2.5)	1,609 (86.2)	51 (0.5)	540 (5.1)	97 (0.8)	2,149 (17.2)

However, it also appears that methamphetamine is spreading to other parts of the state, including many of the "downstate" urban areas (e.g., outside of Cook County/Chicago and the suburban collar counties). Illustrative of this dispersion is the fact that in 1994, rural counties accounted for 77% of all methamphetamine

seized in Illinois, compared to 47% in 2002. Another pattern indicating the spread of the drug throughout large areas of Illinois is the number of different counties where methamphetamine has been encountered by police departments. In 1994, methamphetamine was seized in 61 of Illinois' 102 counties, most (45 or 74%) of which were rural. In 2002, however, methamphetamine had been seized in 92 Illinois counties, including 66 of the 74 rural counties in the state and 26 of the 28 urban counties. By presenting the rates of methamphetamine seizures, Map 1 visually demonstrates the spread of methamphetamine across Illinois between 1994 and 2002, while also illustrating how the highest rates tend to be in rural areas of western and southeastern Illinois. For those not familiar with the geography of Illinois, the area with the lowest methamphetamine seizure rates is northeastern Illinois, which is where the City of Chicago, and its suburbs are.

Map 1
Methamphetamine Seizure and Treatment Rates



Another interesting pattern when it comes to methamphetamine seizures across Illinois' counties is that it is *the only drug* for which rural counties experienced higher rates of seizure than more urban counties in the state. For example, in 2002, heroin seizure rates in rural counties were 98% lower than in the rest of Illinois; cocaine seizures rates were 93% lower than in the rest of Illinois; and cannabis seizures were 30% lower in rural Illinois. When it came to methamphetamine seizures, however, the 2002 rate of 711 grams per 100,000 residents in Illinois' rural counties was more than three times higher than the rest of the state (see Table 1).

Similar trends and patterns were seen when the *number* of submissions (e.g., cases) to crime labs involving methamphetamine were examined (see Table 1). For example, statewide, between 1998 and 2002, the number of methamphetamine submissions for analysis to the Illinois State Police Division of Forensic Services crime laboratories increased more than four fold, from 628 to 2,717, and the number of different counties submitting methamphetamine also increased, from 73 in 1998 to 92 in 2002. Submissions from rural counties accounted for 72% of all methamphetamine submissions in 2002.

Methamphetamine Lab Seizures

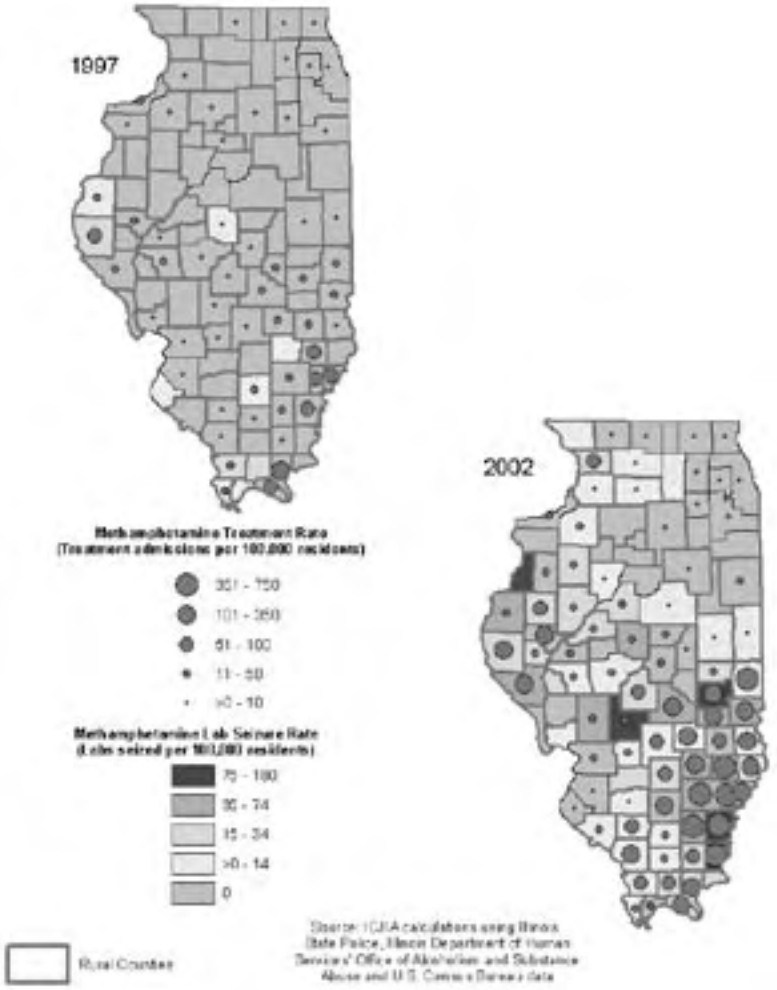
As a result of the growing number of independent producers who began operating laboratories, often small, and in more regions of the country, the number of domestic methamphetamine laboratories seized in the United States by the DEA increased dramatically between 1994 and 2001, from 263 to nearly 8,000 (U.S. Department of Justice, Drug Enforcement Administration, 2003). This growing number of local independent distributors are producing small quantities of methamphetamine for retail distribution in their local areas. Despite law enforcement pressure and the regulation of precursor chemicals, individuals and groups continue to manufacture bulk quantities of methamphetamine. According to the National Drug Intelligence Center, law enforcement reporting indicates that local independent lab operators account for as much as 80% of retail methamphetamine distribution in some areas of the country (National Drug Intelligence Center, 2001).

In Illinois, methamphetamine labs are reported to, and tracked by, the Strategic Information and Analysis Group within the Illinois State Police (ISP). Data regarding these were aggregated at the county level and subsequently aggregated into their respective geographic regions. The number of clandestine methamphetamine labs seized statewide increased dramatically between 1997 and 2001, from 24 to 666, before declining to 403 in 2002 (see Table 1). As with seizures of the actual drug (e.g., "finished product"), most identified labs were found in rural areas of the state. For example, during the period examined (1997 to 2002), there were 244 labs seized in urban counties, compared to more than 1,500 in Illinois' rural counties. Thus, rural counties accounted for the vast majority (86%) of labs seized in Illinois between 1997 and 2002, and as a result, they had the highest rate of methamphetamine labs when population was taken into account. As seen in Table 1, in 2002, Illinois' rural counties had a lab seizure *rate* more than 17 times greater than the rest of the state.

As with the seizures of the drug, the identification of labs has also diffused to many more counties, although they still appear to be concentrated in rural areas. For example, in 1997, clandestine methamphetamine labs were seized in only ten of Illinois' 102 counties, nine of which were rural counties. By 2002, however,

methamphetamine labs were discovered in 60 different Illinois counties, with most of these (50 of the 60) counties being rural. Map 2 demonstrates the spread of clandestine methamphetamine lab seizures across Illinois between 1997 and 2002, by depicting the lab seizure rates for Illinois counties and revealing how rural areas accounted for those counties experiencing the highest lab seizure rates in 2002. The counties that experience the highest rates of methamphetamine lab seizures and places where high rates were persistent over time, could be the result of increased law enforcement awareness/attention to the signs of these labs, or it may be that they are in close proximity to the consumer markets.

Map 2
Methamphetamine Lab and Treatment Rates



In general, there was a fairly high degree of correlation between the number of methamphetamine submissions (e.g., cases) to crime labs across the counties and the quantity (e.g., grams) of the drug submitted to the labs. Still, it does appear that the amount of methamphetamine involved per seizure (e.g., case) is higher in the urban areas. Specifically, during 2002, the average weight of methamphetamine per seizure in urban areas was 21.6 grams per seizure, compared to an average of 6.6 grams per case in rural parts of the state. On the other hand, there was only a slight to moderate correlation between the rate of methamphetamine lab seizures and the rate of submissions of the finished product (cases and grams), which would tend to indicate that places where the labs are seized may not necessarily be the places where the largest volume of the finished product is being discovered by police departments. There also appears to be some counties that have consistently experienced high rates of methamphetamine seizures and labs. In order to identify and analyze the counties with a chronic/persistent presence of methamphetamine across Illinois' 102 counties, the 20 counties with the highest rates across each indicator were identified. Between 1997 and 2002, nine counties, all of which were rural (i.e., Adams, Clark, Clay, Coles, Cumberland, Gallatin, Massac, White, and Wayne) consistently ranked in the top 20 counties in at least one-half of the years examined. With the exception of Adams County, all of these counties are concentrated in southeastern Illinois.

Arrest Data

Arrest data was obtained through the Illinois Uniform Crime Reporting (I-UCR) Program. These data, which are reported at the agency level, were subsequently aggregated to the county level and then grouped into their respective geographic regions. Unlike the crime-lab submission data, however, the only distinction that can be made when arrests are examined is between those involving cannabis (identified as violations of Illinois' Cannabis Control Act) and all other illegal substances (identified as violations of Illinois' Controlled Substances Act). This presents a major limitation with using UCR data in that drug arrests by local police departments do not distinguish between arrests for cocaine, crack cocaine, heroin, methamphetamine, etc., but are instead reported in aggregate as a violation of the Controlled Substances Act. Despite this limitation, when examined in light of what was seen in terms of crime lab submissions, some general conclusions regarding the impact of methamphetamine on arrests across Illinois can be offered. Furthermore, through examination of arrests made by Illinois' multijurisdictional drug enforcement units, which do report arrests by specific drug-type, these conclusions can be further supported.

When long-term trends in arrests for violations of the Controlled Substances Act are examined, which includes cocaine, heroin, and methamphetamine, among other drugs, a number of patterns are evident. First, is the dramatic increase in arrests for the Controlled Substances Act during the late 1980s across all of the urban areas of the state. Based on examination of historic drug seizure data, it appears that most of this increase during the late 1980s in Illinois urban areas was the result of increased arrests for cocaine/crack-cocaine offenses. On the other hand, during this period (the late 1980s) of dramatic increases in Controlled Substance Act arrests in Illinois urban areas, arrests for these offenses in Illinois rural counties remained relatively stable and low. Beginning in the mid-1990s, the period when methamphetamine seizures began to be made by police, the Controlled Substance Act arrest rate in Illinois rural counties also began to increase. By 2002, the Controlled Substance Act

arrest rate in Illinois rural counties was equal to, or higher than, the rates seen in urban areas of the state outside of Cook County/Chicago. Thus, while rural counties historically had much lower arrest rates for Controlled Substance Act violations, it appears that the emergence of methamphetamine in those areas has become the equalizer in terms of arrest rates for these felony-level drug offenses.

Obviously, this dramatic increase in Controlled Substances Act arrests in rural counties fueled by methamphetamine has also had a profound effect on the output and activities of other components of the justice system in these jurisdictions, including the courts, probation, and prison admissions. For example, between 1997 and 2002, the number and rate of prison sentences for violations of the Controlled Substances Act from rural counties increased at a pace consistent with arrests for these offenses, and by 2002, the rate of prison admissions for drug offenses from rural counties was equal to or higher than most urban parts of Illinois outside of Chicago/Cook County. Specifically, between 1997 and 2002, prison admissions from rural counties for drug-law violations doubled, and this rate of increase was also twice as large as that experienced in the rest of Illinois during that period.

Another way to examine the rates and patterns of methamphetamine arrests in Illinois is through analyses of the cases developed by Illinois' 21 multijurisdictional drug enforcement units (referred to as Metropolitan Enforcement Groups, or MEGs, and Drug Task Forces in Illinois). While these units tend to focus on a different type of drug offender than local police departments, they do report arrest data that is drug-specific, unlike that reported through the UCR program (Ramker et al., 2003). Based on analyses of these data, Illinois' multijurisdictional drug units did not begin to make arrests involving methamphetamine until 1997, but after that, arrests involving methamphetamine jumped dramatically. For example, between state fiscal years (SFYs) 1997 and 2002, the number of methamphetamine arrests by these multijurisdictional drug units increased from just six to 1,000. Furthermore, when these multijurisdictional units were classified as serving either mostly urban, mixed urban/rural, or mostly rural jurisdictions, patterns consistent with those seen in methamphetamine and lab seizures were found. While methamphetamine arrests increased across all regions covered by an MEG or task force during the late 1990s and early 2000s, those units serving mostly rural areas experienced the greatest increase in methamphetamine arrests, going from three in 1997 to 714 by 2002, followed by mixed urban/rural units and mostly urban units, which increased from three to 219 arrests and zero to 67 arrests, respectively. Thus, in SFY 2002, those multijurisdictional drug units in mostly rural areas accounted for more than 71% of all methamphetamine arrests by MEGs and task forces in the state. In response to these patterns, the Illinois Criminal Justice Information Authority provided additional funding to a number of multijurisdictional drug units in the state to address the growing problem of methamphetamine production and distribution. An evaluation of the implementation of these specialized efforts is currently being conducted by Dr. Ralph Weishiet at Illinois State University and will be completed by November 2003.

Methamphetamine Treatment Admissions

Another way to examine the extent and nature of methamphetamine use is by considering admissions to drug treatment programs in the state. Specifically, data on the aggregate number of individuals admitted to drug treatment for

methamphetamine abuse were obtained for each county from the Illinois Department of Human Services' Office of Alcoholism and Substance Abuse (OASA). This data was then aggregated so as to correspond to each respective geographic region. Although the characteristics and substances abused by those admitted to treatment may not be reflective of general drug use patterns within a region, one can interpret treatment admissions as reflective of more serious substance abusers.

In Illinois, the number of admissions to drug treatment in which methamphetamine was identified as the primary substance of abuse increased dramatically between SFYs 1994 and 2002, from 97 to more than 2,100 (see Table 1). As with seizures of the drug, during the period examined, treatment admissions for methamphetamine abuse were concentrated in rural areas of the state, but they have also spread to a wide number of jurisdictions. For example, methamphetamine abuse treatment admissions from rural counties increased from 46 to 1,609 between SFYs 1994 and 2002, and more than tripled in the three years from SFY 2000 to 2002. During the entire period examined, rural counties accounted for more than 70% of all methamphetamine treatment admissions in Illinois. Furthermore, by 2002, one in five admissions to treatment for abuse of an illegal drug in Illinois rural counties involved methamphetamine. By comparison, during 2002, there were fewer than 50 admissions to treatment for methamphetamine abuse in Chicago/Cook County and less than 330 from all other urban areas of the state combined. In these urban areas of the state, cocaine and heroin accounted for the majority of treatment admissions, while methamphetamine admissions accounted for less than 2% of all drug treatment admissions for abuse of an illegal substance. As a result of these patterns, in 2002, Illinois rural counties had a methamphetamine treatment admission rate that was more than 15 times greater than the rate for the rest of the state (see Table 1).

As with law enforcement indicators, treatment admission trends for methamphetamine abuse also indicate a great degree of dispersion throughout the state during the mid-1990s through the early 2000s. Specifically, during SFY 1994, admissions for treatment of methamphetamine abuse were reported in 34 of Illinois' 102 counties, 18 of which were rural counties. By SFY 2002, however, methamphetamine treatment admissions were reported in 80 different Illinois counties, with rural counties accounting for three-quarters (61) of these 80 counties. Map 1 demonstrates the spread of methamphetamine treatment admissions across Illinois by summarizing rates for each county between SFYs 1994 and 2002. Again, rural counties, particularly those in southeastern and western Illinois, accounted for the majority of those counties experiencing the highest treatment admission rates in SFY 2002.

Based on an examination of drug treatment admission data, it is also evident that some of the characteristics of methamphetamine abusers in treatment is markedly different from those admissions associated with abuse of other drugs, such as cocaine, heroin, and marijuana. For example, the most dramatic difference, which is likely influenced by the difference in the geographic distribution of the population accessing treatment for methamphetamine abuse (e.g., rural), is that nearly all (95%) of those admitted to treatment for methamphetamine abuse in Illinois during SFY 2002 were white, compared to 30% or less of those admitted to treatment for abuse of cocaine, heroin, or marijuana. The impact of law enforcement efforts also appears to be strongly associated with methamphetamine treatment admissions, with roughly one-half of all methamphetamine treatment admissions resulting from referrals by

the criminal justice system (e.g., treatment as a condition of probation or parole). By comparison, less than one-third of people admitted to treatment in Illinois during 2002 for abuse of cocaine or heroin were referred by the criminal justice system. Despite this pattern, it is interesting to note that only about one-third of those admitted to treatment for methamphetamine abuse had prior criminal convictions, compared to about one-half of those admitted to treatment for cocaine or heroin abuse. Finally, as was the case with treatment admissions for most substances, with the exception of marijuana, roughly 55% of those admitted to treatment for methamphetamine abuse were male.

Examining Law Enforcement & Treatment Indicators Together

While the law enforcement and treatment indicators examined above provide a great deal of insight into the extent of the methamphetamine "encounters" across Illinois and over time, an even better understanding of the unique nature of the methamphetamine problem can be generated through a simultaneous examination of these two sources of information. For example, by comparing which counties in Illinois began to "see" methamphetamine as the result of law enforcement seizures versus treatment admissions, it is clear that when the drug first began to emerge in Illinois, police departments across the state were more likely to seize methamphetamine than were treatment agencies likely to have people showing up for services with a methamphetamine abuse problem. Illustrative of this is the fact that in 1994, nearly 30% of Illinois' 102 counties had police departments submitting methamphetamine to an Illinois State Police crime lab, but did not have anyone admitted to substance abuse treatment for the drug. Conversely, only 11% of the counties saw people admitted to treatment for methamphetamine abuse, but none was seized by police departments. In the remaining counties, both law enforcement and treatment were seeing the drug (22% of the counties) or neither treatment nor law enforcement saw evidence of methamphetamine (36%). Further evidence of this limited relationship between methamphetamine treatment admission rates and seizure rates by police during the early stages of the drug's evolution in Illinois can be seen in the relatively low correlation ($r = .27$) between these two indicators during 1994. As the drug began to spread across the state, however, the correlation and correspondence between treatment indicators and seizures by police involving methamphetamine began to come together. By 2002, most counties in the state had seen methamphetamine—through both drug treatment and law enforcement indicators. Similarly, the correlation between methamphetamine treatment admission rates and methamphetamine submission rates (e.g., cases) was quite high ($r = .70$). Thus, it appears that with methamphetamine, law enforcement agencies were initially more likely to see the drug on the street than drug treatment agencies were in terms of seeing people seeking services for their methamphetamine abuse. As the drug spread to more and more counties, however, law enforcement and treatment agencies were seeing similar levels or rates of the methamphetamine problem.

Another interesting pattern seen when treatment and law enforcement indicators were examined together is the fact that there appears to be a much stronger correlation or association between measures of the "finished product" availability (e.g., seizures by police) and use (e.g., treatment admissions) than between measures of production (e.g., meth labs) and measures of either finished product or use. Specifically, the correlation between lab seizure rates and methamphetamine seizure rates (both quantity/grams and cases) was only moderate ($r = .31$ to $r = .46$), as was

the case with lab seizure rates and treatment admission rates (r = .33). This could possibly be indicative of a pattern in which methamphetamine production may not necessarily be supplying the drug market within the same specific counties, but rather, counties (consumers) in the surrounding area (e.g., contiguous counties). This theory can be partially supported by examining the relationship between methamphetamine lab rates to the treatment admission rates in contiguous counties. Doing so reveals that in a number of instances, counties with high lab seizure rates had relatively low treatment admission rates, but the treatment admission rates in the contiguous counties was relatively high. Visually, this pattern is also evident in Map 2, which shows many counties with high lab seizure rates, but relatively low treatment admission rates. Many of these counties with high lab seizure rates and low treatment rates, however, are adjacent to places (counties) with high rates of methamphetamine treatment admissions and law enforcement seizures of the finished product.

Conclusion

Based on analyses of law enforcement and treatment indicators available in Illinois, it is clear that methamphetamine "activity" in the state has increased dramatically since the mid-1990s, with most of this being fueled by activities taking place in Illinois' rural jurisdictions. Based on the quantity of methamphetamine seized by law enforcement agencies, the number of methamphetamine labs identified by police, and the number of people seeking treatment for methamphetamine abuse, the drug's use and production has been evolving across Illinois but is still primarily concentrated in rural communities. For example, out of the 2,717 submissions of methamphetamine to crime labs throughout the state during 2002, 75% were from rural jurisdictions. Importantly, methamphetamine is the only drug for which rural jurisdictions account for such a large proportion of submissions to crime labs. Also, through analyses of the different indicators together, a complex picture of methamphetamine production in proximity to consumer markets begins to emerge. Although not presented in this article, there also appears to be high concentrations and correlations of methamphetamine treatment admissions between some counties in states contiguous to Illinois, such as that in southeastern Illinois and southwestern Indiana. Similarly, there are a group of counties in Illinois and Missouri with high rates of methamphetamine treatment admissions. Others do not have high levels of admissions, which may indicate how counties very close to one another, but separated by natural boundaries (e.g., the Mississippi River), may not necessarily both have high rates of methamphetamine treatment admissions. From a law enforcement standpoint, these relationships point to the importance of not only multijurisdictional efforts within a state, but also interstate communication and coordination of enforcement approaches for methamphetamine, particularly given the potential link between areas of production and consumption.

It is also important to point out that lawmakers in Illinois have responded to the emergence of methamphetamine in the state. During the period when methamphetamine use, arrests, and clandestine labs seizures were on the rise, lawmakers in Illinois reexamined the existing drug laws and recognized the need to bring the penalties associated with methamphetamine possession, delivery/sale, and production in line with other drugs. For example, prior to 2000, there was a dramatic disparity in the classification of offenses involving methamphetamine and other drugs, such as cocaine and heroin. Specifically, prior to the year 2000, it required

the sale/delivery of more than 200 grams of methamphetamine before the offense was considered a Class X felony (a non-probationable offense with a mandatory prison sentence of 6-30 years). By comparison, the sale/delivery of more than 15 grams of cocaine or heroin was classified as a Class X felony and had been since the late 1980s. In response to this disparity, in 2000, the Illinois legislature changed the weight classification for methamphetamine, bringing it into line with cocaine. Similar changes were also made in the weights of the drug associated with lower level offenses, such as possession or sale/delivery of lesser quantities of the drug. Lawmakers also responded to the unique challenge of methamphetamine being produced locally by creating laws to govern the possession of the precursor chemicals for the drug.

Finally, although methamphetamine activity (e.g., use, arrests, treatment admissions, etc.) in Illinois still accounts for a relatively small proportion of the illegal drug problem in the state, the way the drug has evolved in Illinois appears to be unique and unlike other drugs, such as cocaine, crack, and heroin. Specifically, methamphetamine is a drug that is disproportionately seen in the more rural communities of Illinois, and due to the nature of rural policing and criminal justice, it is producing unique financial challenges. Thus, while the same types of data appear to indicate that crack cocaine and heroin have not had a substantial presence in rural parts of Illinois, the same cannot be said for methamphetamine. On the other hand, these same data sources indicate the presence of cocaine, crack, and heroin users based on treatment admissions but little law enforcement experiences encountering these drugs, according to seizure data. Based on the analyses presented in this article, it appears that there are a number of possible advantages to having the treatment and justice system's communicate more frequently regarding what types of drug problems each other is encountering. In many ways, and in many jurisdictions, law enforcement agencies could have informed treatment agencies of the oncoming methamphetamine problem years before treatment agencies ever saw a patient show up for abuse of methamphetamine. By examining a wide array of drug-related data, from various perspectives, criminal justice and substance abuse policymakers and practitioners will be able to get a much better sense of how certain drugs are emerging and how they can be responded to. They will have a much larger perspective on the complexity of drug use, production, and distribution both in Illinois as well as surrounding states, which may impact their respective fields.

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Profiles of Methamphetamine Users as Seen in Various Data Sets

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At the same time that law enforcement has been responding to problems in the increasing use of methamphetamine, information has been gathered on users of methamphetamine and their characteristics as they are seen in surveys, emergency rooms, treatment programs, and other situations. By bringing these diverse information sources together, it is possible to have a better picture of who is using methamphetamine and the emerging trends in the use of this drug. This information, however, is not as clear as would be desired due to the fact that there are different terms for and forms of the substance "methamphetamine."

"Speed" is often a powdered methamphetamine that ranges in color from white to yellow, orange, brown, or pink and is usually of relatively low purity. "Pills" can be pharmaceutical grade amphetamines such as Adderall, Ritalin, or Phenteramine, or the pills can be methamphetamine powder that has been pressed into tablets and sold as amphetamines or ecstasy. In Australia, there is also a damp, sticky powder that often has a brownish tinge and is known as "Base," "point," or "wax." It is difficult to dissolve for injection without heat, but it can be of higher purity than speed (Churchill & Topp, n.d.). "Ice," also known as "shard," "shabu," "crystal," or "crystal meth," is methamphetamine that has been "washed" in a solvent such as denatured alcohol to remove impurities. Evaporation of the solvent yields crystals that resemble glass shards or ice shavings. It is usually smoked and has longer-lasting physical effects and purity levels above 80%, although low quality methamphetamine may also be marketed as ice (NDIC, 2003).

National Household Survey on Drug Abuse

The National Household Survey on Drug Abuse (NHSDA) is the major survey on the use of illicit drugs, alcohol, and tobacco by the civilian, noninstitutionalized population in the United States. The NHSDA interviews approximately 70,000 people age 12 years or older in every state over a 12-month period. The 2001 survey (SAMHSA, 2002b) reported that lifetime use of all stimulants (including amphetamines and methamphetamine) by those aged 12 and older increased from 6.6% in 2000 to 7.1% in 2001; this increase was statistically significant ($p<0.05$). Past-year use of all stimulants increased from 0.9% in 2000 to 1.1% in 2001, and past-month use increased from 0.4% to 0.5% in the same time period; these were not significant changes. The largest increases were in the population group aged 18-25, for which lifetime use increased from 7.6% in 2000 to 9.5% in 2001; past-year use increased from 2.4% to 3.4%; and past month use increased from 0.8% to 1.3%. All of the increases for this age group were statistically significant ($p<0.01$).

In comparison, lifetime use of methamphetamine (as compared to "all" stimulants) among the general population increased from 4.0% in 2000 to 4.3% in 2001; past-year use increased from 0.5% to 0.6%; and past-month use increased from 0.2% to 0.3%. None of these increases were significant in any age group, except for the increases in methamphetamine use among young people ages 18 through 25. Lifetime use for this group increased from 4.1% to 5.1%; past-year use increased from 1.2% to 1.7%; and past-month use increased from 0.3% to 0.7% ($p<0.01$).

New users of methamphetamine increased from 164,000 in 1990 to 344,000 in 2000 (SAMHSA, 2002a). In comparison, the largest number of new users ever was in 1975, when there were 400,000 new methamphetamine users. Between 1973 and 1982, the number of new methamphetamine users remained fairly level at between 300,000 and 400,000 new users per year, and the majority of these were ages 18 to 25. With the increase in methamphetamine use in the 1990s, the age of new users decreased, and they were approximately evenly split between the 12-to-17 and 18-to-25 age groups. The average age of new users fell from 22.3 years in 1990 to 18.4 years in 2000.

Drug Abuse Warning Network Emergency Department Episodes

The Drug Abuse Warning Network is a national surveillance system that collects data on drug-related visits to emergency departments (EDs) and drug-related deaths reviewed by medical examiners and coroners. Data on ED visits are collected from a national probability sample of non-federal, short-stay hospitals, with oversampling in 21 major metropolitan areas. Data from the sample is used to generate estimates for the coterminous United States and the 21 metropolitan areas.

ED visits are reportable to DAWN if a patient between the ages of 6 and 97 was treated for a condition associated with intentional drug abuse, including recreational use, dependence, or suicide. Visits involving chronic health conditions resulting from drug abuse are reportable as is abuse of prescription and over-the-counter medications. Adverse reactions associated with appropriate use of these drugs and accidental ingestion of any drug is not reportable.

DAWN collects information on both methamphetamine and amphetamines. A number of terms were mentioned by patients to describe methamphetamine, including "crank," "crystal," and "speed." In some locations, however, the term "amphetamine" may erroneously have been used by patients to describe methamphetamine.

The number of mentions of amphetamines in the EDs increased from 10,118 in 1994 to 18,555 in 2001, an increase of 83.4% ($p<0.05$) (SAMHSA, 2002c). The number of mentions of methamphetamine dropped from 17,537 in 1994 to 14,923 in 2001, a decrease that was not statistically significant. Given the problems in the use (or misuse) of the terms "amphetamines" and "methamphetamine," these separate trends may not shed much light on the extent of the problem, although it should be noted that the number of mentions of both substances increased from 27,655 in 1994 to 33,478 in 2001.

Table 1 shows that between 1994 and 2001, the proportion of males mentioning amphetamines or methamphetamine in the EDs decreased, while the proportion of persons aged 35 and older increased.

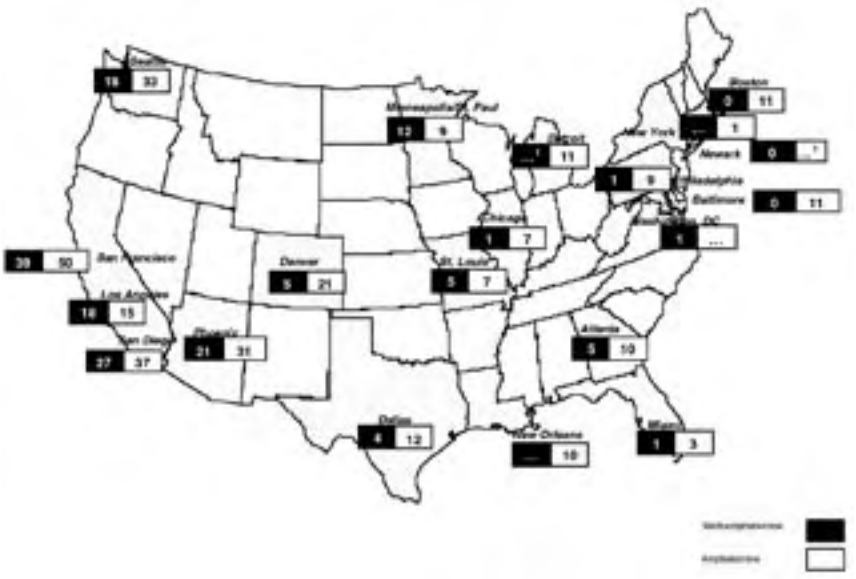
Table 1
Demographic Characteristics of DAWN Emergency Department Mentions of Amphetamines or Methamphetamine by Patient Characteristics: 1994 and 2001

	Male	White	Black	Hispanic	Unknown	12-17	18-25	26-34	35+
Amphetamines									
1994	59.1%	63.0%	8.0%	21.9%	7.1%	10.3%	24.6%	38.1%	27.0%
2001	52.3%	63.2%	6.8%	13.5%	16.5%	13.8%	28.6%	26.0%	31.4%
Methamphetamine									
1994	64.7%	69.7%	5.6%	14.9%	9.8%	11.2%	31.0%	33.1%	24.7%
2001	54.5%	73.8%	2.5%	13.2%	10.5%	8.4%	31.2%	31.5%	27.9%

DAWN also reports the motive for using a drug, and the proportion of patients seeking help for dependence on methamphetamine increased from 41% in 1994 to 50% in 2001.

Figure 1 shows that the rate of ED mentions of amphetamines and methamphetamine is much higher in the western United States than in the East (NIDAa, 2003, p. 36).

Figure 1
Rates of Methamphetamine and Amphetamine DAWN ED Mentions Per 100,000 Population for Selected Areas: 2001*



[1]Dots (...) indicate that an estimate with a relative standard error greater than 50% has been suppressed.
Source: NIDA Community Epidemiology Work Group, Epidemiologic Trends in Drug Abuse, Advance Report, Dec. 2002

Poison Control Center Calls

Poison control centers can also shed light on cases that involve confirmed exposures to amphetamines and methamphetamine. In Texas in 2002, there were 1,847 calls involving exposure to an amphetamine such as Adderall, Ritalin, or Phentermine and 248 cases involving exposure to methamphetamine, speed, ice, or crank. Of the methamphetamine cases, 77% were intentional misuse or abuse cases, and of the data reported, 59% of these misuse and abuse cases were male, and the average age was 27.4 years.

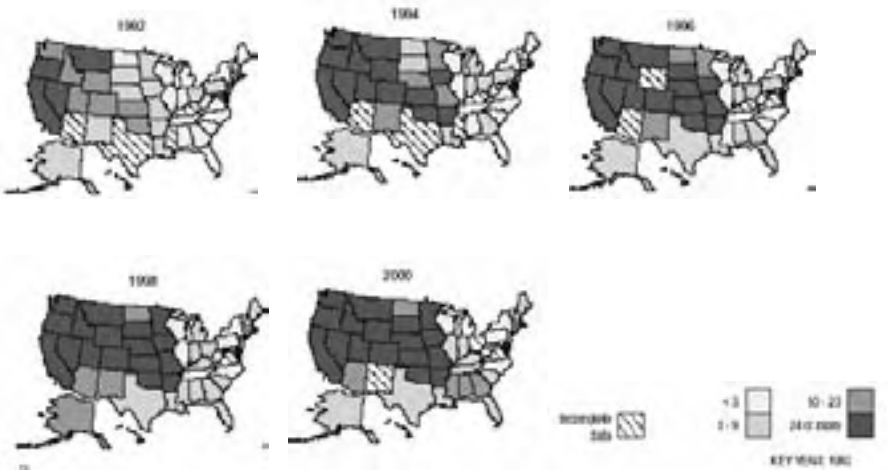
Admissions to Treatment

The national Treatment Episode Data Set (TEDS) is a compilation of data on the demographic and substance abuse characteristics of persons admitted to substance abuse treatment. Statistics on treatment admissions are collected by state substance

abuse agencies and then submitted to the Substance Abuse and Mental Health Services Administration (SAMHSA) in a standard format.

As Figure 2 shows, methamphetamine and amphetamine admission rates have increased, spreading from the West into the Midwest and South (SAMHSA, 2002e, pp. 24-25). The treatment admission rate for primary amphetamine abuse rose from 10 admissions per 100,000 population aged 12 and over in 1992 to 36 per 100,000 in 2000 (SAMHSA, 2002e, p. 36).

Figure 2
Admissions for a Primary Problem of Methamphetamine or Amphetamine Per 100,000 Population for Clients Aged 12 and Over



Source: Substance Abuse and Mental Health Services Administration (2002e). Treatment Episode Data Set (TEDS): 1992-2000. National Admissions to Substance Abuse Treatment Services, (Office of Applied Studies. DASIS Series: S-17, DHHS Publication No. SMA 02-372). Rockville, MD, pp. 24-25.

Comparison of the characteristics of persons admitted to treatment in programs across the United States in 1994 and 2001 in Table 2 shows that average age has increased and the proportion who are white has decreased, with increases in the Hispanic Mexican and other/unknown race/ethnic categories (SAMHSA, 2003). The increased Hispanic admissions could be a result of the increased manufacturing and trafficking by Mexican nationals, which would result in more availability for use (and then dependence) in the Hispanic communities. The increase in the other/unknown category reflects an increase in the use of ice by Asians, Native Hawaiians, and other Pacific Islanders.

The most important change is the increase in the proportion of clients who are smoking methamphetamine, which documents the increase in the use of ice. The proportion of referrals from the criminal justice system has also increased, reflecting more use of programs that divert substance abusers from incarceration into treatment. Alcohol and marijuana continue to be the other substances that are most widely abused by persons who use methamphetamine or amphetamines.

Table 2
Characteristics of Clients in the United States Admitted for a Primary Problem with Amphetamines or Methamphetamine as Reported to the Treatment Episode Data Set: 1994 and 2001

	1994*	2001**
# Admitted	44,371	98,306
% of All Admissions	2.7%	5.7%
Demographic Characteristics		
Average Age	28.6	30.5
% Male	53.4%	54.0%
% White	82.3%	76.4%
% Black	2.5%	2.7%
% Hispanic Mexican	7.3%	9.3%
% Other/Unknown	7.8%	11.6%
Route of Administration		
% Inhaling	42.7%	18.1%
% Injecting	28.6%	24.9%
% Smoking	16.8%	44.2%
% Oral	9.8%	9.3%
% Other/Unknown	2.1%	3.4%
Referral Source		
Criminal Justice	33.9%	46.2%
Individual	34.7%	25.1%
Substance Abuse Provider	7.5%	5.3%
Other Health Care Provider	6.8%	5.2%
Other Community Referral	13.8%	13.8%
Other/Unknown	3.3%	4.3%
Other Problem Substances* **		
None	19.7%	22.8%
Alcohol	46.5%	42.1%
Marijuana	45.1%	44.4%
Powder Cocaine	11.1%	7.3%
Crack Cocaine	3.7%	3.7%
Heroin	3.4%	2.7%
Other Opiates	1.0%	1.4%
Hallucinogens	2.8%	1.6%
Tranquilizers	1.1%	0.9%
Sedatives	1.0%	0.6%
Other Methamphetamine	0.8%	0.7%
Other Stimulants	0.4%	0.3%
Other Drugs	1.7%	1.7%

* Data from SAMHSA, *Treatment Episode Data Set (TEDS): 1992-2000.*
** Data provided by the Office of Applied Studies, Substance Abuse and Mental Health Services Administration special data runs, July 9, 2003.
*** % sum to more than 100% because a person can report more than one additional problem substance

The Texas Commission on Alcohol and Drug Abuse (TCADA) collects additional data on clients entering publicly funded treatment, including whether each client

experienced any of the seven domains of the Addiction Severity Index (ASI) (McLellan, Luborsky, Woody, & O'Brien, 1980) in the month prior to treatment. Table 3 provides insight into clients entering TCADA-funded programs with a problem with methamphetamine or amphetamines based on the way in which they took the drug. Clients who smoke these substances were the youngest, had been using fewer years, and were the most likely to be first admissions to this treatment program and to report fewer social relationship problems with peers.

Those who inhaled or "snorted" methamphetamine were the most likely to be married, male, Hispanic, and employed. They were also less impaired, being less likely to report ASI problems such as health problems, employment problems such as poor attendance or poor job performance, family problems such as serious arguments or not caring for children, emotional or psychological problems such as depression, anxiety, hallucinations or serious thoughts of suicide, or alcohol or other drug-related problems (e.g., blackouts, withdrawal symptoms, or wanting to stop and being unable to do so).

Those who injected stimulants may include those who have transitioned from inhaling or smoking methamphetamine to injecting, as they had used longer and were more impaired. They were more likely to be unemployed and to be homeless. They were also more likely to have employment problems, family problems, peer or social relationship problems, emotional or psychological problems, and drug or alcohol problems. The extent of their impairment is also shown by the fact that they were more likely to have been in treatment previously.

The clients who took stimulants orally include clients who were using legally manufactured amphetamine pills. They were most likely to be female and older, and their level of impairment based on the ASI Indices was not significantly different from the entire population of stimulant users in terms of their need for treatment.

Table 3
Characteristics of Adult Texas Clients Admitted to TCADA-Funded Treatment with a Primary Problem of Amphetamines or Methamphetamine by Route of Administration: 2002

	Smoke	Inject	Inhale	Oral	All**
# Admissions	753	1,769	385	233	3,143
% of Stimulant Admissions	24%	56%	12%	7%	100%
Lag–First Use to Treatment (Years)	9*	13*	10*	11	11
Average Age-Years	29*	31*	30	32*	31
% Male	47%	46%	53%*	37%*	47%
% African American	1%	1%*	1%	3%*	1%
% Anglo	90%*	95%*	87%*	88%*	92%
% Hispanic	7%*	4%*	9%*	8%	6%
% Married	20%	19%	23%*	15%	20%
% First Admissions	61%*	45%*	55%	50%	50%
% CJ or Legal Problems	47%	49%	52%	43%	48%
% Employed	25%*	15%*	29%*	20%	19%
% Homeless	7%*	11%*	4%*	10%	9%
% Health Problems	30%*	31%*	21%*	32%	30%
% Employment Problems	47%*	55%*	45%*	46%	51%
% Family Problems	57%*	64%*	52%*	57%	61%
% Social Problems	39%*	50%*	41%*	42%	46%
% Psychological Problems	60%	66%*	56%*	60%	63%
% Substance Abuse Problems	70%*	75%*	60%*	61%	71%

* Difference between this route of administration and all admissions was statistically significant at 0.05 level

** "All" column includes clients for whom route of administration was not reported.

Drug Abuse Warning Network (DAWN) Medical Examiner Reports

Reports from medical examiners to DAWN provide information on deaths involving drug abuse that were identified and submitted by participating death investigation jurisdictions across the United States. Two types of drug abuse deaths are reportable to DAWN: (1) those that were caused by a drug and (2) those in which the drug played a contributory role in the death. In 2001, 128 jurisdictions in 42 metropolitan areas submitted data to DAWN.

Deaths due to methamphetamine continue to be geographically concentrated in the Midwest and West. Metropolitan areas reporting the most methamphetamine mentions in 2001 were Phoenix (122), San Diego (94), and Las Vegas (53). Fifteen metropolitan areas reported fewer than five methamphetamine mentions; Birmingham, Buffalo, Louisville, Milwaukee, Minneapolis, New Orleans, Newark, Providence, and Wilmington (DE) reported none. Among metropolitan areas reporting any methamphetamine mentions, the drug was reported to be used with at least one other drug in nine out of ten cases (91%), on average (SAMHSA, 2002d, p. 11).

Arrestee Drug Abuse Monitoring Data

The Arrestee Drug Abuse Monitoring program (ADAM) measures the extent of drug use in the high-risk population of people who have been arrested and booked or

detained. The data is collected in participating counties through probability-based sampling of male arrestees in adult booking facilities and purposive sampling of female arrestees and juvenile detainees. Information comes from interviews and urinalyses obtained voluntarily and recorded confidentially in booking facilities, usually on the day of arrest and always within 48 hours of arrest. ADAM is a revision to the Drug Use Forecasting program (DUF), which was established in 1987 by the National Institute of Justice (NIJ) to test booked arrestees for illicit drug use. Although the sampling strategies between ADAM and DUF are different, Table 4 demonstrates the impact of methamphetamine on the criminal justice system by showing the proportion of arrestees who tested positive for methamphetamine in 1994 and 2002 in different cities (Feucht & Kyle, 1996; NIJ, 2002).

Table 4
Percent of Male DUF Arrestees Testing Positive for Methamphetamine in 1994 and Percent of Male ADAM Arrestees Testing Positive for Methamphetamine in 2002

	1994	2002
Atlanta, GA	0.1	2.1
Birmingham, AL	0.1	0.6
Dallas, TX	3.5	4.0
Denver, CO	2.1	3.8
Honolulu, HI	NR	44.8
New York, NY	0.3	0.5
Omaha, NE	3.3	21.0
Philadelphia, PA	0.1	0.0
Phoenix, AZ	25.4	31.2
Portland, OR	16.3	21.9
San Diego, CA	41.0	31.7
San Jose, CA	19.9	29.9
Washington, DC	0.1	0.0

National Forensic Laboratory Identification System

The National Forensic Laboratory Information System (NFLIS), which is sponsored by the DEA, collects results from drug analyses conducted by local and state forensic laboratories. It reflects drug evidence seized by law enforcement agencies and analyzed by forensic laboratories. NFLIS started in 1997, and the number of laboratories participating in the system in 2002 has grown to 35 state lab systems and 55 local or municipal laboratories for a total of 187 individual laboratories.

Table 5 shows the proportion of identified substances that were methamphetamine, amphetamine, and pseudoephedrine or ephedrine (the latter two are used to produce methamphetamine) (Strom et al., 2003). This data is important because it shows that when these stimulants were actually tested, most were methamphetamine, not amphetamines.

Nationally, 11.8% of all drug exhibits tested in 2002 were identified as methamphetamine. In the Western region, 38.2% of the items were methamphetamine,

as compared to 7.2% in the Midwest, 6.0% in the South, and 0.2% in the Northeast. The highest percentage of methamphetamine was reported in Seattle (37%) and San Diego (23%). In addition, of the drug combinations tested in 2002, methamphetamine was present in about 15% of the combinations. Cocaine and cannabis were the most common substances reported in combination with methamphetamine, followed by amphetamines. Pseudoephedrine, dimethylsulfone, phosphorus, and ephedrine were found in other samples, and they reflect the impurities resulting from clandestine manufacturing processes (Strom et al., 2003).

Table 5
Percent of 25 Most Frequently Identified Substances by Labs Participating in the National Forensic Laboratory System

	1997	1998	1999	2000	2001	2002
Methamphetamine	3.6	2.0	10.3	10.9	14.8	13.0
Amphetamine	0.2	0.6	0.5	0.3	0.3	*
Pseudoephedrine	*	*	0.3	0.4	0.6	0.5
Ephedrine	*	*	0.1	0.1	0.2	*

* Substance not in the top 25

Community Epidemiology Work Group

The National Institute on Drug Abuse's (NIDA) Community Epidemiology Work Group (CEWG) is a network of 21 epidemiologists and researchers in the United States who meet semiannually to review current and emerging substance abuse trends. During the June 2003 meeting, they reported on the methamphetamine situation in various locations throughout the United States. In Hawaii, use of ice is increasing again. There were more deaths due to methamphetamine than due to alcohol in 2002. The suicide rate involving methamphetamine is high, and treatment admissions in Hawaii are increasing.

In San Diego, methamphetamine treatment admissions are increasing, while overdose deaths and seizures have decreased. In 1988, there were 584 methamphetamine admissions as compared to 7,027 in 2002. In the past, patients were evenly divided between male and female, but with the increased use of drug courts and Proposition 36 referrals (voluntary referrals from the criminal justice system to treatment), the proportion of male clients has increased. In addition, the proportion of white clients has dropped from over 80% in 1988 to 60% in 2002, with an increase in Hispanic admissions. At the same time, the route of administration has changed from inhaling to smoking methamphetamine.

In Los Angeles, methamphetamine treatment admissions are increasing with more smokers and fewer inhalers or injectors. In San Francisco, emergency room mentions and treatment admissions are increasing, and use is widespread, especially among "Fast Lane" gay and bisexual males. In Seattle, treatment admissions are level, and emergency room admissions are down from earlier years. While the number of laboratories seized is down, there are still many small "Mom and Pop" operations.

In Phoenix, ice is a problem, and the quality is high. In Colorado, indicators of methamphetamine use, such as poison control center calls, overdose deaths, and hospital discharges, are up; it is a major problem in the rural areas. The proportions of Hispanic treatment admissions and admissions over age 35 are increasing, and crack users are reported to be switching to methamphetamine.

In Texas, treatment admissions have increased to 8% of all admissions; overdose deaths are up; and the proportion of NFLIS exhibits that are methamphetamine is increasing. Methamphetamine and amphetamines are greater problems in the northern half of the state, as documented by the NFLIS data, and methamphetamine is both imported from Mexico and also cooked in small laboratories in the more rural areas of the state.

In Minneapolis and St. Paul, methamphetamine use is increasing, especially in the rural areas. In Missouri, methamphetamine is the primary illicit drug of abuse in rural areas, and treatment admissions are increasing, although methamphetamine admissions in St. Louis lag behind those elsewhere in the state. In Michigan, laboratory seizures are increasing. Smoking is the primary route of administration of methamphetamine, and treatment admissions are increasing for both methamphetamine and prescription amphetamines. In Chicago, use has remained low but is more prevalent in the downstate rural counties. Methamphetamine called "Tweak," which has a crystal-like appearance, is seen in Chicago clubs and is more commonly smoked than injected.

In Atlanta, methamphetamine use is up, with more local laboratories seized. Mexican methamphetamine is also available. Some ecstasy users are also using methamphetamine with ecstasy because the ecstasy by itself does not produce the desired "high." Ice and "shards" are the choice types of methamphetamine. In Miami, "Tina" is popular in the gay bathhouse scene, and methamphetamine abuse is described as an emerging drug epidemic in the "outbreak" stage in the region.

In New York City, methamphetamine use is primarily among "a few" gay males, and some crystal meth is being sold. Recent seizures of several laboratories in rural areas in New York indicate the continuing spread of methamphetamine eastward, and in Boston, methamphetamine use is emerging in the club drug scene.

Conclusion

The profile of the methamphetamine user is somewhat difficult to draw because some of the datasets discussed in this article may not clearly or correctly differentiate between methamphetamine and amphetamine, and the users of these drugs may be quite different. The NFLIS laboratory tests shed light on this problem, since they show that methamphetamine, not amphetamine, is the substance most likely to be seen in seizures, and NFLIS confirms the data seen in other sources that methamphetamine is most prevalent in the West.

The National Household Survey shows that use of all stimulants increased significantly between 2000 and 2001, while use of methamphetamine did not significantly increase, except for use by those ages 18-25. This finding was also evident in the DAWN emergency department data, in which the number of mentions of amphetamines increased, and mentions of methamphetamine decreased.

The National Household Survey reported that new users of methamphetamine are now younger, with an average age of first use at 18.4 years, but the DAWN ED and

TEDS treatment data showed an aging population of users. This could mean a new cohort of young persons is beginning to use methamphetamine, while those who began using a number of years ago are now encountering adverse consequences from prolonged use and are seeking treatment because they are dependent.

The DAWN ED data also showed an increase in the proportion of patients who were female, and the Texas treatment data also showed that slightly more females than males enter treatment for problems with stimulants; however, CEWG correspondents also reported the continuing use of methamphetamine by young gay males who may be involved in risky sexual activities. Consistently through all of these datasets, the vast majority of clients are white, although the proportions of Hispanics and Asians, Native Hawaiians, and other Pacific Islanders are increasing.

Route of administration appears to be related to the severity of a user's condition. Those who take stimulants orally are probably abusers of pharmaceutical amphetamines. Of those who use methamphetamine, inhalers are somewhat less impaired than smokers, and both of these groups are less impaired than injectors, who have been using longer and may have transitioned to needles as their habits increased.

The DAWN, TEDS, and ADAM datasets, which report on metropolitan or statewide areas, all document the spread of stimulants from west to east, and the CEWG reports corroborate the information from law enforcement sources of the problem with methamphetamine use in rural areas.

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Methamphetamine: Using Epidemiology to Facilitate Collaboration Among Law Enforcement and Treatment Professionals

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Introduction

The roles that we play in society often define our view of the methamphetamine problem. For example, *social service workers* see the children who are victims of prenatal or postnatal exposure to any one of many volatile reagents used in manufacturing methamphetamine. *Healthcare workers* appreciate the threat of burns from fires or explosions that may occur during methamphetamine manufacture, and they recognize the related threat of poisoning and overdose. They also know that chronic methamphetamine users eventually encounter health-related problems and that those who administer the drug through injection face an increased risk of contracting HIV or Hepatitis C infection. Moreover, methamphetamine use has been associated with risky sexual behavior, making users susceptible to a variety of sexually transmitted diseases, including HIV infection. *Public health officials* worry about clandestine methamphetamine laboratory sites that produce toxic byproducts, resulting in clean-up activities that require large amounts of public money. In the Midwest, groundwater contamination is a real hazard, due to the porous, karstic topography.

Law enforcement and substance abuse treatment professionals are involved with methamphetamine abusers more frequently than are many other professionals, and thus they hold quite different views of the problem. *Law enforcement professionals* focus on those who illicitly use, sell, or manufacture methamphetamine. These and other first-responding professionals face danger when they investigate methamphetamine-related activities. They can encounter fires, explosions, contamination, armed suspects, and booby-trapped labs. *Substance abuse treatment professionals* believe that getting methamphetamine abusers into treatment should be the most significant strategy in every state's methamphetamine game plan. The complexity of the methamphetamine problem frustrates many professionals. A large and diverse audience eagerly awaits solid information upon which to develop public policies addressing methamphetamine abuse.

Because law enforcement and treatment professionals play key roles in the methamphetamine story, it is vital that they identify areas of mutual interest and collaborate on solutions that require their cooperation; however, it has been difficult at times to establish a dialogue between these groups due to a number of circumstances. First, law enforcement and addictions treatment professionals represent two different cultures. That is, the expectations they have about behaviors and beliefs are different

for each of them. Furthermore, each profession has its own implicit model of behavior change and assumptions about the causes of substance abuse. Members of one group will also naturally make attributions about the motivations and behaviors of members of the other group. Often these attributions are in error, sometimes leading to inappropriate expectations about others. In addition, many jurisdictions have a history of turf battles or other problems between these groups that have never been resolved. Finally, especially in strained economic times, the two groups may shy away from collaboration if both seek to draw from the same well of scarce resources.

Given these potential barriers to collaboration, how can these most important players join forces to solve local methamphetamine problems? The goals for this article are as follows:

- to provide a brief background on the methamphetamine problem
- to identify the need for integrative solutions to the problem
- to describe types of epidemiologic data that could be collected
- to suggest a process for local implementation
- to identify potential outcomes of this process

Background

Methamphetamine has a long history of use around the world. After World War II, physicians often prescribed the drug to treat obesity and depression. Its illicit use was frequently associated with motorcycle gangs in California during the 1970s and 1980s. Over the past decade, methamphetamine's illicit use has radiated outward from California in a northeasterly direction. Having reached the Midwest, the epidemic is now moving across the Mississippi towards our Eastern states. Miller (1997), Glittenberg and Anderson (1999), and Anglin, Burke, Perrochet, Stamper, and Dawud-Noursi (2000) all provide succinct histories of the use of methamphetamine.

Rawson, Simon, and Ling (2002) questioned why it has taken so long for the methamphetamine problem to be recognized by federal policymakers, given the long history of tracking its use in the western part of the country. Rawson, Anglin, and Ling (2002) identified implications for U.S. policymakers in addressing the methamphetamine problem, and they argued that the problem will be with us for some time and will likely spread even further. The authors made their argument compelling by citing . . .

- the large number of persons worldwide who use amphetamines.
- the ease with which methamphetamine is produced.
- the relatively inexpensive cost of obtaining the drug.
- the widespread knowledge of manufacturing recipes.
- the expansion of methamphetamine use from Caucasians to Hispanics and Asians.
- the drug's usefulness for weight loss or for providing energy.

They further noted that the criminal justice system could play a more important role in linking methamphetamine abusers with treatment services.

A number of publications have described the proceedings of methamphetamine task forces and regional meetings. One of the earliest described an integrated approach to the problem, calling for prevention, intervention, treatment, and interdiction

(San Diego County Methamphetamine Strike Force, 1996). The Office of National Drug Control Policy published proceedings from a western regional conference (1997a) and a national conference on methamphetamine (1997b) that appeared to have an equal number of work groups representing both interdiction as well as demand reduction efforts. The Substance Abuse and Mental Health Services Administration (1997) published proceedings of a national methamphetamine meeting that represented prevention, treatment, and health concerns with little attention, however, to law enforcement issues. The National Evaluation Data and Technical Assistance Center (1998) produced a regional methamphetamine report that provided useful information on background, epidemiology, treatment, and treatment effectiveness. Unfortunately, this model report focused only on California. The Methamphetamine Interagency Task Force (2000) published a final report that produced a number of "balanced" recommendations addressing prevention, treatment, and law enforcement concerns. Wermuth (2000) noted that policy response to the burgeoning methamphetamine problem has been a "war against drugs" that calls for increased criminal penalties. She recommended a public health response that includes prevention, harm-reduction strategies, and treatment. Obviously, law enforcement and treatment professionals are the key players in any methamphetamine response and must collaborate in their efforts.

Epidemiology

Epidemiologists study the distribution of diseases and attempt to determine their causes. The science of epidemiology is complex and requires many years of study in order to understand the contents and methods that comprise the discipline; however, at the core of epidemiology are observations. Epidemiology relies on the observations of many different individuals. Trained epidemiologists design studies, collect data, analyze data, and develop reports. The knowledge base upon which they rely, however, is typically constructed from the observations of professionals who have little or no training in formal epidemiology. Epidemiology is both an art and a science, with varying degrees of rigor. Surprisingly, many of the statistics upon which law enforcement and treatment professionals depend become significant pieces of the drug-problem mosaic constructed by epidemiologists.

Perhaps the best picture of the epidemiology of methamphetamine abuse is seen in the 27 years of the proceedings of the *Community Epidemiology Work Group* (CEWG), sponsored by the National Institute on Drug Abuse (NIDA, 2001). This group of drug epidemiologists tracks drug trends using a number of indicators. They have predicted every major drug epidemic over the past 27 years. The group has documented the movement of methamphetamine abuse outward from the Southwest to more northern and eastern states. Some participants in the work group have scant formal training in epidemiology. They rely on data provided by members of their communities to develop overviews of drug use and to identify emerging drug issues.

Blueprints for Drug Epidemiology

Kozel, Robertson, and Falkowski (2002) provided an overview of the CEWG approach to the surveillance and monitoring of drug patterns. They described the mission of the work group as providing drug use and abuse surveillance on a community level. Methods used in this approach are typically secondary analyses of health and other social indicators. Major outputs are descriptions of drug use

and abuse patterns, of emerging use and abuse trends, and of subpopulations that might be involved with target drugs.

The mechanics of developing a community-level surveillance network are more fully described in *Assessing Drug Abuse Within and Across Communities* (NIDA, 1998).

This monograph, available at no cost from NIDA's website (select "publications" and search title at http://www.drugabuse.gov), is a readable "how-to" guide that answers basic questions about the process and content of local surveillance-and-monitoring meetings. It describes the basic types of data available and provides useful information about how to begin the surveillance-and-monitoring process at the local community level.

The NIDA model is not the only model available. The World Health Organization has developed its *Guide to Drug Abuse Epidemiology* (WHO, 2000), which provides more in-depth information on defining the problem, using existing information sources, selecting qualitative and quantitative methods, and reporting results. The United Nations (1999) developed guidelines for conducting rapid situation assessments (RSAs). These assessments rely on using qualitative and quantitative research that employs a number of data sources. The desired outcome of this process is to understand and describe the current issue, what resources exist, and the best strategy for addressing the problem. Rapid situation assessments have been used successfully by researchers to describe drug problems at national levels, but they may also prove useful at local levels in the United States.

Law enforcement professionals customarily develop drug threat assessments. Such assessments typically include information that describes the availability, demand, production, transportation, distribution, and violence associated with illicit drug use. Such assessments may emphasize data collected from arrests and undercover surveillance, but are nevertheless vital components for drug epidemiologists. Caulkins (2000) provided an excellent overview of measures of drug-related criminal justice data.

Key Data Elements

There is a pool of key data elements from which to choose as the foundation of a surveillance-and-monitoring program. Work performed within defined, geopolitical areas is often more straightforward because of data availability. For example, county-level reporting is easier than subcounty reporting because county-level information exists in health, law enforcement, and treatment agency databases. Key data elements are described more fully in the NIDA (1998), WHO (2000), and Caulkins (2000) documents.

The Treatment Episode Data Set (TEDS) is a collection of national data describing the demographics and substance abuse characteristics of persons entering publicly funded treatment programs. The data is available through the Substance Abuse and Mental Health Data Archive (SAMHDA) and can be analyzed easily by using the archive's online Data Analysis System (DAS). Data is retrieved by Federal Information Processing Standards (FIPS) codes, providing treatment admission data for all counties in the country. Treatment data would include variables such as client demographics, route of administration, secondary and tertiary drugs of abuse, prior treatment history, and source of referral, among others.

Key data elements from law enforcement would include demographics and substance abuse characteristics of persons arrested for methamphetamine-related offenses, cost and purity of seized drugs, data from the Arrestee Drug Abuse Monitoring (ADAM) Program, drug court cases, and probation and parole statistics, among others. One important indicator of the eastward movement of methamphetamine has been clandestine laboratory seizures. This information is available through the El Paso Intelligence Center's (EPIC) National Clandestine Laboratory Seizure System (NCLSS).

A number of other sources of data may serve to supplement basic treatment and law enforcement indicators. Major drug use studies such as the National Household Survey, the Monitoring the Future survey, and statewide school surveys provide contextual information on the number of persons who use alcohol, tobacco, and other drugs. The Drug Abuse Warning Network (DAWN) is an excellent data source for drug-involved emergency department episodes and drug-involved deaths. Local ethnographic studies, surveys, focus groups, and other data-gathering methods can complement larger studies. Goode (2003), in this issue, provides an excellent overview of the national methamphetamine problem using many of the major data sources.

Discussion

We know that methamphetamine is a growing problem that requires comprehensive, integrated responses. Because both law enforcement and treatment professionals play prominent roles in meeting the methamphetamine challenge, these groups should work together to lead the way toward solutions. Several task forces and policy documents have called for integrated efforts and collaboration among key organizations to address the methamphetamine problem. Such efforts are far easier to suggest than to implement, however, due to the natural conflicts that occur between groups with differing roles as well as to the perceived conflicts that may arise from history, turf battles, cultural differences, and competition over scarce resources. Starting a dialogue between these two groups, while simultaneously preventing blame, defensiveness, and unrealistic expectations, is difficult.

Identifying, collecting, sharing, and using epidemiologic data can be the beginning of a meaningful collaboration between these groups and, eventually, with other groups of professionals involved with the methamphetamine crisis. Exchanging data and discussing its significance and utility for shaping policy and for developing programs may have multiple benefits. One of the biggest benefits is the *cultural exchange* that will occur between the two professions. Each group will come to appreciate the methamphetamine challenge from the other group's perspective. This cultural exchange may eventually include other groups such as prevention professionals, education personnel, and healthcare professionals, among others, leading to a greater understanding of the problem by all participants.

Many from the law enforcement and treatment communities have already exchanged drug-related data. Some have done so formally, using the language and methods of epidemiology. Others have been less conventional as epidemiologists but no less effective in exchanging data. For those interested in formal approaches, the NIDA (1998) monograph is the best place to start.

At times, a simple, initial discussion of the mission, goals, and objectives of participating agencies is sufficient to begin a dialogue. A discussion among participants about topics such as rehabilitation and public safety would no doubt show that there are more similarities than there are differences between the two professions. Treatment professionals could offer a brief overview of drug treatment. Such an overview might include a description of where treatment facilities are located, how one enters treatment, what the individual experiences during treatment, what support services are available after treatment, and what measures demonstrate successful treatment. Law enforcement professionals could provide an overview of the legal process. This overview might include a description of how arrest warrants are obtained, how arrests occur, what happens in court, what happens to the person in jail or prison, when and how the prisoner becomes ready for release, what happens during probation and parole processes, and how law enforcement and judicial professionals follow up on released individuals.

The next phase in the collaborative process involves the actual exchange and discussion of data. The importance of the personal factor here cannot be overemphasized. The success of such a program requires at least one person who is committed to its success. Ideally, this person (or, preferably, persons) would identify potential participants, organize the initial meeting, lead the discussion concerning potential data sources, facilitate meetings, develop brief summary reports, and arrange for follow-up activities. Meetings might be small, informal, and held semiannually; or they might be large, formal (with precise agendas and structured presentations), and held frequently. Some meetings may eventually become part of a State Epidemiology Work Group (SEWG), such as those currently held in several states.

Peter Reuter (1999) correctly cautioned users of drug statistics that every measure has strengths and weaknesses and that each assesses different aspects of a drug problem. Clearly, there is a need to use a variety of indicators in order to paint a clear picture of a drug problem and a concurrent need to remain sensitive to the strengths, limitations, and purposes of each measure.

Potential Outcomes of the Process

The process of sharing epidemiologic data on methamphetamine may result in several beneficial outcomes:

- Participants could develop a greater awareness of diverse professional cultures.
- Participants could broaden their perspectives on the methamphetamine problem as a whole.
- Participants could discover useful data for preparing reports, budget requests, and grant proposals.
- Participating organizations could move toward better strategic planning with initiatives that require collaboration such as codevelopment of legislative bills, collaboration on grant proposals, cofunding of programs, and exchange of employee or cultural information.
- The data-sharing process could ease the movement of methamphetamine abusers into rehabilitative environments and broaden their access to treatment resources. Access to treatment could be increased via drug court and probation and parole referrals.

Epilogue

Methamphetamine use is a growing problem that requires collaboration among a number of public service sectors. Because law enforcement and treatment professionals are key players, it is important that they work in a collaborative fashion. The identification, collection, sharing, and use of epidemiologic data can be a key step in fostering collaborative relationships among these professionals and may result in more data-driven, methamphetamine policy development and program planning.

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Crystal Meth, Gay Men, and Circuit Parties

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Over the three decades since the advent of the gay civil rights movement, gay male subcultures in large cities have frequently maintained—as an integral and celebrated element of "gay ghetto" life—an intimate connection between recreational drug use, all-night dance parties, and sexual freedom (Browning, 1993; Kramer, 1978; Rotello, 1997; Shilts, 1987). Writing about 1970s New York, Levine (1998) called these cultural elements the "four Ds: disco, drugs, 'dish' and 'dick'." Although the onslaught of the AIDS epidemic in the 1980s forced a broad-based retrenchment in the more libertine aspects of these subcultures, a number of social forces in the 1990s brought the drug/sex/dance scenes back with vigor. The most visible facet of this renewed revelry has been the circuit party, which, paradoxically, emerged from AIDS fundraising efforts initiated by the gay community in the early days of the epidemic (Kurtz, 1999; Signorile, 1997).

As these one-night fundraising affairs stretched into week-long dance events attracting many thousands of men, recreational drug use became more prevalent. Methylenedioxy-methamphetamine (MDMA or ecstasy) was initially the primary drug of choice for these parties, followed by the additions of other "designer" or "club" drugs"—ketamine (Special K), gammahydroxybutyrate (GHB), and crystal methamphetamine (crystal or tina) (Kurtz, 1999; Signorile, 1997). Crystal use spread rapidly on the West Coast among gay men and gradually moved east toward the end of the 1990s (Brown, 2002; Heredia, 2003; Reback & Ditman, 1997).

In response to crystal use, the party scene changed again to include the development of harder-edged music and an increasing focus on casual sex encounters rather than dance. Crystal has now become embedded in many urban gay communities and is strongly associated with sexual behaviors that put men at risk for HIV infection (Frosch et al., 1996; Molitor, Truax, Ruiz, & Sun, 1998; Reback & Ditman, 1997; Semple, Patterson, & Grant, 2002). This article reports the results of a survey of drug use and sexual HIV-risk behaviors that was conducted at a recent circuit party in Miami, Florida, focusing on the behavioral characteristics of crystal users.

Circuit Parties

The form and style of the modern circuit party have roots in both the AIDS epidemic and the emergence of rave culture in the late 1980s. The lack of government attention to the growing AIDS crisis in the early 1980s left gay men, by far the most common victims of the disease in the early years, to fend for themselves in helping those already infected and attracting resources to fighting the disease. Gay Men's Health Crisis (GMHC) in New York City sponsored, what some consider to be the very first circuit party, a fundraising event on Fire Island in 1982 (Silcott, 1999). The Morning Party (thus named to acknowledge both loss and hope) became an annual, ever larger dance event that combined fundraising for AIDS with the celebration of life. Miami followed quickly in New York's path, establishing the White Party in 1985. Held at an elegant historic mansion on Biscayne Bay over Thanksgiving weekend,

the White Party became an instant international success. Similar AIDS fundraising affairs soon cropped up in other major cities and gradually spread to smaller municipalities, such as Austin, Texas, and Palm Springs, California. Traveling the "circuit" of parties to support the cause became an important social activity for the mostly white, moneyed gay men who could afford it.

As the circuit phenomenon developed, gay male fashion was also changing. Spurred by a desire to create as much distance as possible from the gaunt appearance of AIDS victims, gay men raised the gym-honed body to icon status. Muscles—often aided by the use of anabolic steroids—became a fashion statement; the shirtless, shaven male chest and "six-pack" abs symbolized circuit party style, while also adding a strong sexual component to the celebrations that defied the power of AIDS to define gay life (Kurtz, 1999; Signorile, 1997). As AIDS treatment and prevention technologies [e.g., zidovudine (AZT, the first pharmaceutical treatment for HIV infection), HIV antibody tests, and the "condom code"] emerged in the late 1980s, hope for an end to the epidemic combined with the reinvigoration of gay party life to make the devastation of AIDS less visible and the reinstitutionalization of sexual adventurism in the culture possible (Signorile, 1997).

Drawing on rave cultures that first developed in England and other parts of Europe, circuit parties increasingly included drug use on a broad scale (Kurtz, 1999; Lewis & Ross, 1995; Signorile, 1997). As a source of boundless energy and loving, happy feelings, ecstasy had a particular affinity for gay dance parties that raised money for AIDS. Drug use fueled the extension of the parties into all-night affairs. As men began to travel long distances to attend the events, the parties evolved into extended weekend, and eventually week-long, celebrations. Although most circuit parties across the country still include a signature AIDS fundraising affair, promoters have expanded the concept to include many other events. Miami's Winter Party, begun in 1993 as an afternoon dance party on the beach to raise money for a local gay and lesbian foundation, for example, has become Winter Party Week. In March 2003, the event included 12 "officially-sanctioned" dance parties (each about five to nine hours long) that filled both days and nights.

Bars and clubs in the community offer many peripheral "nonofficial" parties as well. Every event features a dance party with one or more nationally known DJs spinning mostly electronic music. Dance events generally cost $60-$125 per person, with passes for the entire week usually running about $350-$600, depending on VIP entry status. Municipal governments and mainstream hoteliers have come to provide major support for these events. Corporate sponsors for the 2003 Winter Party included Bacardi, Perrier, Southwest Airlines, and Budweiser. *Circuit Noize*, a national magazine dedicated to articles and advertisements related to circuit events, listed 11 such parties for the month of May 2003, in cities ranging from Chicago and New York to Cancun, Mexico and Montreal, Canada. The parties are primarily defined by their size (5,000 to 25,000 people are the usual attendance figures), their hours (it is generally possible to stay in party mode 24 hours a day), and the recreational drug use that takes place there.

As drug use increased, the party scene got messier. Ambulances were parked outside of party venues to administer help to the fallen. Bouncers conducted pat down searches for drugs at the entrances. (At least in Miami, the general practice has been to confiscate drugs found on patrons and to eject those who overdose but never to prosecute). More recently, deaths from drug overdoses caused some charitable organizations, beginning with New York's Gay Men's Health Crisis in 1999, to back away from their association with the parties (GMHC, 1999). In an article weighing the

community-affirming benefits of circuit parties against the widespread drug abuse that accompanies them, columnist Alan Brown (1998) wrote in *Circuit Noize* . . .

> The primary shift has been from an underground ritual of music and dance to a consumer-based marketing phenomenon around which a sub-culture has formed. As the party experience got packaged into a publicly-traded commodity, so too did party drugs, leading to increased consumption in a range of venues extending well beyond the party circuit.

Indeed, the circuit party subculture—from the music to the muscles—gradually took prominence in local nightclub scenes across the country as well. As the 1990s wore on, there was an explosion in the regular use of "club drugs," especially ecstasy, GHB, ketamine, and crystal, among urban gay men (Kurtz, 1999; Lewis & Ross, 1995; Li, Stokes, & Woeckener, 1998; Mattison, Ross, Wolfson, & Franklin, 2001). Gay dance clubs, throwing "weekly circuit parties," extended their hours to the limits of municipal tolerance. (For a time, Miami Beach gave permits for clubs to stay open as late as noon). In entertainment-oriented cities like New York and Miami, after-hours clubs sprang up (*sans* alcohol, but no one cared), opening at 5:00AM and closing in the late afternoon for those who were not yet ready to go home. Thus, the circuit style became an integral part of everyday "ghetto" life.

Drug Use Among Gay Men

Numerous studies of gay men have shown prevalent alcohol and drug use (Stall et al., 2001; Stall & Purcell, 2000), with polydrug use also common (Greenwood et al., 2001; Stall & Wiley, 1988). The mainstreaming of new designer drugs only added to the list of possible mind-altering substances that could be sequenced and/or mixed. Miami's growth during the 1990s as an adult entertainment capital and a key resort destination for gay men coincided with this rapid rise in the popularity of club drugs (Albin, 1995; Kurtz, 1999). The South Beach Health Survey (SBHS), a 1996 population-based study of the drug use and sexual behaviors of gay men living on South Beach—the southern end of Miami Beach, Florida (Webster, Darrow, Buckley, & Kurtz, 1998)—found that 13% of the respondents used drugs other than marijuana and inhalants at least weekly, more than double the rate found in San Francisco in the late 1980s (Stall & Wiley, 1988); overall, 73% used illicit drugs, and 93% used drugs and/or alcohol in the prior year.

Researchers have also found strong associations between gay male sexual HIV-risk behaviors and alcohol and drug use (Paul, Stall, Crosby, Barrett, & Midanik, 1994; Purcell, Parsons, Houkitis, Mizuno, & Woods, 2001; Siegel, Palamara, Mesagno, Chen, & Christ, 1989). Twenty-four percent of the men in the SBHS reported having been high on drugs or alcohol during anal sex at least half of the time (Webster et al., 1998). Some studies designed to investigate this problem more closely have found only certain substances to be associated with sexual risk-taking: alcohol (Perry et al., 1994); ecstasy (Klitzman, Pope, Jr., & Hudson, 2000); nitrite inhalants (Darrow et al., 1998; Ekstrand, Stall, Paul, Osmond, & Coates, 1999; Paul, Stall, Crosby, Barrett, & Midanik, 1994); methamphetamine (Molitor et al., 1998; Semple et al., 2002), and cocaine (Chesney, Barett, & Stall, 1998; McNall & Remafedi, 1999). One reason for these divergent findings may be that different drugs find popularity in gay subcultures—and specifically popularity for use during sex—at a rapidly changing pace. Neither GHB nor crystal, for example, registered as drugs of abuse among gay

men in the 1996 SBHS (Webster et al., 1998); data from the present study discussed below show these to be among the most common drugs used by gay men in 2003.

Although the specific mechanisms linking substance use and sexual risk behaviors among gay men are not well understood (Chesney et al., 1998; Clatts, Welle, & Goldsamt, 2001; Gold, Skinner, & Ross, 1994; Leigh & Stall, 1993; Stall & Purcell, 2000), it is clear that the two sets of behaviors are correlated and increasing among gay men. Although the onslaught of the AIDS epidemic in the early 1980s forced a pause in the sexual freedom that was a hallmark of urban gay cultures in the prior decade, the restraints on sex that emerged from that crisis—reducing numbers of partners, refraining from anal sex, and normalizing condom use (Ekstrand & Coates, 1990; Joseph, Adib, Koopman, & Ostow, 1990; Kippax, Crawford, Davis, Rodden, & Dowsett, 1993; Kalichman, Heckman, & Kelly, 1996; Siegel, Bauman, Christ, & Krown, 1988)—gradually began to unravel. In the late 1990s, researchers in many cities began reporting increasing rates of unprotected anal intercourse (UAI) between men of unknown HIV status (Catania et al., 2001; Ekstrand et at., 1999; Katz et al., 2002; Ostrow, McKirnan, Klein, & DiFranceisco, 1999; Valleroy et al., 2000).

If the increase in already heavy drug use among gay men can at least be partly traced to the circuit party phenomenon, the increase in sexual risk behaviors, specifically UAI, appears to be partially rooted in the development of pharmaceutical highly-active antiretroviral therapies (HAART) for the treatment of HIV disease. The increasing longevity and good health of HIV-positive men, and continuing announcements of additional medicines on the market for treatment, have resulted in a rather widespread decline in the perception of the seriousness of the disease (Elford, Graham, Maguire, & Shurr, 2000; Ostrow et al., 2002; Vanable, Ostrow, McKirnan, Taywaditep, & Hope, 2000). These changing attitudes, increasing distance from AIDS-related deaths, the maturation of circuit party culture, exhaustion with safe sex messages, and the rise of Internet chat rooms as places to make sexual connections coalesced to set the stage for the resexualization of the subculture. Crystal meth played a major role in fueling that shift.

Crystal Meth and Gay Men

Although, as noted earlier, a number of different drugs have been found to have associations with sexual risk-taking by gay men, there is ample evidence that crystal has a different connection to sexual behavior than other drugs and that it plays an important part in the observed rapid increases in UAI and sexually transmitted infections among this group (Frosch et al., 1996; Molitor et al., 1998; Reback & Ditman, 1997; Semple et al., 2002; Signorile, 1997). Increasing levels of crystal abuse by gay men were noted on the West Coast as early as the late 1980s (Reback & Ditman, 1997); the problem emerged in eastern cities only in the late 1990s (Brown, 2002; Heredia, 2003). Crystal initially served as merely the newest club drug—after ketamine and GHB—to take the dance club scene another level higher. Unlike ecstasy—which is often described as a "love drug" but not a "hard sex drug" (Beck & Rosenbaum, 1994; Cohen, 1998; Ireland et al., 1999; Reback & Ditman, 1997)—crystal is particularly synergistic with sex. Crystal has been found, more than other drugs, to be especially sexually arousing and disinhibitory (Ireland et al., 1999; Paul, Stall, & Davis, 1993; Reback & Ditman, 1997; Semple et al., 2002; Zule & Desmond, 1999).

The most recent settings for crystal use among gay men are private home- and hotel-based sex parties organized using Internet websites established specifically for that

purpose (Benotsch, Kalichman, & Cage, 2002). These websites enable the distribution of photographs and profiles of interested men, making clubs unnecessary as meeting places. Although other drugs are commonly used in these settings—especially GHB, ecstasy and Viagra—crystal is the "core" drug at sex parties just as ecstasy was for the dance scene. New HIV-related behavioral terminology has accompanied this new sexual subculture, including "barebacking" (the intentional engagement in unprotected anal intercourse between men of unknown serostatus); "bug chasing" (bareback sex solicited by HIV-negative men from HIV-positive men); and "PNP" (party and play, or the combining of drugs—particularly crystal and GHB—with casual sex encounters) (Goodroad, Kirksey, & Butensky, 2000; Mansergh et al., 2002; Suarez & Miller, 2001). These new terms signified the rejection of sexual restraint by a significant cross-section of gay men. The survey used in this study was designed to rapidly assess the extent of these behaviors among men who attended the Winter Party in Miami.

Methods

Site

Miami-Dade County consistently reports in the top three Metropolitan Statistical Areas (MSAs) nationwide in numbers of HIV and AIDS cases (CDCP, 2002; Miami-Dade County, 2003). As a major gateway for international tourism and trade as well as a popular adult-oriented entertainment destination in its own right, metropolitan Miami lies amidst a constant stream of vacationers, transients, temporary residents, part-time residents, immigrants, and political and economic refugees from across the globe. Men of widely divergent sexual cultures and HIV prevention knowledges share the space of a highly sexualized and sexually commodified geography (Albin, 1995; Kurtz, 1999).

Miami is the site of two world-renowned circuit parties: the White Party, which is held over Thanksgiving weekend to support the largest AIDS service organization in the county, and the Winter Party, which is held in early March. Survey data for this study was collected at the Winter Party in March 2003. Described in some detail earlier, the Winter Party is held at the height of Miami's tourist season and attracts more than 5,000 men from around the world. Sponsored by major corporations as well as by the greater Miami Convention and Visitors Bureau, it is comprised of a week of dance and after-hours parties, with the signature event occurring on "14th Street Beach" on Sunday afternoon.

Winter 2003 Men's Sexual Health Survey

To administer the survey, researchers gathered in the registration area of the host hotel on South Beach. Upon entering the registration area, men were asked to complete a brief, anonymous, self-administered questionnaire that included questions about demographics, drug use, sexual risk behaviors, intimate relationship status, HIV serostatus, history of sexually-transmitted infections (STI), and attitudes about condom use and HIV disease. The first page of the survey form explained the purpose and contents of the survey, as well as its anonymous nature. Participants were paid $5 for their time. Research staff estimated the refusal rate at 10-15%.

Focus Groups

This report was also informed by data from four focus groups of gay male residents of Miami-Dade County held between February and April of 2003. Focus groups

included 15 men who responded to an ad targeting gay men who had experience using crystal. The groups included both current users and men recovering from some level of self-described addiction to crystal. Focus group sessions lasted about an hour and were tape-recorded with prior consent. The sessions dealt specifically with crystal use, its availability, its association with sexual behaviors, and the effect of the drug on respondents' lives. Participants were compensated $30 for their participation. Finally, the study was informed by a focus group of health professionals held in May 2002. Although the subject matter for that focus group was the use of club drugs among the general population, a significant amount of the discussion related to crystal use in the gay community.

Measures, Analyses, and Interpretation

Data from the self-administered questionnaire was entered into a database and analyzed with the assistance of standard statistical computer software. Tables were created to examine independent, intervening, and dependent variables of interest. Pearson chi-square and t-tests for statistical significance and associated levels of probability (p) were used to assess differences between crystal users and nonusers.

Except where noted in the tables, information regarding continuous variables, such as age, were collected and reported at the ratio level of analysis. Nominal variables, including race/ethnicity, primary partner relationships, and HIV and STI infection status, were derived from simple "yes/no" or categorical responses on the self-administered questionnaire forms. Sexual behaviors were measured by having the respondent indicate whether, and with how many partners, he had engaged in certain activities during the preceding six months. Drug use was measured by questioning the frequency (e.g., daily, weekly, monthly, less often, never) of use of each of 11 classes of pharmaceutical and street drugs of abuse during the prior six months.

Attitudes toward safe sex and HIV risk were measured using a Likert-type four-item scale: 1=agree strongly, 4=disagree strongly. The tables in this article report those findings and associated levels of probability, using Pearson chi-square tests; for this purpose, and primarily to avoid necessary assumptions about continuous variable distributions, scales were reduced to dichotomies (e.g., agree or disagree).

Findings

Availability of Crystal

As noted above, the sample for this study was one of convenience and not necessarily representative of the Winter Party attendees. Nevertheless, zip code data was compiled to examine whether certain geographic concentrations of crystal use were indicated among this population. One hundred and forty (59.1%) of 237 attendees resided in zip codes representing just eight metropolitan areas in the United States. Table 1 shows the numbers and percentages of those men who used crystal in the prior six months by city of residence. While any generalizations using these data are tenuous, it appears that crystal use is common among this population throughout major cities in the United States, and also quite common among men who attend circuit parties. Only the Chicago data suggests a relatively low level of availability or popularity there; although, this statement is made with an abundance of caution because of the sampling methods used.

Table 1
Crystal Use Among Winter Party Attendees in Miami, Florida, by City of Residence

City	Attendees N	Crystal Users N	Crystal Users %
Atlanta, GA	10	9	90.0
Austin, TX	6	6	100.0
Boston, MA	8	8	100.0
Chicago, IL	18	5	27.8
Los Angeles, CA	14	8	57.1
Miami, FL	49	31	63.3
New York, NY	24	18	75.0
Washington, DC	11	8	72.7
Subtotal	140	93	66.4
All others	97	53	54.6
Total	237	146	61.6

Focus group participants who had moved around the country over the last decade could clearly trace the path of crystal's popularity from the West Coast to the East. According to these men, crystal was easy to find and commonly used for sex by gay men in California and Texas in the early 1990s. By the end of the decade, around 1999, it was emerging as a popular drug in Washington, DC, and New York. Participants reported that the drug had become prevalent in Miami only since about 2001.

Focus group participants reported that crystal is now widely available throughout Miami and neighboring Ft. Lauderdale. Men reported that the drug can easily be purchased in bars (e.g., sometimes one can get a "bump" [snort] for free), on the dance floor in nightclubs, and through a widespread dealer network that is easy to access. Dealers can be found in both wealthy and poor neighborhoods. Home delivery service is common, often employing the services of young teens riding bicycles. Men reported that, for most users, the drug is relatively cheap, costing perhaps $50 for a bag that lasts a weekend. Given the declining quality and increasing price of ecstasy, cost was one of the motivations to use crystal. One respondent estimated that 50% of the gay population in Miami and Ft. Lauderdale are either crystal users or know someone who is having problems because of it.

A local authority on drug trafficking and abuse traced the shift from ecstasy to crystal in another alarming way:

> Methamphetamine has had among the lowest prevalence rates, certainly in the nation, in South Florida over the years. We did a study for NIDA . . . in 1988 on this, and one of the reasons always came back to us, that the cocaine dealers would not allow it. This was cocaine territory and they didn't really want the competition of methamphetamine. Now just go a little north, up to Tampa or Orlando; methamphetamine is there among the white, blue-collar populations, as it is throughout much of the Southeast and Southwest and Midwest. But tina [crystal] has been the real breakthrough in bringing methamphetamine to the community. It's almost as if it's being planned and marketed because just like the gay community taught the straights how to dance and disco in the '70s, and

taught them about the link between dancing and partying and drugging, tina is really, I think, being promoted right now. Because what's going to happen with ecstasy after September 11, it ain't coming in the same levels as it used to be with "Hurricane E" [ecstasy]. And so now there have got to be other methylated amphetamines to replace it . . . methamphetamines. In Asia, where we've seen this epidemic of ecstasy and methamphetamines, the two drugs are now just the same. I think the real future of ecstasy is going to be methamphetamine.

Demographics

Demographic characteristics of the survey sample are displayed in Table 2. The heavy concentration of men in their late 20s to early 40s is not surprising, given the nonstop nature of weeklong circuit party events. Although younger men may have a strong interest in participating, the expenses associated with travel, entrance fees, and party drugs are prohibitive for many of them. Similarly, the overwhelming number of white participants is due in part to economic factors, as well as the origination of circuit parties within largely white, urban, gay subcultures. Although the Winter Party attracts men from across the globe, our sample included a significant number of local men.

The number of men who self-reported HIV infection (13.1%) approximates that found in several studies of urban gay men of this age distribution (Catania et al., 2001; Wolitski, Valdiserri, Denning, & Levine, 2001). It should be noted that this is likely a low estimate, however. In addition to the possibility that some men were unwilling to disclose HIV positive status even on an anonymous survey, other researchers have found that many gay men do not know they are infected (Valleroy et al., 2000). In the South Beach Health Survey, 18.0% of respondents self-reported HIV infection on an anonymous survey. Men in that study also provided oral fluid samples for testing, which showed that 24.9% were actually infected (Darrow et al., 1998).

Table 2
Demographic Characteristics of Winter Party Attendees in Miami, Florida (N=237)

Age	N	%
21-29	37	15.7
30-39	135	57.2
40-49	59	25.0
50 and Over	5	2.1
Median Age = 36		
Ethnicity:		
White/Anglo	175	73.8
Latino	38	16.0
African American	12	5.1
Other	12	5.1
Miami Area Resident	52	21.9
HIV-Infected (self-report)	31	13.1

Polydrug Use

Drug use over the previous six months is shown in Table 3. Almost 90% of respondents reported that they used one or more illicit drugs. Ecstasy was the most frequently cited drug, and "club drugs" in general accounted for all of the most popular psychoactive drugs except marijuana. Attesting to the broad popularity of crystal among this population, over 60% of the sample had used it. Although not a psychoactive drug, Viagra use was measured because of its strong association with crystal use among gay men. Viagra is not included, however, in any aggregated measures of drug use in this report.

Over half (53.6%) of the sample used five or more different illicit drugs in the prior six months, and almost one-third (29.1%) used at least one drug daily or weekly. The most popular drug combination among polydrug users was ecstasy, crystal, and GHB. The most popular drugs used daily or weekly were marijuana (10.6%), crystal (9.3%), and ecstasy (8.9%). Less than 10% of the sample had ever injected any drug. Respondents were not asked about which drugs they had injected, but crystal has a strong association with injection among this population (Clatts & Sotheran, 2000; Ireland et al., 1999; Reback & Ditman, 1997).

Table 3
Drug Use in the Past Six Months by Winter Party Attendees in Miami, Florida (N = 237)

	N	%
Street Drugs		
Marijuana	135	57.0
Cocaine	94	39.7
Opiates	22	9.3
Hallucinogens	34	14.3
Club Drugs		
Crystal Meth	146	61.6
Ecstasy	186	78.5
Ketamine	152	64.1
GHB	116	48.9
Amyl Nitrite	110	46.4
Pharmaceuticals ("to get high")		
Uppers	54	22.8
Downers	63	26.6
Viagra	127	53.6
Any Drug Use	213	89.9
Weekly Drug Use	69	29.1
Five or More Drugs	127	53.6
Ever Injected Any Drug	23	9.7

Polydrug use among crystal users and noncrystal users is compared in Table 4. Clearly, men who use crystal are much more likely than non-users to ingest a wide variety of psychoactive substances, with almost all of them also using ecstasy, almost 80% also using ketamine, and about two-thirds of them also using marijuana, GHB, and Viagra. Crystal users were much more likely to report weekly drug use, often using drugs for sex and being high on alcohol or drugs during anal intercourse half or more of the time. Noncrystal users had relatively low rates of polydrug and weekly drug use, with the "older" club drugs—ecstasy, ketamine, and amyl nitrite—being the most popular in addition to marijuana among them.

Table 4
Crystal Meth and Polydrug Use Among Winter Party Attendees in Miami, Florida (N = 237)

	Crystal Meth Users (N = 146)		Nonusers (N = 91)		*p*
Variable	**N**	**%**	**N**	**%**	
Other Drugs Used					
Marijuana	100	68.5	35	38.5	0.000
Cocaine	75	51.4	19	20.9	0.000
Opiates	18	12.3	4	4.4	0.041
Hallucinogens	32	21.9	2	2.2	0.000
Ecstasy	136	93.2	50	54.9	0.000
Ketamine	116	79.5	36	39.6	0.000
GHB	94	64.4	22	24.2	0.000
Amyl Nitrite	80	54.8	30	33.0	0.001
Uppers	47	32.2	7	7.7	0.000
Downers	56	38.4	7	7.7	0.000
Viagra	96	65.8	31	34.1	0.000
Used Five Drugs or More*	113	77.4	14	15.4	0.000
Weekly Drug Use*	55	37.7	14	15.4	0.000
Use Drugs Often for Sex*	82	56.2	17	18.7	0.000
High for Sex at Least 50% of the Time	55	37.7	16	17.6	0.001

*Includes listed drugs except Viagra.

Pharmaceutical drugs other than Viagra are important aspects of polydrug use among this population as well. Over 38% of crystal users reported using "downers," while less than 8% of noncrystal users did so. A medical doctor discussed the extent to which crystal users mix different drugs to try to maintain the desired high and to ease the effects of coming down from it:

> It's interesting in the HIV population, the AIDS population. Back five years ago, people were sick, before the protease inhibitors. And there were quite a few people on Percocets because they really needed the Percocets. And the

> protease inhibitors came along and, you know, like a phoenix rising from the ashes, everybody did so much better. But they still wanted their Percocets. And I notice now people calling me on a Friday. I go, "Why do you want these Percocets?" "I only need thirty. I only need fifteen." "What do you need them for?" And it's this mixture again. "I'll take a few Percocets, I'll do a little bit of tina, " and, oh, they have to have that Viagra prescription called in, and thank God Medicaid pays for it. And the Xanax. At the end of the weekend, they need their Xanax to go to sleep, and sleep for 48 hours to get it all out of their system. Hopefully they wake up. But [back to] the pain killers, they don't need them and they don't call for it unless it's a party weekend. So they're just dragging other stuff into it, things that they used to take for legitimate purposes.

One ex-crystal user struggling with recovery explained why crystal users tend, more than others, to be users of many other substances as well:

> Crystal took over all the other drugs. I mean, I didn't care if I took two ecstasies or I did [Special] K . . . G [HB] was the only one that subdued the crystal. But it didn't last that long. Crystal, the jealous bitch, she takes over every situation. I mean, it does, it takes over every drug. I don't care how potent the drugs are, crystal makes its presence known.

Many men in the focus groups agreed that as crystal addiction took a stronger foothold, their lives became increasingly isolated and dysfunctional. The choice eventually became the continuation of crystal dependence or giving up every drug completely.

Crystal and Sexual Risk Behaviors

Sexual risk behaviors for crystal users and nonusers are compared in Table 5. Although there were no discernable differences in rates of HIV infection between the two groups, crystal users were almost twice as likely to have been diagnosed with an STI during the previous 12 months. The most common STIs for both groups were herpes (8.0%), gonorrhea (5.5%), and chlamydia (5.1%). Similarly, there was no difference between crystal users and nonusers in self-reported engagement in UAI during the previous six months, but crystal users tended to have more anal sex partners, though this did not reach the .05 level of significance. No difference was detected between users and nonusers on whether they experienced problems when using condoms.

Table 5
Crystal Use and Sexual Behaviors Among Winter Party Attendees in Miami, Florida (N = 237)

Variable	Crystal Meth Users (N = 146) N	%	Nonusers (N = 91) N	%	*p*
HIV-Infected (self-report)	17	11.6	14	15.4	n.s
Diagnosed with STI in Last 12 months	43	29.5	16	17.6	0.040
Engaged in UAI in Last 6 months	84	57.5	58	63.7	n.s.
5+ Anal Sex Partners in Last 6 months	51	34.9	21	23.1	0.054
Reported Problems with Use of Condoms (1)	83	57.6	48	57.1	n.s.

(1) Condoms cause erection problems or take the fun out of sex, or it is difficult to ask a partner to use one.

Discussion

The introduction of crystal meth to the circuit party scene has generated a number of health policy implications. The data collected from this sample of 237 gay men attending Miami's Winter Party in 2003 suggests that the use of crystal meth is widespread and that the users of crystal meth are at considerable risk for numerous health problems. For example, crystal users are more often users of other drugs as well, with significant numbers using marijuana, cocaine, ecstasy, ketamine, GHB, and prescription "uppers" and "downers." As such, they are at increased risk not only for an overdose on any given drug, but also for potentially lethal drug interactions. In addition, crystal users would appear to be at greater risk for HIV and other sexually transmitted infections. For example, they reportedly use drugs more often during their sexual encounters, causing a loss of inhibitions, which might serve to increase their willingness to participate in unprotected sex. There were no statistically significant differences in rates of HIV seropositivity between users and nonusers of crystal meth; however, almost twice the proportion of crystal users reported having been diagnosed with a sexually transmitted infection in the past six months.

Although the presence of crystal meth and other illegal drugs at circuit parties might appear to be a matter for local law enforcement, it would be difficult for most, if not all, police agencies to have a major impact on this growing health problem. There are several reasons for this assertion. First, infiltrating circuit parties for the purpose of seizing illegal drugs would indeed be a daunting task. There are few "straight" police officers who could effectively "pass" as gay men to work undercover at circuit parties. Moreover, it is likely that few, if any, officers known to be gay would be willing to work this kind of detail.

Assuming that undercover work would be feasible and possible, circuit party attendees, even crystal users, carry and use only small amounts of drugs at any given time. As such, having a significant impact on the availability and use of crystal meth at circuit parties would be far too labor intensive to be cost-effective. There are other areas of enforcement in which police resources could be better utilized. Moreover, the crystal meth that finds its way to circuit parties originates outside of the gay community, in the biker and other trafficking subcultures that support themselves through the production and distribution of illicit drugs.

Should significant numbers of arrests for the possession of drugs at circuit parties be achieved, which is unlikely, any successes would be short-lived. Like raves, most circuit parties would begin to move from place to place, shifting to those jurisdictions and precincts where drug enforcement is less intensive or effective.

The problem of crystal meth and other drug use at circuit parties would be most appropriately dealt with through targeted public health education combined with intervention by health services and harm reduction agencies. Harm reduction involves attempts to ameliorate the adverse health, social, and economic consequences associated with the use of mood-altering drugs and/or activities, which increase the risks of HIV transmission (Inciardi & Harrison, 2000). Among the better known harm reduction initiatives are methadone maintenance for heroin users, syringe exchange programs for injection drug users, and condom distribution to commercial sex workers. An important community-policing activity in this regard would be the distribution of condoms and drug education materials by uniformed police volunteers in the vicinity of circuit parties. In addition, police agencies might wish to consider working with local gay men's health advocates to address the problems associated with the use of crystal meth.

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Alternatives to Incarceration for Methamphetamine Abuse: The Experience of Collaboration Between Law Enforcement, the Court, and Substance Abuse Treatment Programs

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History and Context

Addiction treatment providers and those who work in the criminal justice system share a concern about public health and safety, and productive partnerships have evolved rapidly in the last decade. Drug courts represent one effort to integrate treatment with judicial case processing, in a manner that increases public safety while reducing long-term criminal justice costs. Methamphetamine use is a particularly good example of a problem drug that is so compelling that strong leverage, uniquely possible within the court system, increases the chances that users will exert great effort to desist. Unfortunately, many who work in the criminal justice system deal with clients only during the period from arrest to incarceration and may not see the successes of the treatment partnership firsthand.

Amphetamines have been part of the medical treatment formulary in the United States since the 1930s, used for conditions such as sleep disorder narcolepsy and attention deficit/hyperactivity disorder. Soon after amphetamines became available, their stimulant properties led to their use in enhancing performance by the military, pilots, and others needing to stay awake and functional for extended periods of time. By the 1950s, the use of amphetamine-based stimulants as performance extenders and enhancers was well-known among truckers, college students, and others with extended hours and demanding schedules (Anglin, Burke, Perrochet, Stamper, & Dawud-Noursi, 2000). The appetite suppression associated with their use also led to widespread use among those interested in weight loss. Manufacture of dextroamphetamine sulfate (Dexedrine) and methamphetamine (Methedrine) was legal, and use was not considered to be substance abuse. Over the next decade, however, longer-term experience with the drug demonstrated that dependence and addiction did occur, especially with the use of injected methamphetamine. The negative physiological and behavior changes associated with dependence and addiction were becoming more widespread and led many to reassess the therapeutic benefits of the drug (Anglin et al., 2000).

In 1965, amendments to food and drug laws began to restrict the sale and distribution of amphetamines, and the 1970 Controlled Substances Act provided measures to further reduce their availability; however, since manufacturing methamphetamine (MA) was relatively simple and did not require expensive equipment or materials, clandestine manufacturing did not diminish; neither did the market for the product, which was longer lasting and much less expensive than cocaine, the other major illegal stimulant. The 1988 Chemical Trafficking and Diversion Act represented an additional effort to control imports of precursor chemicals for MA (ONDCP, 1996) Since these chemicals are still available in other countries, the extended border between the United States and Mexico continues to provide opportunities to manufacturers in both countries. MA use is a worldwide and increasing problem; its use exceeds that of any other drug except marijuana (Anglin et al., 2000).

The Current MA Problem in the United States

Unlike the crack cocaine epidemic that peaked over the last 20 years, the MA epidemic began slowly, was not confined to urban areas, and was concentrated originally on the West Coast and in Hawaii. The fact that MA use was becoming epidemic only became apparent around 1990, when MA-related statistics began to show up in various legal and medical drug reporting systems.

The Drug Abuse Reporting Network (DAWN) data indicates that the estimated emergency room episodes mentioning MA steadily increased from 1992 and doubled from 1992 to 1994; the most recent data indicates that there were 14,923 emergency department visits in 2001 (Office of Applied Studies, 2003). Deaths in which MA is involved have also increased, as indicated from DEA data from western cities including Los Angeles, Phoenix, San Francisco, San Diego, and Seattle (Anglin et al., 1998).

Another set of indicators of the extent of the MA problem are those provided by law enforcement statistics. Increases in seizures of MA and manufacturing equipment have risen over the same period of time (ONDCP, 1997). Of even more concern is the location of such seizures. Once primarily limited to western states, they are now reported from the Midwest and the southeastern parts of the country as well. While local use information may not be available, the existence of such manufacturing and distributing information certainly indicates that the problem of MA use and abuse is spreading eastward at a rapid pace.

Unfortunately, many jurisdictions are not aware that they have an MA problem unless an extreme event forces a dramatic increase in local awareness. Local drug surveillance information in many areas does not even include MA, and police on the beat may not have received training on how to identify MA users among those who are stopped or assessed for suspicious behavior or erratic driving, for example. The physiological and psychological effects of MA use are not extreme in the early stages of use, but combinations of symptoms and behavior can be helpful indicators that MA use may be the underlying explanation. Common physiological effects include increased heart rate, blood pressure, and body temperature, as well as rapid breathing and enlarged pupils. Observable behavior includes excessive cheerfulness, hypervigilance or vigor, and decreased food intake and sleep time. MA users often "binge," using MA for days until their strength and/or funds run out, then "crash," when they may sleep for days following the plunge in mood

and energy levels. When they are "down," MA users may be irritable, suspicious, and depressed for an extended period of time (Rawson, Huber, Brethen, Shoptaw, & Ling, 1996). None of the symptoms described above are extreme, but when they occur in combination and exceed what might be seen as within the range of normal behavior, especially in someone who is very thin and demonstrating extreme mood swings, MA use is a reasonable suspicion. Law enforcement officers also need to know that because MA can be used in a variety of ways, a search may not produce identifiable evidence of use. MA can be ingested, snorted, smoked, or injected; only the last two methods of use will provide the potential for evidence (e.g., pipes, a distinctive odor, needle tracks). With increased and/or prolonged use, more violent or psychotic behavior, paranoia, confusion, and social/occupational deterioration make the problem more evident.

The increasing severity of the problem in many areas led to creation of the Methamphetamine Interagency Task Force in 1996. Their task was to control MA in this country by "designing, implementing, and evaluating the education, prevention, and treatment practices and strategies of the Federal Government with respect to methamphetamine and other synthetic stimulants" (Public Law 104-237, cited in ONDCP, 1996). Increased sharing of information related to the problem followed, and the extent of the problem at both the personal and environmental level has become more apparent in recent years. While this discussion will be limited to a focus on MA users, not manufacturers, the damage caused by the latter cannot be ignored. As an ONDCP report noted . . .

> Methamphetamine production entails extreme environmental risks. Clandestine laboratories produce large amounts of toxic waste, much of which is dumped onto the ground or into waterways. The cost to clean up these chemical toxins can easily run into thousands of dollars. (Irvine & Chin, 1991)

Information on the characteristics of users is also useful in understanding the extent of the problem and why it will be difficult to control and eradicate using the methods employed for heroin and cocaine use in this country.

Who Uses Methamphetamine?

Those who use MA do not fit the typical profile of the illicit drug user in many ways. They do not typically live in urban areas known for drug-abuse-related problems but are found in the suburbs, small towns, and rural areas. They also do not come to MA use from a background of early use of other drugs, nor do they tend to use other illicit drugs along with their MA use. Unlike most other drugs, MA is more of an equal opportunity drug; it is used by all racial and ethnic groups (except that use appears to be very low among African Americans), and by both women and men almost equally. While some users begin as adolescents, more begin use in early adulthood. Users also tend to come from family backgrounds marked by poverty, limited education, and problems stemming from frequent abuse and violence. Due in part to these circumstances, many also have limited social skills and psychological problems, especially post-traumatic stress disorder and depression. Their work histories are marked by frequent unemployment or partial employment, and many have never married, living with family or alone well into their 30s and older (CSAT, 2000).

This portrait comes from a federally funded study of treatment for MA dependent persons that followed more than 1,000 users entering treatment in eight programs in California, Hawaii, and Idaho (Reiber, Galloway, Cohen, Hsu, & Lord, 2000). More than half of those who entered treatment were mandated by the criminal justice system. Thus, over the three years of the study, a great deal of experiential data became available about the actions of legal and treatment systems in working with MA abusers. In California, this experience has been augmented by the implementation of the Substance Abuse and Crime Prevention Act, known generally as "Proposition 36," an act that began in 2001, and mandated drug treatment as an alternative to prosecution or incarceration of those arrested for nonviolent drug-related offenses. More than 20,000 of those persons mandated to treatment by county Proposition 36 programs have been MA users; they represent more than half of all persons in the Proposition 36 program during its initial year of operation (UCLA, 2003).

MA users in the CSAT study included those relatively few who referred themselves and others pressured to enter treatment by others, primarily family members, other social services, or employers. It is of interest that members of this subgroup were very similar to those mandated to treatment. Almost no one agreed that they needed treatment. They said that they were just there because they had to be and because the alternative (jail for one group; divorce, job loss, or loss of custody of children for the other) was worse. They did not differ in age, education, race or ethnicity, extent of other problems, prior drug treatment, or duration of MA or other drug use. Virtually the only way the two subgroups differed was that the mandated group did have more prior contact with the criminal justice system. The experience of those in each subgroup in the treatment study was different, however. Staying in treatment was, as usual, associated with longer periods of abstinence and improvement on other measures of progress, such as reduced recidivism, reduced physical and psychological morbidity, and increased stability in personal and social relationships, as well as increased employment. The key was that those who had been mandated to treatment stayed in treatment longer, thus providing the environment for these positive changes to occur.

Effectiveness of Mandated Treatment Programs

While both California's Drug Court and Proposition 36 programs are designed to reduce the burden on society coming from prosecution and incarceration costs, they operate in somewhat different ways and may have different kinds and levels of effectiveness. Both types of programs require treatment, periodic drug testing, appearances before a judge, reports from treatment providers regarding an offender's progress, and sanctions for noncompliance. Drug court programs, however, tend to provide more supervision and support than Proposition 36-type programs and often require improvement in the areas of education and employment, greater length of time in treatment, and more frequent appearances in court for review of behavior. Hence, drug courts' administrative costs are higher, and in most counties, they are considered "tougher" than their Proposition 36 counterparts (Liu, 2003). Due to their additional support and requirements, drug courts may be more effective in the long run—particularly for users of MA, due to their high rate of relapse and dropout (CSAT, 1999). There is not yet sufficient data available regarding Proposition 36 treatment outcomes to make a comparison.

In our experience, there are also benefits in community collaboration and stability that come from these collaborative programs. They are harder to quantify in cost

terms, but their good effects can have lasting benefit. One example comes from the collaboration between community-policing efforts and drug court programs. Women with domestic violence problems who are drug court clients learned that they could call for help in a potentially violent situation and get that help promptly, and this in turn increased their confidence in and cooperation with law enforcement. When one woman graduated recently from the Drug Court program, she asked that her arresting officer come to court and present her with her graduation certificate; in her speech, she thanked him for setting her on the road to a new life that she never thought would be possible for her. In turn, police staff connected with the court program have seen that addicts can turn their lives around.

Regardless of which type, California's mandated treatment programs are significantly less costly than incarceration. Since Proposition 36 is a new program, data regarding its first year in effect is just now becoming available, but preliminary calculations by the California State Legislative Analyst's Office (LAO) regarding Proposition 36 estimate annual savings of about $275 million for 37,000 offenders, or approximately $7,400 per offender (UCLA, 2003). Drug courts have existed in California since 1989, and a report by the California Drug Court Partnership estimates a total savings of $43.4 million for 7,000 offenders in an 18-month period (January 2000 to September 2001), which translates to a yearly savings of $3,700 per offender (Drug Court Partnership, 2002).

Besides the immediate cost benefits, research evaluating drug courts in the state suggests that using mandated treatment programs in lieu of incarceration has advantages for not only the criminal justice system, but for participants, their families and social support networks, and society at large (Drug Court Partnership, 2002). Participants in California drug courts entered the program with low educational achievement, high unemployment, and lengthy drug abuse histories. They graduated with gains in employment, housing, and education; significantly lower arrest, conviction, and incarceration rates; and a high rate of drug-free births (96% of those born during the study period). In addition, participants measurably improved conditions for themselves, their children, and their other family members; they also gave back to the state through their taxable earnings and participation in the economy.

For law enforcement, the message is that earlier identification of drug users is possible, and of value, because early intervention can prevent progression into more severe drug dependence and the associated dangerous and costly effects on the individual and society. When that early intervention is coupled with mandatory treatment, the result for the drug user may be not just temporary abstinence, but also the ability to deal with the entire context of the problem and to learn skills to maintain abstinence and a healthier lifestyle, rather than the return to drugs and the rest of the downward spiral that often follows incarceration.

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Police Responsibility at a Clandestine Lab Site and the Impetus of Training

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Why would police officers be needed to dismantle a hazardous environment? A clandestine laboratory or dump site is not just a hazardous material incident. It is a crime scene, with persons deliberately attempting to produce an illicit drug with deadly chemicals. It is an area that must be processed forensically for evidence. It is also a situation that can result in violent physical personal attack.

Until the mid-1990s, clandestine laboratory processing was limited to Drug Enforcement Administration (DEA) teams, western states' police agencies, and major city police hazardous materials squads.

The spread of small but deadly clandestine labs throughout the country has forced other agencies to respond to this phenomenon by developing local and state clandestine lab teams because of the number of incidents and responsibility at a lab site prescribed by federal employee health and safety regulations as well as hazardous waste regulations.

Clandestine Lab Dismantling

Clandestine lab processing was limited to DEA teams, western states' police agencies, and major city police hazardous materials squads until the mid-1990s. The rapid migration of methamphetamine led to the development of dismantling teams.

A clandestine lab dismantler is required to complete a 40-hour formal training program outlined by federal regulation after an extensive physical examination. Classroom training includes regulatory authority and responsibility, toxicity, chemical properties, use of protective equipment, chemical handling, and packaging. Practical exercises complement classroom presentations with examples of booby traps, chemical dangers, and other pitfalls in simulated situations.

Upon completion of the 40-hour training, individual testing of Personal Protective Equipment (PPE)—including full Level B dressing, Air Purifying Respirator and Self Contained Breathing Apparatus fitting—and a written test must be passed before the program is finished.

Officers who successfully complete the 40-hour course must then document 36-hours of field training dismantling clandestine labs in their jurisdictions and must receive recertification annually.

The Training Initiative

Officer safety and the continued migration of methamphetamine propelled the Illinois Law Enforcement Training and Standards Board (ILETSB) to take a stand

and seek funding for methamphetamine and other illicit drug interdiction. The ILETSB was successful in receiving a four-year award from the Illinois Criminal Justice Information Authority through the Edward Byrne Memorial State and Local Law Enforcement Assistance Program.

The goal of the proposed training program was to continue to improve the response and safety of law enforcement officers to drugs and related problems by including the latest information on drug trends. Topic areas included manufacturing, transportation networks, and the sale of drugs, particularly methamphetamine.

During the tenure of the award, the ILETSB developed a four-hour methamphetamine awareness curriculum for line officers. Included in the curriculum is a three-part videotape series focusing on methamphetamine in Illinois, the manufacturing process, and user behavior. The curriculum continues to be delivered through the ILETSB's 16 Mobile Team Units, a unique regional training system.

The ILETSB Drug Interdiction Advisory Committee, recognizing the importance and prohibitive cost of the 40-hour dismantler course and the cost of equipment to local and state law enforcement, chose to provide funding for three courses. More than 100 Illinois law enforcement officers have completed the coursework to become a clandestine lab dismantler and received personal protective equipment at no cost to the officer or department.

As part of the ILETSB training initiative, print materials were created to promote officer safety and community awareness. These items include a brochure designed to assist the first responder in identifying a possible methamphetamine incident and retail and public awareness posters. For more information concerning these materials, contact the Illinois Law Enforcement Media Resource Center at (309) 298-2646.

ILETSB continues to be proactive in the fight against methamphetamine and other illicit drugs. Because of the ILETSB's initiative, Illinois law enforcement officers are safer today in fighting methamphetamine.

The Meth User and Community Impact

Small batch clandestine methamphetamine labs are extremely dangerous, causing fires, explosions, and toxic poisoning incidents all over Illinois. Is it really worth it?

That rhetorical question is answered by just looking at the continued increase in the use of the drug. Methamphetamine is one of the most addictive drugs known. Not only does it artificially induce the excitement of the natural central nervous system stimulants, but it also triggers a release of natural chemicals that flood the nervous system with a euphoric rush incomparable with any natural pleasurable human experience.

As a consequence, the user is seduced by the drug quickly, and the drug can easily become the only focal point of a person's existence. Family, self, job, and other elements of life become unimportant, leaving the user a shell of him- or herself.

Methamphetamine is generally intravenously injected, snorted, ingested, and smoked. Its appearance varies from white powder to an oily peanut butter-like substance depending on the manufacturing method, the skill of the cook, and the ingredients available.

The most common effective user methods are injection or smoking, which allow almost instant transfer through the blood-brain fluid barrier. The euphoric rush gives the user confidence, energy, and a sense of well-being that can last 8 to 12 hours.

The abuse doesn't stop there—the drug is too "good," and binge cycles develop, some resulting in continuous use for up to 14 days, 24 hours a day. During this binge, the euphoric thrill is unable to be maintained due to a depletion of "feel good" chemicals. Depending upon individual physiological differences, the abuser's euphoric state then diminishes, as the euphoric chemicals are depleted, leaving a dangerous, artificially stimulated person who is paranoid and delusional and dedicated to stopping anyone from interfering with this cycle. This final period is called "tweaking" and can be very dangerous for law enforcement.

The drug is not physically addictive, but the ultra intense pleasurable feeling first experienced causes an extreme psychological commitment to maintain such a state, even though the body is not capable of sustaining such a condition for very long.

After about 14 days, no amount of methamphetamine can force the abuser to continue, and the person sleeps for 24 to 48 hours. Upon waking, the abuse cycle starts again.

Physical damage from long-term use can include heart and cardiovascular damage, kidney and liver damage, and neurological destruction that is permanent. Tooth loss due to poor blood circulation in the gums, tremors similar to those exhibited by people with Parkinson's disease, and severe depressive states can also result from long-term use. The use of methamphetamine is rewarded with a self-induced psychosis. These consequences are ignored by people blinded by the false hope of a constantly ecstatic existence, unfortunately placing entire communities in danger.

Self-destruction and severe trauma to the social fabric that unites our communities have been common results of substance abuse, but very few illicit drugs have taken the toll methamphetamine exacts on the Midwest today.

This drug is not a new product, nor has it been uncommon. Methamphetamine is one of hundreds of compounds known as amphetamines that were first synthesized in the 1870s. All amphetamines are central nervous system (CNS) stimulants, and range from simple mild forms found in chocolate to powerful types, such as methamphetamine and methylene dioxy methamphetamine, also known as ecstasy.

Some legitimate uses for such stimulants have been sinus decongestants, anorexics (appetite suppressant), mood elevation, and treatment for narcolepsy. Military personnel used amphetamines during World War II, and in the 1950s and 1960s, the drug was widely prescribed for depression.

In the late 1960s, the medical profession recognized that the drug was over prescribed, and pharmaceutical diversion was seriously limited. Outlaw Motorcycle Gangs (OMGs) then controlled the illicit market, making various forms of illicit amphetamines including methamphetamine form P2P (Phenyl-2-Propanone). These products were nicknamed "crank."

In the late 1980s, Mexican Organized Crime (MOC) cartels entered the market because of the considerable profit gain. Using OMGs and other organized distribution systems, methamphetamine was and is being produced in "super labs" (10 pounds to 100 batches) throughout the Southwest, West, Northwest, and now, the Midwest. This organized distribution system is entirely independent of the small batch lab that now plagues most Midwestern states.

The small batch clandestine lab plague began around the same time the MOC distribution started, and for Illinois, its beginning can be placed in southwestern Missouri. Rural areas with a strong agricultural industry such as Arkansas, Illinois, Iowa, and Indiana were affected by the Missouri clandestine lab problem.

As a development separate and apart from big drug business, the small batch clandestine labs are cottage industries providing a close knit group of six to eight abusers with their drug and the means to make more of the drug.

As a consequence, the common drug pyramidal distribution structure is nonexistent, and instead a multi-cell system develops, limited by the resources of the small group.

The most popular methamphetamine making process used by small batch cooks is the Nazi method, which is considered a variation of what chemists would know as the Birch reduction method.

In 1995, few labs were found in Illinois, and little recognition of the problem was noted. As the cooking and abuse of the drug became more obvious, the statistics soared.

One of the problems is recognizing what seems to be an innocent jumble of garbage to be a potentially dangerous clandestine lab. A lab conjures up a view of special glassware, heating devices, and other unusual equipment. Instead, a lab looks to be empty car starting fluid cans, discarded cold medicine containers, mason jars, gas cans, or soda bottles with tubes protruding from them.

These deceptive trash piles are deadly to the first responder or neighbor who may be exposed to fire, explosion, and toxic fume inhalation. Awareness of these dangers is vital to the officer on the street, who can now be in jeopardy of poisoning or explosion at any call. That police officer has been trained to take action, but in cases of clandestine labs, the best action is to secure the area and wait for specially trained dismantlers to mitigate the situation.

The Frightening Products and Process for Making Methamphetamine

Methamphetamine is synthesized many different ways using ingredients that range from artificial sweeteners to specialized forms of ketones.

In Illinois and most of the Midwest and South, the two most common methods of producing methamphetamine are Nazi and Red-P (red phosphorous). Both methods use relatively common precursors, solvents, catalysts, chemicals and fertilizer, and the cook processes involve Ephedra, Ephedrine, or Pseudoephedrine.

Until recently, ephedra, a substance obtained from the ephedra plant, was used in over-the-counter (OTC) weight loss products and OTC metabolism boosters. This plant product is a central nervous system stimulant (CNS) grown as a cash crop in China and India.

Ephedrine is a refined form of ephedra. Distribution of bulk quantities of ephedrine is regulated by the Drug Enforcement Administration. Pseudoephedrine is a laboratory produced version of ephedrine, which is the most common precursor found in small batch clandestine labs.

Any of the above chemicals can be reduced to produce methamphetamine and may be found in small clandestine labs. The role of these substances is similar to the purpose of flour in bread—that is, an ingredient upon which the rest of the process is dependent.

In the Nazi method of methamphetamine production, several dangerous and sometimes deadly chemicals are usually present. Solvents, such as alcohols, acetone, ether, and camp fuels, are used to break down cold tablets and provide liquid solution material. These solvents are extremely volatile but are foolishly and frequently heated by open flame and quickly become a source of fire and explosion.

Lithium, an "active" metal, is the most commonly used catalyst in a Nazi lab. By tearing apart photographic and electronic lithium batteries, a strip of this metal is obtained by the cook and placed in containers of kerosene or mineral spirits to protect it from air.

This metal is active because one of its chemical properties is rapid decomposition, producing hydrogen gas and sodium hydroxide (lye). If the metal is exposed to any aqueous (water) or damp atmosphere, the decomposition is accelerated dramatically and produces concentrated amounts of hydrogen gas and spontaneous combustion from heat generated by the decomposition.

Another chemical compound found at Nazi labs is anhydrous ammonia (NH_3) used commercially as a refrigerant, duplication process chemical, and fertilizer. Fertilizer, the most common source for the cook, is stored in pressurized, specially designed tanks found in fields throughout the Midwest. Anhydrous when stored has a temperature of -28 F and causes severe frostbite. Its pH value is approximately 12.2 on a 14 scale, making its caustic nature similar to lye.

The most insidious quality of anhydrous is its love of water, wherever water can be found. Damage to the eyes, nose, mouth, throat, and lungs usually results from direct exposure to this product, and safe handling requires special equipment and procedures. No such safeguards are used by the cooks, placing themselves and any other persons near the container in serious jeopardy of burns and explosion.

Using table salt and drain cleaner (sulfuric acid) or hydrochloric (muriatic) acid and aluminum foil, these cooks produce hydrogen chloride gas in soft drink bottles, gasoline containers, and pressurized sprayers. This gas is also known as hydrochloric acid gas with all the dangerous properties of hydrochloric acid. Protective measures for either the cook or the surrounding area are rarely observed.

The second method found in Illinois, Red-P, occurs when one of the ephedrine family products is reduced using red phosphorus and iodine crystals instead of ammonia and lithium.

Red phosphorus is extracted from match book strikes or other sources using a volatile solvent. When heated intensely, red phosphorus emits phosphine gas. This is colorless, odorless, and generally fatal if inhaled in concentration. Red phosphorus can also, under heat, convert to white phosphorus, a substance that reacts violently with air, causing fire and explosions.

Iodine is obtained at farm supply stores or processed from tincture of iodine and mixed with red phosphorus and water. Iodine, a halogen, is extremely corrosive, and the resulting mixture emits deadly vapors that can permeate building materials, making the lab site a long-term environment hazard that must be mitigated.

These chemicals are being used by untrained, unprotected, and uncaring cooks whose actions and ignorance can kill themselves, their families, neighbors, and emergency personnel responding to any call from a medical emergency to a domestic problem.

Clandestine Lab Site Safety Guidelines

1. On any call for service, consider the possibility of toxic exposure; if you are unsure of the environment, do not enter.

2. If possible, evaluate the situation from a distance and upwind of the possible lab site.

3. Always observe with your eyes, not with your hands or feet.

4. Always report your status and observations immediately and request backup.

5. Unnecessary exposure is exactly that—**Unnecessary Exposure**.

6. Avoid areas of unusual chemical odors, and don't use your sense of smell to identify substances.

7. Collapsed persons or bodies at a lab site can indicate a danger you may not be able to detect; clear the area and request assistance.

8. Check for discoloration of drywall, tile, and painted surfaces; avoid those areas.

9. Be aware of any change in your vision or hearing capabilities, dizziness, or faintness—if any of these conditions are experienced, exit the area immediately and seek medical assistance.

10. Prevent entry by any unauthorized people—this is a dangerous site and a crime scene.

11. Seek decontamination immediately after possible exposure to a clandestine lab environment.

12. Report in writing any possible lab exposure to assure medical surveillance by your supervisors.

13. Contact lenses must be removed and eyes thoroughly flushed with water after possible lab contact.

14. Hands and faces must be washed with soap and water after possible lab contact.

15. If the area is safe, render first aid, but keep in mind the person being treated may be contaminated with toxic substances.

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Substance Use Among Youth During Two Developmental Transitions and Applications to Prevention Strategies

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Introduction

The rates of substance use among American youth are alarmingly high. Among the nation's eighth graders, recent data show that 29% had consumed alcohol six or more times, 11% smoked regularly, and 7% had used marijuana. By 12th grade, 61% had consumed alcohol six or more times; 22.6% smoked regularly; and 24% had used marijuana (Johnson, O'Malley, & Bachman, 2000). Similarly, among youth and young adults attending college, data from several national surveys shows that 70% of full-time college students had consumed alcohol in the past 30 days. In 1999, 40% of college students surveyed reported that in the past two weeks, they had engaged in heavy or binge drinking, defined by Wechsler, Moeykens, Davenport, Castillo, & Hansen (1995) as five or more drinks in a row for men and four or more drinks in a row for women. Findings from two other large-scale national studies (Center for Disease Control, 1997; Presley, Meilman, & Cashin, 1996) are consistent with those of Wechsler: two of every five college students admitted to binge drinking. Students' ethnicity was also revealing: white students are the heaviest drinkers, black students the lightest drinkers, with Hispanics falling somewhere in between. Alcohol is the primary drug used in college; smoking is second (30%); marijuana is third (20%); and cocaine (7%) is the least used substance (O'Malley & Johnston, 2002).

The drinking statistics are accompanied by similar grim reports of consequences. As one example, motor vehicle crashes are the leading cause of death in the United States and it is reported that alcohol consumption is involved in about 50% of crashes (Augustyn & Simons-Morton, 1995; Perkins, 2002b). Thus, there is compelling evidence to suggest that American youth are at high risk for initiation and continued substance use at two developmental transitions: (1) preadolescence and (2) leaving home/entry into college. While it is recognized that many youth emancipate in other ways (i.e., enter military service, the work force, or vocational apprenticeships), the evidence shows that youth who attend college are at higher risk for substance misuse than other youth.

As policy development, implementation, and enforcement play increasingly important roles, it is imperative that security and law enforcement personnel have the opportunity to update their knowledge on this topic. The purpose of this article is to identify factors that place youth at risk at two major developmental transitions and to link prevention strategies with risks based on the current state of the science in regard to these two populations of U.S. youth.

Data Sources and Organization

Data that has become available in regard to substance use among youth during the past decade is of excellent quality. Johnston and colleagues (2000) have conducted a series of annual and follow-up studies (Monitoring the Future) since 1976 involving nearly 20,000 high school students. Additional longitudinal studies involving preadolescent and adolescent youth have also been conducted (Hawkins, Catalano, & Miller, 1992; Kandel, Yamaguchi, & Chen, 1992).

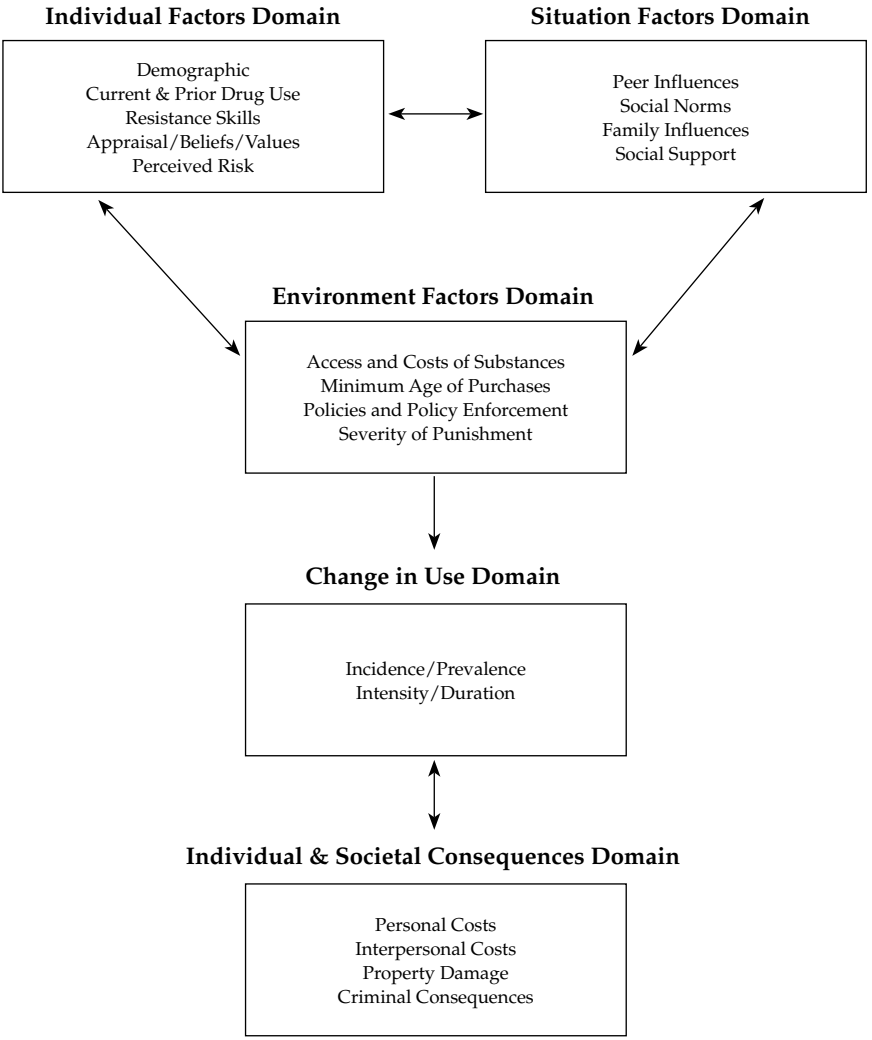
Three nationally conducted studies funded by the Robert Wood Johnson Foundation, Drug Prevention in Higher Education Program of the Fund for the Improvement of Postsecondary Education (FIPSE) U.S. Department of Education, and the Centers for Disease Control, as well as numerous studies funded nationally and awarded to individual investigators, provide data on college students' substance use/misuse. These studies collected data at several time points, and one was longitudinal. About 60,000 students representing over 300 colleges responded to surveys (CDCP, 1997; Presley et al., 1996; Wechsler, Davenport, Doowdall, Moeykens, & Castillo, 1994).

A transactional model of substance use/misuse is the organizing mechanism for this report and is portrayed in Figure 1. Transactional theory posits that situations and the environment will influence individual behavior (Hawkins et al., 1992). The five domains of transaction (individual, situation, environment, behavior change in substance use, and individual and societal consequences) contain multiple influencing factors. The double-headed arrows connecting the domain boxes portray the potential interactions among the domains of factors. For example, family influences may interact with ethnicity in the demographic factors of the individual domain box and predict changes in substance use. Page limitations prevent the discussion of all factors in all domains of the model shown in Figure 1; therefore, one risk factor in each domain has been selected as an exemplar for youth in each of the two developmental transitions being presented.

Definitions, Assumptions, and Delimitations

Developmental transitions are both biological and sociocultural. Examples are reaching puberty, becoming an adult, and retirement from work (Murphy, 1990). Developmental transitions differ from transitions made following major life events, such as being victimized by a disaster, in that they are normative (i.e., expected instead of unexpected). To the extent that an event is expected, it is anticipatory (i.e., can be prepared for to some extent). Developmental theorists, however, argue that because developmental transitions involve change in many aspects of one's life and environment, persons in transition are vulnerable to stress-related illness and other changes (Baltes, 1987). Schulenberg and Maggs (2002) continued with this line of reasoning and examined the transition to college and changes in drinking behavior.

Figure 1
A Transactional Model of Substance Use/Misuse Among Youth Based upon Known Risk/Protective Factors (Adopted from Pentz, 1999)



Risk factors are attributes of individuals and/or environments that increase the chances of developing a disorder and contribute to greater severity or longer duration of the disorder. The identification of risk factors for a given population is essential to "match" these factors with prevention programs. Three types of risk factors are biological (e.g., age, gender, genetic transmission), psychological (e.g., low self-esteem, sensation-seeking, trauma), and environmental (e.g., negative peer bonding, gender norms, easy access to substances). In contrast, protective factors are

at the opposing end of the continuum of risk. Protective factor mechanisms work by decreasing the risk of disorders by reducing exposure to risk factors, disrupting important processes involved in the development of the disorder, and interacting with risk factors to reduce their effects (Hawkins et al., 1992; Mrazek & Haggerty, 1994).

Four assumptions are advanced based on the current state of prevention science:

1. Prevention programs are intended to decrease the *incidence* (rate of new cases) of a condition.
2. The concept of risk reduction is at the heart of prevention.
3. Preventive interventions typically are most effective when they consider multiple domains of action.
4. Preventive efforts require significant and sustained commitments from local, state, and federal governments and coordination across disciplines and agencies.

This article focuses exclusively on U.S. youth. The rationale is that transitions are governed by culture, tradition, and social norms that are beyond the scope of this article. The transition to young adulthood is limited to leaving home and attending college. The rationale is that studies comparing youth who attend college versus those who do not, show those college students' drinking patterns appear to be more dangerous than for youth who do not attend college (O'Malley & Johnston, 2002).

The Transactional Model and Exemplars Applied to Two Developmental Transitions

Individual Factors

Perceived risk is the risk factor selected to exemplify the transition from preadolescence to adolescence, and appraisal/beliefs/values is the risk factor selected to exemplify the transition from leaving home to attending college (See Figure 1). Several studies have shown that in general, youth perceive risk of substance use as being low. Moreover, the Monitoring the Future annual surveys have shown that the lower the perceived risk of a substance, the greater the increase in use of that substance (Johnston et al., 2000). Perceptions of low or modest risk of substances are likely influenced by the family influences factor in the Situation Domain and the incidence/prevalence factor in the Environment Domain. These are examples of the complexity of substance use decisions and the importance of statistical testing of multiple factor models.

College students drink for a variety of reasons including complex personality traits, expectancies, and attitudes. According to Baer (2002) who has conducted multiple studies involving college students and conducted a comprehensive review of individual differences in college students who consume alcohol, some of the most consistent findings across studies and with no gender differences are that heavier drinkers have been described as pleasure seeking, extraverted, impulsive, rebellious, and nonconforming. They consistently endorse permissive attitudes toward heavy drinking. Drinking among college students displaying these characteristics also resulted in more negative consequences. In contrast, students who are more committed to traditional and religious values tend to drink less (Engs, Diebold, & Hanson, 1996; Wechsler et al., 1995).

Situation Factors

The literature strongly suggests that for both the adolescent and young adult transitions, peer influences are the primary factor for substance use and misuse; therefore, the peer influence factor shown in Figure 1 was selected to discuss both transitions. Two theoretical perspectives have advanced the understanding of peer influence in adolescence. Problem behavior theory (Jessor, 1987) posits that substance use by adolescents is characterized as *one* of several deviant behaviors that co-occur. Peer cluster theory (Oetting & Beauvais, 1987) hypothesizes a more complex peer phenomenon (i.e., peer selection and peer influence). Peer selection is a process whereby one seeks out those who are similar to him or her for friends. Peer influence suggests that individuals in a given peer group reciprocally model drug use behavior. These two components of peer cluster theory suggest both initiation and continuation of substance use among adolescents and provide the rationale for incorporating peer influence into prevention and intervention programs.

According to Perkins (2002a), peer norms are the strongest influence on college students' personal drinking. The findings from several studies reveal misperceptions of peer drinking attitudes, drinking quantity, and that drinking to intoxication does not necessarily affect academic performance and other responsibilities (Baer & Carney, 1993; Perkins & Wechsler, 1996). Surveys reveal that most college students think that their peers are more permissive in personal drinking attitudes than is the case, and likewise that peers consume more frequently and more heavily, on average, than is really the norm.

Environmental Factors

Among adolescents, there is considerable overlap between to environmental factors shown in Figure 1, access to substances and policy—in particular, minimum age of purchase. Forster, Hourigan, and Kelder (1992) found that in the three communities studied, 12- to 15-year-olds, both male and female, were successful in purchasing cigarettes from stores 53% of the time and from vending machines 79% of the time. There is a complex web of access of illegal drugs. Some high school students purchase drugs from fellow students who purchase from dealers. In terms of access to alcohol, Grant (2000) reported that one in four children under 18 years of age lives in a household in which at least one parent is alcohol-dependent. This finding suggests that the possibility of obtaining alcohol from one's own home may be quite easy.

Policy and policy enforcement are currently receiving close scrutiny on college campuses, and this was selected to show the interrelationship of factors in the model for college students. Presley, Meilman, & Leichliter (2002) noted that until recently, college and university officials regarded drinking by students on campus as a "rite of passage" and that, if left alone, students would pass through various drinking stages unharmed. Currently, less is known about the university campus culture and its interaction with personal and other variables that also influence drinking patterns of students. College environments are not single cultures, and students are not homogeneous. Astin (1993) identified more than 200 environmental variables that potentially influence the behavior of individual students. For example, students who are members of sororities and fraternities consume more alcohol than students who live in residence halls or in off-campus housing. Nonetheless, there is

evidence from surveys of campus administrators that policy and policy enforcement on campus is successful in curtailing drinking.

Change in Use Factors

There are varied trajectories of the initiation of and continued use of substances. Some youth and young adults experiment with addictive substances and do not adopt regular use, whereas others move from legal to illegal drug use. A clear pathway is discernible in adolescents from the use of legal to illegal substances, supporting the "gateway" theory (i.e., cigarettes and alcohol use may lead to the use of more harmful drugs) (Kandel, et al., 1992). Kandel and colleagues identified three developmental stages of drug use through age 35 that differ by gender. The data showed an initial use of legal substances, alcohol and/or cigarettes, with smoking playing a more important role for girls than for boys. Early age of onset was one of the most important predictors of movement from "legal" to "illegal" use. Among high school senior girls, crack cocaine users began smoking cigarettes at 10.6 years of age compared with 13.5 for those who remained exclusively cigarette smokers (Kandel et al., 1992).

The Core Survey conducted by Presley and colleagues (1996) found that 20% of college students take their first drink *after* reaching age 18. The same study, however, reported that approximately 44% of full-time students at four-year colleges engage in "binge" or heavy drinking patterns. Data has not been reported separately by year in college (e.g., freshman, sophomore, etc.), so it is not known how soon and to what extent college students move from nondrinking to varied drinking patterns.

Individual and Societal Consequence Factors

The effects of substance use on health are exemplified for the adolescent transition, and potential injury to self and others was selected to portray the college youth transition (see Figure 1). The consequences of substance use and abuse among adolescents are more difficult to identify than are the risk factors that likely contribute to use. Some potential health-related consequences of teenage substance use are the suppression of growth hormones, increases in the production of adrenal hormones and estrogen, and decreases in testosterone levels (Arria, Tarter, & Van Thiel, 1991). In contrast with adults, it is not known how heavy use must be to cause serious organ and other body function damage, including potential brain damage. Among youth, substance use is a also a significant risk factor for suicide (Thompson, Moody, & Eggert, 1994). Finally, youth suffer from high rates of combined psychiatric disorders and substance use (Kandel et al., 1997).

Perkins (2002b) noted three categories of potential negative consequences of college student drinking. The categories and examples from each are as follows: damage to self (academic impairment, personal injury, unintended and unprotected sexual intercourse, impaired driving, death), damage to other people (noise, vandalism, property damage, fights), and institutional costs (legal costs, property damage, time demands and emotional strain on staff, loss of prestige and reputation). Among the more startling statistics obtained from national surveys pertain to driving while impaired, sexual assault, fights, and interpersonal violence. Engs et al. (1996) reported that even moderate drinkers reported having driven while drunk at least

once a year. Among heavy drinkers, 56% of the males, and 43% of females reported having driven while intoxicated.

Sexual assault data from several studies shows that of those who participated in surveys, up to 30% of females have been victims of sexual assault. Among women who were drinking at the time, 55% reported acquaintance rape or sexual coercion (Perkins, 2002b).

Among nearly 42,000 students responding to the national Core Alcohol and Drug Survey from 89 institutions, 30% reported being involved in an argument or fighting as a result of drinking in the past year (Presley et al., 1996). Nationally, 43% of college students noted that they experienced interruptions in study or sleep, and 44% reported monitoring a fellow student who drank too much (Wechsler et al., 1995).

Linking Known Risk Factors with Prevention Programs

The Institute of Medicine (IOM) adopted three levels of substance use/misuse prevention. *Universal* prevention approaches are intended for the population as a whole. *Selective* prevention approaches are intended for groups at high risk for alcohol, tobacco, and other drug use. *Indicated* prevention approaches are intended for those *already manifesting* problems etiologically linked to later substance use but have not initiated use (Mrazek & Haggerty, 1994). It is sometimes difficult to make distinctions between prevention and intervention programs.

Programmatic Applications of a Transactional Framework to Youth and Young Adult Developmental Transitions

Prevention strategies aimed at individuals are focused on changing the demand for drugs by changing attitudes, perceptions, and behaviors concerning drug use. In contrast, interventions aimed at environments are focused primarily on changing supply of or access to drugs.

Prevention Programs That Target the Individual Domain

Prevention programs designed for individuals posit that individuals will change their substance use behavior, thereby reducing demand for a substance of choice. Skill-building programs that include resistance skills, coping skills, and support-seeking skills have been shown to be the most effective (Pentz, Bonnie, & Shopland, 1996). According to Pentz (1999), programs aimed at individuals have limitations. They are labor-intensive and reach fewer youth than other types of programs. In addition, the programs that have been deemed successful rely on cognitive skills that may not be the optimal learning style for all youth.

Based on the IOM prevention categories (Mrazek & Haggerty, 1994), programs designed for the purpose of changing the demand for drugs among college individuals are intended to target three groups: (1) A population as a whole, for example incoming freshmen students, (2) Groups at high risk for alcohol, tobacco, and other drug use (e.g., fraternity and sorority members), (3) Groups already manifesting problems *etiologically linked* to potential use, but have not initiated use, for example, children of alcoholics.

Larimer and Cronce (2002) conducted a comprehensive review of current individual-focused prevention and treatment strategies to reduce alcohol abuse among college students. As has been noted in prevention programs conducted for youth and adolescents, educational and awareness programs appear to have limited effects, yet remain the most widely used on college campuses. Six of seven studies reviewed by Larimer and Cronce found changes in attitudes but no changes in drinking or negative consequences. Studies that included values clarification and education about normative behavior fared better.

Some recent additions to college prevention programs have been skill-building approaches to assist students in self-monitoring of alcohol use, personalized feedback via brief motivational procedures, and lifestyle skills to include exercise and meditation. According to Larimer and Cronce (2002), these approaches showed lower incidences of drinking and fewer negative consequences and thus offer better opportunities for motivating changes in alcohol use than other programs.

Prevention Programs That Target the Situation Domain

Applications aimed at situations include changing perceptions in groups, promoting positive peer influence, and bonding with nonusing peers. Thus, programs that increase resistance skills and correct false perceptions about social norms show evidence of successful behavior change (Pentz et al., 1996; Perkins, 2002a). Hawkins et al. (1992) developed an innovative anticipatory program whereby elementary school students are taught to bond with nonusing peers. According to Pentz (1994), programs that address two or more influences have demonstrated a 20-40% net reduction in drug use (Pentz, 1994).

Based on risk factors identified for college students in the Situation Domain, a major undertaking is changing the perceptions that "everybody drinks" at parties. Since college campuses are "peer intensive" (i.e., composed mostly of young people within the 18 to 22-year old group), changing social norms in regard to alcohol use is a difficult challenge; however, false perceptions can be changed by providing accurate information and emphasizing the values of safety, responsibility, and drinking moderation. Disseminating information widely (e.g., in student newspapers and orientation programs) and by disseminating information to specific known groups (e.g., sorority and fraternity houses), misperceptions will eventually be counteracted (Perkins, 2002a).

Prevention Programs That Target the Environment Domain

Controlling access to alcohol and drugs during adolescence, a high-risk factor in this domain, involves providing places for youth to spend time and energy where drugs are less easily obtained. Increasingly, high schools are requiring students to become involved in community service in order to receive a diploma. The goal of the schools may not be to reduce substance use, but it has the desired effect. Extracurricular activities occur in gymnasiums, fields, and community centers, which are places where youth are less likely to have access to drugs. Community coalition programs are effective because youth experience positive interpersonal communication, gain in efficacy and empowerment, and achieve successful time-limited objectives (Pentz et al., 1996).

College prevention programs must include both the campus and off-campus environments. Prevention strategies aimed at changing the environment to reduce college student substance misuse and its negative consequences fall into four major categories: (1) de-emphasizing the role of alcohol on campus by promoting social, recreational, academic, and public service options; (2) increasing compliance with policies including minimum legal drinking age laws; (3) reducing commercial access to alcohol; and (4) decreasing specific types of alcohol-related problems (DeJong & Langford, 2002; Toomey & Wagenaar, 2002). The first category, de-emphasizing the role of alcohol on campus can be targeted in a variety of ways. Many campuses now offer alcohol-free housing and promote social events that do not include alcohol. Some campuses have community partnerships that together coordinate volunteer and other valuable community services. De-emphasizing the use of alcohol by students can also be accomplished by banning alcohol advertising near campus.

Policies that enforce the legal drinking laws in respective states where campuses are located involve communication with off-campus establishments. Other strategies include making it difficult for students to buy false IDs, encouraging compliance checks, banning kegs, increasing awareness of laws, banning alcohol in sports stadiums, monitoring events where alcohol is permitted, and providing food and nonalcoholic drinks. Campus authorities can also work with establishments that serve alcohol by strongly encouraging these establishments to check ID, train managers and servers, and restrict happy hours and price promotions (DeJong & Langford, 2002; Toomey & Wagenaar, 2002).

Implications

Substance use/misuse among youth and young adults, particularly consumption of alcohol, is a major public health problem in the United States; however, current advances in knowledge of risk and protective factors offer promise in finding solutions. Private and federal funding agencies such as the Robert Wood Foundation, the National Institute on Alcoholism and Alcohol Abuse, and the National Institute on Drug Abuse have contributed immensely by their commitments to fund the research necessary to achieve the current state of the science in the field. There is, however, a huge gap between the dissemination and utilization of research findings. Public ignorance, denial, and social stigma likely contribute to the lag in prevention and intervention program development based on current knowledge. Parents' denial of their children's potential drug involvement may occur in part because of ignorance and stigma. Similarly, the failure to acknowledge gender differences has slowed progress in the development of programs specifically tailored for girls and young women. For example, concern about body image may contribute to early initiation of smoking among young girls, and the evidence clearly shows that the younger the age at initiation, the more likely girls will continue to smoke and also to begin using alcohol and drugs. Thus, public education is a major task to be undertaken.

As college administrators respond positively to the utilization of convincing alcohol use data among college students, policy implementation and enforcement will become major goals. Campus security and community law enforcement personnel can be expected to play a more active role in monitoring, controlling, and deterring alcohol use on college campuses.

Finally, a major research agenda concerning risk and protective factors involving the use of addictive substances pertains to continued examination of the probabilistic nature of these factors. Why do distinct constellations of some risk and protective factors lead to the same outcome in some subgroups of youth, but not in others?

Conclusion

A transactional model of substance use/misuse was used to present known risk factors for the initiation of, and changes in, the use of addictive substances among U.S. youth. Developmental transition theory posits that youth are more vulnerable at the time of transition; therefore, the transitions selected for illustrative purposes were the transition from preadolescence to adolescence and the transition from leaving home to attend college. An analysis and critique of the published literature provides a complex picture of various risk factors that are to be considered. The current literature also shows that substantial progress has been made in linking known risk factors for substance use/misuse with innovative prevention strategies. Nonetheless, much remains to be learned in order to prevent and/or change the use of addictive substances among the nation's youth.

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Current Trends in International Terrorism and Their Implications for Law Enforcement Agencies

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Introduction

The last decade has seen tremendous changes in international terrorism activities all over the world. The recent history of international terrorism attacks, from the World Trade Center to the July 2003 suicide bombing in Moscow, Russia, has activated mass media and expert attention and serves as reminder that international terrorism is not that distant from each and every U.S. citizen. International terrorism is capable of affecting of national and global security.

However, there is definite abuse in the usage of the term *international terrorism* by the mass media, self-proclaimed experts, and various political groups and movements. Despite a tremendous amount of research, international terrorism remains a phenomenon that is not clearly understood, adequately analyzed, or effectively controlled. The limited scope of international terrorism analysis can be explained by mostly political, ideological, and behavioral approaches, which easily can overshadow the real substance of the phenomena. This article focuses on new features and characteristics of international terrorism. It is an attempt to make a contribution to America's ongoing international preparedness effort. It is designed for the law enforcement community, whose representatives often have a tendency to prioritize actions avoiding analysis, implying limitations of agencies' preparedness. The authors hope to demonstrate that the way of defining terrorism as political phenomena could shape the conclusions reached about its characteristics and counter-terrorism implications.

Historical Background

Present-day international terrorism is quite different from terrorist acts of the past, which had been primarily assassinations of political leaders (e.g., monarchs such as Archduke Franz Ferdinand in 1914 or the bombing of the Russian Emperor Alexander II in 1881). There were few acts of terrorism that had triggered such tragic events as the First World War (Glenny, 2001). Modern forms of international terrorism are common-people- oriented, more lethal and suicidal, more ideologically charged, and more technologically advanced. Incidents of international terrorism caused around 1,500 deaths worldwide in the period 1991-1996 (Wilkinson, 2003).

International terrorism has been around throughout the history of man and society. Historical records indicate that nations attempted to employ terrorist methods in warfare long before modern times.

Beginning in 48 A.D., a Jewish sect called the Zealots carried out a series of terrorist acts against the Romans in Judea. They used assassins (sicarii, or dagger-men) and kidnappers to hold other Jews for ransom. The Zealots' justification for their killing of other Jews was that these killings demonstrated to the Roman invaders that they could not protect their Jewish collaborators (Hudson & Majeska, 1999).

There are several epicenters of modern terrorism. Europe is the motherland of modern terrorism. Members of a radical society or Jacobin's Club of revolutionaries promoted the Reign of Terror and other extreme measures and were active mainly from 1789 to 1794 (Schama, 1990). Despite the violent label, French revolutionaries used terror as a remedy for political transformation. One of the original justifications for terror was that man would be totally reformed; one didn't have to worry about the kinds of means one was using because the reconstruction itself would be total, and there would be no lingering after-effect (Henderson, 2001).

Que la Terreur soit L'ordre du jour (Terror: The Order of the Day) (Carlyle, 2002) was designed as a temporary domestic policy oriented on suppression of the enemies of the French Revolution, but it had a lot of international implications for more than two centuries. The original purpose of terror was to eliminate any opposition to the revolutionary Jacobin Regime and to consolidate the power. The latest applications of governmental or state terrorism can be found in Soviet Russia (Civil War, 1918-1921), Communist China (Great Proletarian Cultural Revolution, 1966-1969), Cambodia (Khmer Rouge Regime, 1975-1979), etc.

These early experiments with state or governmental terrorism outlined several important objectives of this method of governing:

	Oppression	Consolidation	Reconstruction	Threat Orientation
France	Monarchy, clergy, aristocracy, and common people	A dictatorship operating through the Committee of Public Safety, the Jacobins	Introducing new rule through the Revolutionary Tribunal	Anyone who disagreed with the Jacobins was a "threat to the Republic"
Russia	Monarchy, clergy, aristocracy, owners, landlords, farmers, intelligentsia, church (20 million deaths)	Power around the Communist Party and Lenin, Dictatorship of proletariat	Introducing communist values and priorities	Anyone who disagreed with the Jacobins was an "enemy to the people"
China	Communist party officials, state leaders, "wrong-headed intellectuals," farmers, intelligentsia (65 million deaths)	Regained control over the Communist Party by Mao Zedong through Red Guards and Cultural Revolution	Destroying "outdated," "counter-revolutionary" values. Reeducating intellectuals through sending them for hard labor	Anyone who disagreed with Mao's group was sent to the countryside.
Cambodia	Owners, entrepreneurs, intellectuals, city dwellers, military and state officials (2 million deaths)	Power around Pol Pot and Angkar (Organization)	"Purify the Khmer race," create classless society	Anyone who doesn't want to be part of Red Khmer society will be exterminated.
North Korea	Communist party officials, state leaders through purges (2 million deaths) (Courtois et al., 2001)	Power around party-state and Kim Il Sung, Kim Jong Il	"Communization"	"Hostile" class; those who were born in South Korea.

In 2002, the U.S. State Department included seven states sponsoring international terrorism: Cuba, Iran, Iraq, Libya, North Korea, Syria, and Sudan. There is very little evidence that Cuba is active in international terrorism incidents. The State Department described Iran as the most active state supporter of terrorism. Iran and Syria continue to support groups such as Hamas and Hezbollah.

From the French revolutionaries who employed the strategies of international terrorism against European countries to Russian terrorists that carried into the 19th and 20th centuries, there was a steady trend to gain political and ideological objectives. This orientation was reinforced by Marxism. Karl Marx (1818-1864) along with Friedrich Engels (1820-1895) developed the communist doctrine of the class struggle, which has been the main agency of historical change. The theory was that the capitalist system, would inevitably, after the period of the dictatorship of proletariat, be superseded by a socialist state and classless communist society. A dictatorship of the proletariat is necessary to ensure the removal of the capitalist society. According to communist doctrine, the dictatorship is above the law because it is a law and should be unlimited. By introducing the First International Working Men's Association of communist organizations in 1864, Marx and Engels launched the idea of international or global socialist revolution employing any means of class struggle including terrorist tactics against dominant classes. The international character of the proletarian revolution was derived from the international development of the capitalist society (Trotsky, 1988).

Russia has a long history of coexisting with political terrorism and lives under fear of terror. According to Leon Trotsky (1909): "individual terror as a method for political revolution is our Russian 'national' contribution."

Russian anarchist Peter Kropotkin promoted the fundamental philosophical basis for utilization of terrorism as the tool for revolution proclaiming the concept "propaganda of the deed." Sergei Nechaev might be called the extremist forerunner of modern Russian terrorism; Dostoevsky used him as a model for the revolutionary protagonist of *The Devils*. He was the father of political terror, which he developed as a revolutionary tool as early as 1869, when he published a *Revolutionary Catechism*.

This trend became even stronger ten years later when the rebel group named itself the People's Will (*Narodnaya Volya*), the name under which the radicals were responsible for the assassination of Alexander II in 1881. The objective of the group was to cause a coup or overthrow the Russian government. They believed that the assassinations would be the trigger for revolution and would finally change the order of the regime.

The Bolsheviks and Lenin inherited terrorist approaches and converted them into the state policy; although, some of the Bolshevik representatives opposed individual terror. The communist state developed two main types of terrorism. First, there was the internal policy of using terror for the benefit of establishing a so-called "dictatorship of proletariat." The goal was to suppress and physically eliminate opposing forces in the country and convince the population to be loyal to the new regime. On September 5, 1918, the Soviet Government officially announced the policy of "Red Terror." Hundreds of thousands died; millions were scared.

Secondly, there was an international terrorism with the goal to cause destruction and chaos, resulting in a world communist revolution. There were many cases of state-supported terrorist actions. Soviet secret police (NKVD-OGPU-KGB) even established a special department, which was in charge of elimination of popular political figures worldwide (e.g., assassination of Leon Trotsky in August 1940).

Stalin developed terrorism as one of the most powerful tools of state policy, but individual and group terrorism were almost unknown under Stalin, Khrushchev, and Brezhnev. Isolated acts of terrorism (i.e., the explosion in Moscow's subway in January 1977) got the state security agencies' (KGB and MVD) attention, and terrorists were arrested and executed almost immediately (Antonyan, Sergevnin, & Zadorskaya, 2002).

About the time of widespread internal terrorist campaign in the form of purges across the Soviet Russian in 1937, the League of Nations developed a convention for prevention and punishment of terrorism, but it never came into effect and was ratified only by India (Morgan, 2001).

Ireland has been one of the longstanding centers of modern terrorism. At the end of 19th century, the Irish Republican Brotherhood (originally formed by Irish immigrants in New York City) had launched a campaign of assassinations and bombing against the British. From the Easter Rising of 1916 emerged the Irish

Republican Army, which was the main political and terrorist organization that pushed the formation of the Irish Free State.

A considerable number of leftist and right-wing terrorist organizations was formed in the late 1960s in Europe, including Germany's Red Army Faction (RAF), France's Action Directe, Italy's Red Brigades, and Germany's neo-Nazism.

The new chapter of international terrorism was opened in the 1960s, when in the Middle East, the Palestine Liberation Organization (PLO) was established, led by Yassir Arafat and its training camps managed by Palestinian groups to fight the war of attrition against the occupying Israeli forces. In 1982, the Soviet Union initiated and sponsored the International Conference of the World Center for Resistance to Imperialism, Zionism, Racism, Reactions, and Fascism, which was held in Tripoli. This meeting resulted in the forming of a committee consisting of Libya, Cuba, Iran, Syria, and North Korea; its goal was the establishment of international terrorist training programs to prepare fighters to battle against all types of oppressors, primary the United States (Holms & Burke, 2001).

In 1999, Islamic justice was established in Chechnya. Terrorism, including a series of bombings in Moscow (several hundred people were killed there), erupted. After that, several thousand Islamic militants, armed members of a Chechen Muslim fundamentalist group whose aim was to merge Dagestan with neighboring Chechnya in a single Islamic state, invaded the Russian Republic of Dagestan. Russia responded with police and military attacks by federal forces, and the militants retreated; the incident contributed to Russia's decision to invade Chechnya later in 1999. International extremist organizations, including Osama bin Laden and other criminal associations, back the Chechen terrorists. The territory of Chechnya is used to host and train terrorists from Arab countries and some Western European countries (Antonyan, Sergevnin, & Zadorskaya, 2002).

In June 2000, the Anti-Terrorist Center of the Commonwealth of Independent States (Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan) was established with the purpose of coordination of counter-terrorism measures on the territory of the former Soviet Union. In November 2001, the main organized crime administration of the criminal police service at the MVD established a special section on fighting terrorism and extremism. National police offices in the seven federal districts have already set up terrorism sections. The officers intend to cooperate with foreign law enforcement bodies in carrying out anti-terrorist activities.

In Search of a Working Definition of International Terrorism

The first recorded meaning of *terrorism* was given in the 1795 supplement of the *Dictionaire of the Academe Francais* as *system regieme de la terror*. The Jacobins used the term when speaking and writing about themselves.

At present, there is no precise or widely accepted definition of international terrorism, or terrorism. Lawyers specializing in international crimes have tried to define international terrorism for nearly a century and have not come to a satisfying consensus. To identify an act as an international terrorist act, there should be legal international agreement on the subject. Without agreement, there will be no adequate

legal definition. The acts of international terrorism can be easily identified by national and international laws as crimes, and can be prosecuted. Currently, the scientific community is dealing with definitions, which are the products of specific sciences (political science, sociology, philosophy, etc.) and could not be used universally. The term *terror* was originated for political purposes and still is in predominantly political usage. There is no surprise that Islamic scholars have agreed in 2002 on a definition of terrorism but excluded Palestinian attacks against Israel from their condemnation in their aim to align themselves with the global movement against terrorism (Dorsey, 2002). But the consensus is in the future. The charter of the International Criminal Court (ICC), ratified by 137 nations, is not yet ratified by 43 nations (including the United States).

Two Dutch researchers from the University of Leiden, Alex Schmid and Albert Jongman (1988) had collected 109 academic and official definitions of terrorism and analyzed them in search for their main characteristics. They found that the element of violence was included in 83.5% of the definitions; political goals in 65%, and 51% emphasized the element of inflicting fear and terror. Only 21% of the definitions mentioned arbitrariness and indiscrimination in targeting and only 17.5% included the victimization of civilians, noncombatants, neutrals, or outsiders.

The last two decades brought the following approaches in analyzing and defining international terrorism.

Political

Political analysis of international terrorism views it as one of instruments in political process or struggle. The Marxist-Leninist ideology and some other radicals' concepts accept terrorism, including international terrorism as a legitimate instrument in class struggle. For Marxist-Leninists, the political goal justifies the means. Political goal is above any law or moral code in modern society. It is not immoral for social revolutionaries to use terrorism because it is led to fulfilling the political goal. At the same time, some Marxists like Trotsky denunciated terrorism as a legitimate remedy in fighting for power.

U.S. governmental institutions are implementing the political approach in analyzing and defining terrorism. Information pertaining to the political definition of terrorism as contained in Title 22 of the United States Code, Section 2656f (d).

That statute contains the following definitions:

- The term *terrorism* means premeditated, politically motivated violence perpetrated against noncombatant targets by subnational groups or clandestine agents, usually intended to influence an audience.
- The term *international terrorism* means terrorism involving citizens or the territory of more than one country.
- The term *terrorist group* means any group practicing or that has significant subgroups that practice international terrorism.

The U.S. Government has employed this definition of terrorism for statistical and analytical purposes since 1983. There are definite limitations of this definition; not all terrorist acts have political motivation. It will exclude those whose motivation

is religious, or personal, and they are not trying to change any political institution in the foreign society.

At the same time, countries with fewer freedoms are more likely to be the birthplace of international terrorists.

Socioeconomic

There is a widespread view that international terrorism is a response—either direct or indirect—to poor socioeconomic conditions and poverty. According to Krueger and Maleckova (2003) poverty and literacy were unrelated to the number of terrorists from a country (Krueger & Maleckova, 2003)

Organizational

An organizational approach to terrorism sees terrorism as an organizational endeavor. In the center of the terrorist organization could be a single leader, group of activists, or political party. The terrorist organization works as effective militarized bureaucracy. This view is close to the group behavior approach. The organizational approach will exclude individual terrorists.

Criminal

The international criminal organizations are utilizing some terrorist approaches. Organized criminal groups of Italian, Colombian, Russian, Chinese, Turkish, Mexican, and Japanese origin have been engaged in terrorist activities. Chechen terrorists are deeply involved with organized crime, getting fake documents, kidnapping people for ransom, and stealing and trafficking weaponry and explosives. The international terrorists with criminal ties will claim that they are not criminals, but freedom (e.g., religion, ideology, special interest) fighters.

Almost all terrorist acts are characterized as criminal violence, which are punishable by criminal justice system of the state. In this case, terrorism is defined as "a *crime*, consisting of an intentional act of *political violence* to create an atmosphere of *fear*" (Terrorism Research Center, 1996).

Militaristic

Several international lawyers see a possible solution to the dilemma of an international terrorism definition in the laws of war analysis. If the laws of war will be applied to terrorists, they will be treated as soldiers who commit atrocities in international armed conflicts (Jenkins, 2003). If this approach will be utilized, then we have to treat our own citizens as people in the war zone to prevent possible terrorist acts. Also, not each terrorist act is an international offense.

Psychological

The psychological approach is not concerned with the political or social contexts of the international terrorist, but in the terrorists' personalities, recruitment, induction, beliefs, attitudes, motivations, and careers. The weak point of this approach is that the analysis isolates the phenomenon from the social and political context

of international terrorism, and there is a slight presumption that international terrorists are born not made.

Group Behavior

Another productive approach describes terrorism as a rational strategy decided by group (Crenshaw, 1990). This approach is rather similar to the political perspective because it requires a collective decision in the utilization of the terrorist tactic in reaching group goals. Group behavior is wider than the political approach because it can include, for example, criminal acts of international terrorism, in which the goals will be not political.

Very often the definitions of terrorism mention only "groups" or clandestine agents as an active core of this type of activity, but in this case, we're excluding state-sponsored international terrorism.

In order to understand international terrorism, one must always assess of what exactly constitutes terrorism and the definition in use. International terrorism or terrorism has to be analyzed as an instrument not a concept.

Multifactor

International terrorism preferably can be viewed as multidimensional phenomena. It would be misleading to analyze it by a single case approach. International terrorism can be attributed to the same type of events as social revolution, revolt, uprisings, and any kind of political, social, ideological, or religious unrest. Terrorism in general, and international terrorism, in particular, is and an instrumental phenomenon, and as a remedy could be utilized for multiple causes, forces, organizations, individuals, etc.

Instrumentalist

Terror is a tactic, instrument, or method. Terrorism is a term describing a method or instrument of utilizing violence, intimidation, threat, and fear on individuals, the populace, and the government(s) in general. It may also describe use of a wide range of force, violence, and brutality with the purpose of manipulating human behavior and illegally reaching goals.

Goals are diverse but can be grouped into the following categories:

- Political – change of regime, overthrow the government, *coup de tat*, damage relations between the countries, disgrace to political system, and so on
- Social – upset social order
- Economic – damage to economic order; upset the budget; interrupt vital supplies, like oil, gas, electricity
- Ethnic and religious – fundamentalist sects, racism, genocide, spread of new beliefs
- Ideological – introducing a system of ideas and concepts
- Personal

It depends on the target (domestic or international) and forces (individual, group, criminal, military, state-sponsored) in categorizing and separating domestic from

international terrorism. Any kind of individual, local, regional, or global player can use it. We have to separate terror as an application of fear for criminal purposes from political terrorism, which has a definite objective in obtaining political power. Application of fear is a universal method in military operations, the criminal justice system (punishment), and so on. Numerous publications describe international terrorism as terrorist acts with international goals, targets, and consequences (Jenkins, 2003; Kegley Jr., 2003), or as acts committed by a group or individual that is foreign-based and directed by countries or groups outside the United States or whose activities transcend national boundaries.

International terrorism in general is a wide range of criminal acts (according to the national law) with focus on use of power, control, violence, domination and destruction or threat of violence and destruction. International terrorism inculcates fear by individuals, organized groups, or states driven by generally ethnic, religious, nationalist, separatist, political (including governing), ideological, mentally deviant, and socioeconomic motivations. International terrorism is a term describing cross-national utilization of fear and intimidation extracting from violence, brutality, and invasion in privacy with the purpose of political, social, economical, ideological, religious, ethnic, cultural change.

Typology of International Terrorism	**Goals**	**Targets**	**Tactics**	**Consequences**
• Social revolutionary • Nationalist-separatist • Ideological • Religious fundamentalist • State sponsored • Organized crime • Military • Left/right extremism	The promotion of religious ideology, religious freedom, economic equality, classless society, income redistributions, nationalism, separatism, ideology (i.e., Marxism), nihilism, racism, and issue-specific objectives	Western society, culture, and religion Foreign governments, public officials, foreign civilians, embassies, businesses, diplomats, military	• Explosive and incendiary bombing • Letter bombing • Car bombing • Suicide bombing • Facility occupation • Armed attack • Sabotage Assassinations • Exotic pollution • Threat • Theft • Break-in Conspiracy • Hoax • Sniping • Shootout with police • Arms smuggling • Armed assaults Kidnappings, barricades, and hostage situations • Insurgency • Hostage taking • Coup d'Etat, • Guerilla warfare • Clandestine networks	Panic Social and political disorder Economic and financial loss Mass media pressure on the governments Impulse for domestic terrorism

The international terrorism act requires the mobilization of political, financial, and industrial resources for the development and production of modern homeland

security and defense. It is much more expensive because instead of solid front, we have unlimited number of potential targets. Terrorism requires more efforts in the political sphere, which can eliminate potential ground for terrorism activity.

Current Trends of International Terrorism

Law enforcement officials around the world have reported a significant increase in the range and scope of international terrorist activity since the early 2000s. It is in contrast with the 1990s when the total number of terrorist incidents worldwide has declined, but the percentage of terrorist acts resulting in fatalities has grown (Hoffman, 1999). The level and severity of this activity and the accompanying growth in the power and influence of international terrorist organizations have raised concerns among governments all over the world—particularly in Western democracies—about the threat terrorists pose to democracy and stability in many countries and to the global economy. International terrorist networks have been quick to take advantage of the opportunities resulting from the revolutionary changes in world politics, business, technology, and communications that have strengthened democracy and free markets, and brought the world's nations closer together.

The end of the Cold War resulted in the shift of political and economic relations not only in Europe but also around the world.

- This change opened the way for substantially increased trade, movement of people, and capital flows between democracies and free market countries and the formerly closed societies and markets that had been controlled by the Soviet Union.

- More countries found themselves under the pressure of one polar democratic, free market, Christian domination. This globalization mega trend has an obvious Western pattern, which is not acceptable for some cultures and powers.

- These developments have allowed international terrorists to expand their networks and increase their cooperation in illicit activities and financial transactions. Terrorists have taken advantage of transitioning and more open economies to establish financial ventures that are helpful in budgeting international terrorist activities: training camps, "sleeping cells," purchase of weaponry and explosives.

- International terrorists have extended their reach by building globe-circling infrastructures. Lebanese Hizballah, whose presence now reaches most of the continents, has led the way. But other terrorist organizations, with agendas as diverse as the Palestinian group Hamas or the Sri Lankan Liberation Tigers of Tamil Eelam, maintain their active presence far from the lands where their objectives are focused (Pillar, 2001).

- Revolutionary advances in information and communications technologies have brought most of the world population closer together. Terrorist networks easily use modern telecommunications and information systems. Sophisticated communications equipment greatly facilitates international terrorist activities including coordination terrorist acts and affords terrorists sufficient security

from law enforcement counter terrorist operations. Through the use of digital technologies international terrorists have an unprecedented capability to obtain, process, and protect information from law enforcement investigations. They can use the interactive capabilities of advanced computers and telecommunications systems to plot terrorist strategies against U.S. representatives and institutions all over the globe, to find the most efficient routes and methods for financial transactions, and to create international virtual networks. Some terrorist networks are using advanced technologies for counterintelligence purposes and for tracking law enforcement operations.

The modern mega trend of globalization and the reduction of barriers to movement of people, commodities, and financial transactions across borders, have enabled international terrorist networks to expand their global reach. International terrorist groups are able to operate increasingly outside traditional models, take quick advantage of new opportunities, and move more readily into the most vulnerable areas of the Western world. The major international terrorist groups globalize their operations and place more threatening goals. Since the end of the Cold War, terrorist groups from Middle Eastern countries have increased their international presence and worldwide networks or have become involved in more lethal terrorist acts.

Ideological Shift

At the end of the 19th and beginning of the 20th centuries, the dominant form of international terrorism was ideologically motivated. Marxism was a dominant basis for terrorist ideology from 1848 to the end of the 1980s). Communist ideology is seeking a global communist revolution through initiating riots, uprisings, and coups against imperialism and "weak bourgeois national governments."

- 1848-1917 is the period when political parties and trade-unions organizations were sponsored by individuals and opposition groups.
- 1917 – the end of 1980s is the period of state-sponsored (mainly Soviet Union and Warsaw Pact states) sponsored ideological "warfare."

International terrorism networking was established through the I, II, III, and IV international and national communist or totalitarian organizations.

The phenomenon of ideologically motivated terrorism brought it to the global stage via bombings and extermination of "enemies of communism" beginning from around 1917, perpetrated by such states as the USSR, and lately by groups as Red Army Faction, Red Brigades, Japanese Red Army, etc. The end of the Cold War has resulted in the shift from anti-Democratic or anti-Capitalist, Marxist-based ideologically motivated international political terrorists to ethnic and religious terrorism. The role of communist ideology is still significant, and old-fashioned "revolutionary" organizations continue to exist, such as the Turkish Revolutionary People's Liberation Party-Front, the Peruvian Sendero Luminoso (Shining Path). The Revolutionary Armed Forces of Colombia (FARC) poses a serious threat to U.S. interests in Latin America (Tenet, 2002).

One of the reasons that ethno-religious type of international terrorism became dominant recently is the globalization of Western type of economy and culture in traditionally culturally and economically endemic countries, such as the Middle

East and Asia. International terrorism has an anti-American, anti-Western trend because these countries view the spread of "global Western economy and culture," an increasing U.S. presence in the Middle East (Israel, Iraq, Afghanistan) and Pacific Rim, Western development of the Caspian oil reserves (Uzbekistan, Kazakhstan, Azerbaijan), and flourishing Western technological development in the Middle East and Pacific Rim as threats to their powers and traditional methods of government. Not surprisingly, many international terrorist organizations are state-sponsored. The spread of ethno-religious ideology is a basis for international terrorism based on ethno-religious conflicts in the Caucasus, Balkans, Middle East, South Asia, and central Africa. Ethno-religious ideological activities are very often state-sponsored, which gives them more informational stability and coordination. Ethnic ideology is dealing with ethnic identity, solidarity, self-determination, and domination. Religious ideological activities are usually oriented toward establishing "pure and the only true religion" aiming to spread certain beliefs and defeat modern, Western ideology. Very often the destruction of American and Western values in general and the establishment of true religious order worldwide is the main goal of these ideological activities. Terrorism that is religiously motivated is growing quickly, increasing the number of killings and reducing the restraints on mass indiscriminate murder. For religious, as for social revolutionary terrorists, violence is morally justified and legitimate. Islamic terrorists see themselves as holy warriors in a total war against the enemies of the faith. They are trying to promote the notion that it is the duty of every Muslim to participate in *jihad* in order to launch an Islamic revolution and complete transformation of the society. These ideas are not different from communist or nazi approaches throughout last century.

Organizational Shift

There are three basic organizational levels of international terrorism:

1. Individual international terrorism often has criminal motivation (e.g., revenge, intimidation, and any other personal motives). It is similar to organized crime activities. It is difficult to detect this form of terrorist.

2. Group terrorism requires some form of organization and some type of leadership, recruitment, training, and retention of members.

3. State terrorism is one of the political tools utilized by a government, which establishes a specific agency or uses a legitimate state institution for gaining domestic or international benefits for the regime.

The current shift in the organizational sphere is increasingly from state-sponsored international terrorist activities to groups of terrorists. The process of decentralization of international terrorism was initiated by several factors. Religious groups have a different agenda than the state institutions. In global politics and economy, it is a disadvantage for the states to associate themselves with terrorist activities. Libya and Iraq are strong examples of governments that made all possible efforts to disassociate with terrorist incidents. In May 2002, Libya had offered to pay $2.7 billion in compensation for the Lockerbie bombing and tied the money to the lifting the U.S. and United Nations sanctions. Libya continues to deny involvement in the explosion, which downed Pan Am flight 103 in 1988 and killed 259 passengers and crew along with 11 Lockerbie residents. Sponsors of the international terrorism

state prefer to support these "isolated" groups by almost untraceable methods. In November 2002, the FBI was investigating whether a charitable contribution by Saudi Princess Haifa al-Faiasl, wife of Bandar bin Sultan, the Saudi ambassador to the United States, may have indirectly benefited two hijackers of the September 11, 2001 terrorist attack.

International groups maintain a structure with defined leadership-subordinate roles, through which the group's objectives are achieved. Recently, because more groups are based on religious motives and may lack political or nationalistic agenda, they have less need for hierarchical structure. International terrorist groups have a tendency to rely on loose affiliations with like-minded groups in different countries (Countering, 2000).

International terrorist groups cannot rely on open sponsorship from the state agencies and turn more to involvement with international and domestic organized crime syndicates and self-financing. International terrorist groups are more isolated and loosely organized than in the past; when under the influence of Soviet Block sponsorship, they were more or less interconnected and had centralized structure. With the creation of widespread terrorist networks, terrorist assistance has become more important in the overall system of terrorism. Main variations of this assistance are extremist groups financing and providing the means for terrorism, providing facilities for training their members, and harboring and hiding them after committing terrorist acts. This assistance can be used by various so- called terrorism sponsors as well as by representatives of business circles and ethnic and other social groups that express sympathy to terrorist organizations or support them because of their common interests or direct involvement with extremist organizations in conducting tasks of legal political institutions to influence their enemies. In most cases, international terrorist groups have a high level of organizational stability and do not depend on the continuing participation of one or a few individuals for their existence.

As hierarchy, al Qaeda is organized with bin Laden, the emir-general, at the top, followed by other al Qaeda leaders and leaders of the different groups. Horizontally, it is integrated with 24 constituent groups. The vertical integration is formal; the horizontal integration is informal. Immediately below bin Laden is the Shura Majlis, a consultative council. Four committees report to the Shura Majlis: (1) military, (2) religious-legal, (3) finance, and (4) media. Members of these committees conduct special assignments for bin Laden and his operational commanders. Operational effectiveness at all levels is reached by compartmentalization and secrecy. While the organization has evolved considerably since the United States embassy bombings in Africa in 1999, the basic structure of the consultative council and the four committees remains intact (Spindlove, 2002).

Geographical Shift

Geographical focus of international terrorist activity is changing. From 1970 to 1986, the highest percentage of international terrorism episodes occurred in Western Europe (27-37%) and Latin America (15-26.5%). In 1980-1987, there was a considerable shift to the Middle East (from 16.1% in the 1970s to 32% in the 1980s) (Jongman, 1992). There is more terrorist activity in South Asia (Veness, 2001). International terrorism

gained a global character with a definite accent on Middle Eastern terrorism. There are two factors that are fueling Middle Eastern terrorism:

1. The failure of the peace process around Israel and Palestine conflict
2. American political, military, and economic hegemony since Cold War was over

These factors put a lot of pressure on governments, political groups, and people of the region, which find expression in the act of international terrorism.

Tactical Shift

In the past, international terrorism consisted of more single assassinations and hostage situations. Airline hijackings have become unpopular among international terrorists because few countries will let them land, and chances are very high that they will be deported back to the country where the international terrorist incident was originated. Only 19 states have extended their support to include asylum to aviation hijackers (D'Arcy, 2002).

According to the U.S. State Department, the number of international terrorist attacks in 2001 declined to 346, down from 426 the previous year.

	1996	1997	1998	1999	2000	2001
Incidents	296	304	274	395	426	346
Casualties	3225	914	6694	939	1205	4655

A total of 3,547 persons were killed in international terrorist attacks in 2001. In 2000, 409 persons died in terrorist attacks (Patterns of Global Terrorism, 2002). International terrorism has become more lethal. Most of the international groups are turning to indiscriminate killings of civilians. In the 1990s, a terrorist incident was almost 20% more likely to result in death or injury than an incident two decades ago (Countering, 2000). At present, it is more destructive and seeks mass causalities and tremendous loss of property as well as financial and economic downfall.

International terrorist missions became more suicidal. In the past, terrorist groups did not exclude the possibility of become a victim of counter-terrorist security measures. At present, terrorist groups are recruiting young volunteers to carry out violent acts. It is much harder to deal with these kinds of terrorist because they don't value human life. Some of the law enforcement tactics in these cases will not work.

Most international terrorist groups have shifted to the following tactics:

- Random attacks on military and diplomatic installations
- Random attacks on tourists and the deliberate killing of foreign-aid workers
- Incidents of kidnapping, hostage-taking, and bombing of apartment buildings (frequent in the republics of the former Soviet Union)
- Terrorist attacks on economic infrastructures, including energy distribution, transportation, banking and tourism (routine in Colombia)
- Bomb threats

Typically, international terrorist groups are utilizing more than one method of violent acts.

Technological Shift

From relatively primitive means of technology (e.g., guns, explosives, and conventional weaponry), international terrorism shifted to highly sophisticated technologies, including weapons of mass destruction and chemical and biological weapons. According to the State Department, Iran, for instance, has been aggressively seeking a nuclear arms capability (Lee & Perl, 2003). North Korea decided in December 2002 to restart nuclear installations at Yongbyon that were shut down under the U.S. – North Korea Agreed Framework of 1994. Three atomic reactors will be able to produce 207 kilograms of plutonium annually, which is enough to manufacture nearly 30 atomic bombs per year (Niksch, 2003). For many years, international terrorism analysts did not believe that the terrorists were willing to use weapons of mass destruction, but present-day reality shows that religious extremists or sects with messianic or apocalyptic mindset have a tendency to use weapons of mass destruction. Such religious groups as al Qaeda and Aum Shinrikyo are inclined to use equivalents of weapons of mass destruction to eliminate anyone who doesn't belong to these groups. The September 11, 2001 attack by al Qaeda and sarin attack on the Tokyo (Japan) subway system on March 20, 1995 by Aum Shinrikyo demonstrated this new shift in the utilization of new terrorist technologies.

This tendency to utilize unconventional weapons shows the international terrorism asymmetry—the usage of unconventional weapons against the expected conventional weapons. This shift requires in many instances the development of connections with the arms dealers or those who can manufacture arms (e.g., connections of the Chechen terrorists with machine gun manufacturers in Kovrov, Russia). International terrorism groups are involved in organized crime activity including weapons smuggling.

Organized Crime Shift

One of the more significant shifts since the early 1970s has been the growing involvement of organized crime groups with terrorist organizations. For example, . . .

- In Peru, from the late 1980s until the early 1990s, the extremist Sendero Luminoso insurgents profited from protecting coca fields and extorting drug traffickers operating in the Andean region they controlled.

- In Western Europe, members of the terrorist Kurdistan Workers' Party (PKK) in Turkey have engaged in drug trafficking and other crimes to help finance local operations.

- In Colombia, since the late 1980s, Marxist insurgents have not been able to rely on financial support from Cuba and Russia. Some insurgent fronts of the Revolutionary Armed Forces of Colombia (FARC) and the National Liberation Army (ELN) generate substantial revenue by taxing and protecting coca cultivation, cocaine processing, and drug shipments in the areas they control. The U.S. Government estimates that the FARC may earn as much as half of its

revenue from involvement in the Colombian drug trade. (International Crime, 2000)

With the substantial decline in state-sponsored international terrorism support, many terrorist networks reach out to criminal networks to acquire arms and supplies that cannot be obtained through more traditional or legitimate channels. International organized criminal groups are well connected to outside gray arms merchants, transportation coordinators, money launderers, and other specialists who can provide the weapons and other logistics support once given by state sponsors. International organized crime groups cannot exist without corrupt contacts in law enforcement agencies, which are crucial in smuggling operations of weapons and other contraband terrorist groups.

Publicity Shift

Almost all international terrorist groups are seeking publicity to promote themselves, their agenda, and discrediting those in opposition to them. International terrorist groups are highly motivated to publicize every act of terrorism in order to show the state's inability to control the terrorist activities. The propaganda of terrorism is connected with attempts to gain public approval of a terrorist activity as a form of political fight, with substantiation of its legal use and also with direct initiative calls to terrorist activities, which may lead to real commitment of criminal actions and involve separate individuals or groups committing severe violent crimes. These appeals are realized verbally or by distributing written or visually demonstrative materials.

Financial Shift

Financial support to international terrorist groups comes from many sources, including state sponsorship, organized crime, and drug and human trafficking. Most Marxist and leftist terrorist organizations are suffering now from lack of funding because of the disintegration of the USSR and Warsaw Pact countries. As was mentioned above, international terrorists' funding and logistical networks cross borders, are less dependent on state sponsors, and are harder to disrupt with economic sanctions.

Funds can be moved to terrorists in many ways. It can be done through financial institutions like banks via secret accounts. For example, half of the 15,000 accounts of Clearstream Clearinghouse in Luxemburg are unpublished. This institution is suspected of moving Osama bin Laden's money. Among the international banks with the most secret accounts are Citibank (271), Barclays (200), Credit Lyonnais (23), and the Japanese company Nomura (12). Also there are 2,000 investment companies, banks and subsidiaries of banks—mainly British, German, American, Italian, French, and Swiss—with unpublished accounts (Komisar, 2001). Western Union and similar businesses are able to send money worldwide in 15 minutes and no bank account, background check, or ID is required to send less than $1,000. According to the U.S. Treasury, al Qaeda, Hamas, and other terrorist groups use Muslim charities for financial transactions. Holyland Foundation charity of Richardson, Texas, has been used to support the families of Arab suicide bombers on the West Bank affiliated with Hamas (Frank, 2002).

Terrorism Prevention

It is not realistic to eliminate international terrorism or to control it, but it is possible to reduce opportunities for terrorists. For this purpose, it is not enough to just improve anti-terrorism legislation to solve the problems created by terrorism globally.

The most effective prevention is early local prevention. Today, the U.S. government focuses on several main activities, which can promote terrorism prevention strategies and tactics:

1. Analyze, localize, and minimize those social, political, financial, and other factors, which create fertile ground for international terrorism.

2. Implement programs that reward individuals for information that leads to terrorists.

3. Launch an information campaign designed to disclose the criminal and violent nature of terrorist groups and organizations. Build public awareness about the legal consequences of participation in any activities related to terrorism.

4. Develop public safety programs to protect vulnerable objects and locations.

5. Enhance community participation in "terrorist watch" programs.

6. Improve intelligence by increasing the cooperation between law enforcement agencies worldwide.

7. Improve training for security forces by developing realistic anti-terrorist action scenarios and organizing regular exercises for security forces and citizens.

8. Foster coordination between security forces and communities on the basis of model local, state, and federal plans of responding to terrorist attacks.

9. Develop a general policy of covering terrorism through the mass media. Legal issues of mass media participation in anti-terrorism activities have not been thoroughly illustrated. (Antonyan, Sergevnin, & Zadorskaya, 2002)

Conclusion

Modern international terrorism is a global threat to civilization and humanity. International terrorists have proven that they have no ethical or moral limits. The value of human life is alien to them. International terrorism knows no bounds and can only be prevented by cooperative global efforts of democratic countries.

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The United States Death Penalty/ Execution System: A Peculiarly Southern Institution

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The United States has a death penalty/execution system, which is very regionally biased. This is shown by the fact that over 80% of all U.S. executions have occurred in southern states since 1976 even though those states make up only 36% of the total United States' population. This regional imbalance is accurate, even going back in the distant U.S. history of the death penalty and executions from 1608 to 1976 (citations to above figures contained later). This article will examine the background and specifics of this phenomena and attempt to determine the reason for this bias in imposing this most permanent of punishments. Constitutional issues will be addressed and possible solutions offered.

Regional Death Penalty Information

First of all, let's delineate and define the various U.S. jurisdictional regions that will be analyzed. According to the United States Department of Justice, its Bureau of Justice Statistics and the United States Census Bureau, there are four regions: (1) the Northeast, (2) the South, (3) the Midwest, and (4) the West (U.S. Census Bureau, 2002). Fifty of the 53 jurisdictions are states; others include the federal jurisdiction, the U.S. military jurisdiction, and the District of Columbia.

Table 1
Jurisdictions by Region in the United States

Northeast	South	Midwest	West
1. Connecticut#	1. Alabama	1. Illinois@	1. Alaska*
2. Maine*	2. Arkansas	2. Indiana	2. Arizona
3. Massachusetts*	3. Delaware@	3. Iowa*	3. California
4. New Hampshire#	4. Florida	4. Kansas#	4. Colorado
5. New Jersey#	5. Georgia	5. Michigan*	5. Hawaii*
6. New York#	6. Kentucky	6. Minnesota*	6. Idaho
7. Pennsylvania	7. Louisiana	7. Missouri	7. Montana
8. Rhode Island*	8. Maryland@	8. Nebraska	8. Nevada
9. Vermont*	9. Mississippi	9. North Dakota*	9. New Mexico
	10. North Carolina@	10. Ohio	10. Oregon
Other	11. Oklahoma	11. South Dakota#	11. Utah
1. Federal	12. South Carolina	12. Wisconsin*	12. Washington
2. U.S. Military#	13. Tennessee		13. Wyoming
3. Dist. of Columbia*	14. Texas		
	15. Virginia		
	16. West Virginia*		

*currently does not have a death penalty

#currently has a death penalty but has not executed anyone since 1976

@currently has a death penalty but now under moratorium

The population make-ups of the various state jurisdictions are as follows: the Northeast makes up 19% of our total United States population of 281 million (U.S. Census Bureau, 2002a; Snell, 2001). The South makes up 36%; the Midwest makes up 23%; and the West makes up 22%. The District of Columbia has a little over one-half million people. In looking at these jurisdictions and the various total executions since 1976, the reader should refer to Table 6. An interesting note is that the Federal Jurisdiction has executed only three persons since 1976, one being Timothy McVeigh in 2001, and the U.S. Military has executed no one (DPIC, 2002b; Snell, 2001).

In summary of the various regions and jurisdictions, the United States has 53 different criminal jurisdictions, of which 19 have not conducted an execution since 1976. Four other states' executions are currently under a moratorium.

Execution Background in the United States Prior to 1976

Some background is necessary on the history of the death penalty in the United States in order to understand the relevance of the 1976 date in measuring execution figures. The most accurate historical study of the history of United States' executions is entitled *Executions in the United States, 1608-1987: The Espy File* (Schneider & Ortiz Smykla, 1991). The original study, referred to as *The Espy File,* was based on an original work by M. Watt Espy and John Ortiz Smykla, which went back to 1608, in search of establishing the number of and information on documented executions in the United States. Obviously, the earlier executions are of more questionable veracity due to difficulty in documentation. According to *The Espy File,* there were 14,460 executions in the United States from 1608 through 1976 (Schneider & Ortiz Smykla, 1991, p. 6). This study did a number of breakdowns of those figures, one of them being executions on a yearly, or "groups of years" basis.

Table 2
Executions in the United States from 1608-1976

Years	Total Executions	Average Executions Per Year
1608-1799	1553	8.1
1800-1865	2453	37.2
1879-1879	825	58.9
1929-1929	5763	115.2
1939-1939	1676	167.6
1949-1949	1284	128.4
1959-1959	715	71.5
1969-1969	272	27.2
1970-1976	0	0
Totals		
1608-1976	14,460	39.2

The decade of the 1930s had the highest number of executions in one year being 199.

Looking at some relevant statistics on those executed up through 1976 in the United States, the following is illustrated: 357 women had been executed (0.025% of total),

with 281 of them prior to 1865. Of those executed, in this time period, 47.7% were white; 45.7% were black; and 6.6% were other races (Schneider & Ortiz Smykla, 1991). The population of blacks in the United States during most of this time period was less than 10% of the total population (DPIC, 2002d, 2002h; U.S. Census Bureau, 2002a).

The figures from the distant United States' history of executions (1608-1976), according to the *Espy Files,* indicate that nearly 55% of all executions took place in the southern states or southern regions (Schneider & Ortiz Smykla, 1991).

U.S. Supreme Court Death Penalty Case Background: 1972-1976

Executions in the United States slowed dramatically in the 1960s, until they actually ceased in 1968. There seemed to be an anticipation of the United States Supreme Court ruling on the constitutionality of the death penalty. This was also coupled with the perception that public support for the death penalty had dropped below 50%. Between 1957 and 1972, 11 states abolished the death penalty by legislation (Zimring & Hawkins, 1986). Additionally, there was an unofficial moratorium on executions in the United States from 1968 through 1976, when no one was executed (DPIC, 2002b). In 1972, California declared the death penalty unconstitutional, and, as a result, the United States Supreme Court felt the pressure to decide the death penalty issue from a national perspective. California, at the time, had the largest number of death row inmates in all of the United States. In 1971, there were 642 inmates on death row in the United States, and nearly one-half of them were in California (Woodward & Armstrong, 1979).

As a result, the United States Supreme Court decided the case of *Furman v. Georgia*, 33 L.Ed.2d 346 (1972). This decision was heralded, by some, as the end of the death penalty in the United States, since the Court decided, in a 5 to 4 decision, that the death penalties of two states, Georgia and Texas, were unconstitutional. The *Furman* case was actually three cases, all involving black defendants. Gregg was convicted of murder in Georgia and given the death penalty. A defendant from Georgia, named Jackson, was given the death penalty for rape, and a defendant from Texas, named Branch, was given the death penalty for rape. In reality, however, *Furman* was a decision in which all nine justices wrote differing opinions on their individual positions and beliefs on the death penalty and its constitutionality. The majority justices in *Furman* based their decision on the constitutionality as follows:

- Justice Douglas believed that the death penalty discriminated against defendants on the basis of race, religion, wealth, social position, or class.
- Justice Brennan believed that the death penalty was arbitrarily inflicted on defendants.
- Justice Stewart believed that the imposition of the death penalty was totally random.
- Justice White believed that it was impossible to determine why the death penalty was imposed in some cases and not in others.
- Justice Marshall believed that the death penalty was always a cruel and unusual punishment whenever imposed.

The reaction of the various states and other jurisdictions to the *Furman* decision was surprising, in light of what was perceived as a growing lack of support for the

death penalty. Eight jurisdictions maintained their "no-death penalty" position; three jurisdictions abolished the death penalty; and three jurisdictions had their death penalties declared unconstitutional by their courts. Thirty-eight jurisdictions, however, passed new death penalty legislation, hoping to meet what they perceived as the guidelines for a valid death penalty, as set out in one of varying opinions contained in *Furman* (Woodward, 1979).

The unofficial moratorium on the death penalty continued in the United States through 1976. After *Furman*, all inmates on death rows in the United States had their sentences commuted to life; however, with the passing of new death penalty statutes, the build-up of death row inmates began anew in 1972, as new convictions occurred and the death penalty was imposed. When the United States Supreme Court decided another series of death penalty cases in *Gregg v. Georgia,* 49 L.Ed.2d 859 (1976), there were nearly 500 new inmates on death row in the United States (Bowers, 1984). The United States Supreme Court had nearly 50 different death penalty cases from many jurisdictions pending, when they carefully orchestrated their decision in *Gregg*. The statutes looked at were from Georgia; Texas [*Jurek v. Texas,* 49 L.Ed. 2d 929 (1976)]; North Carolina *[Woodson v. North Carolina,* 49 L.Ed. 2d 944 (1976)]; Louisiana *[Roberts v. Louisiana,* 49 L.Ed. 2d 974 (1976)]; and Florida [*Proffitt v. Florida,* 49 L.Ed. 2d 913 (1976)]. They were each a little different in how and when the death penalty would or could be imposed, and they exemplified the various types of death penalty statutes passed after *Furman.* By a 7-2 vote, the United States Supreme Court upheld the constitutionality of the Georgia, Texas, and Florida statutes. By a 5-4 vote, the Court said that the statutes in North Carolina and Louisiana were unconstitutional. The basic factor in deciding the constitutionality of the statutes, according to the Court, was whether the statutes contained separate sentencing trials/hearings on the issue of imposition of sentence after there was a finding of guilt to the offense that was death-penalty-eligible. The Court set guidelines for juries, with the hopes of removing the arbitrariness present in cases/statutes before *Gregg*.

Modern Day Execution Information

The various jurisdictions then began slowly executing prisoners on death row. In 1977, there was one execution, and that was the first since 1968 in the United States. Gary Gilmore was executed in Utah. He requested to be put to death. There were no executions in 1978. There were two executions in 1979, with John Spenkelink being the first nonvolunteer to be executed after the unofficial moratorium. He was electrocuted in Florida on May 25, 1979. There were no executions in 1980, one in 1981, and two in 1982. After that, executions began to slowly pick up in number, with rather large increases beginning in 1995, as shown in Table 3 (DPIC, 2002b; Snell, 2001):

Table 3
Total Yearly Executions in the United States from 1983-7/31/2003

1983–5	1988–11	1993–38	1998–68	2003 (thru 7/31/03)–49
1984–21	1989–16	1994–31	1999–98	
1985–18	1990–23	1995–56	2000–85	
1986–18	1991–14	1996–45	2001–66	
1987–25	1992–31	1997–74	2002–71	

So to date, there have been a total of 869 executions in the United States since they were reinstituted in 1977 (DPIC, 2002b, 2002c). The United States has averaged a little over 32 executions per year since 1976. However in the last six years, since 1997, the United States as averaged over 77 executions per year.

Table 4 breaks down the executions per decade since 1976.

Table 4
Executions in the United States from 1977-7/31/2003

Years	Total Executions	Average Executions Per Year
1977-1979	3	1.0
1980-1989	117	11.7
1990-1999	478	47.8
2000-7/31/2003	271	75.3
Totals		
1977-7/31/2003	869	32.7

Some statistics on those executed since 1976 are as follows: ten women have been executed (1.2% of all executions); 22 juveniles, all male (below 18 when murder committed) have been executed (2.6% of all execution); 493 were white (57%); 298 were black (34%); 56 were Hispanic (7%); and 26 were Other (Native American, Asian, Iraqi) (2.4%). One hundred and eighty black defendants were executed for killing a white victim; 12 white defendants were executed for killing a black victim. The average stay on death row before being executed was approximately ten years. In 1990, 30% of those executed were black; whereas, in 2000, 40% of those executed were black (DPIC, 2002b, 2002d, 2002g, 2002h). The population of blacks during this time period was around 12% of the total U.S. population (U.S. Census Bureau, 2002a).

The number of executions per decade from the 1930s to current is relevant. This is summarized in Table 5:

Table 5
Executions in the United States per Decade Since 1930

Decade	Total Executions	Average Executions Per Year
1930-1939	1,676	167.6
1940-1949	1,284	128.4
1950-1959	715	71.5
1960-1969	272	27.2
1970-1979	3	0.3
1980-1989	117	11.7
1990-1999	478	47.8
2000-7/31/2003	271	75.3
Totals		
1930-7/31/2003	4,816	65.4

Some related information on inmates currently on death row in the United States are as follows: there are currently 3,692 inmates on death row; 83 are juveniles, all male and 46% black (2.2% of all on death row); 52 are women, of which 36% are black (1.4% of all on death row); 1,662 are white (45%); 1,600 are black (43%); 347 are Hispanic (9%), 82 are Others (2%). In 81% of the cases of those inmates on death row, the victims were white; whereas, nationally, only 50% of all murder victims are white (DPIC, 2002a).

With the above facts in mind, let us look at the breakdown by region of the country. Since 1976, there have been 869 executions in the United States (from 1976–7/31/03), the so-called modern era of executions. Of those 869 executions, 710 (nearly 82%) have been carried out in the southern states. The Midwestern states have accounted for 92 executions (11%). The western states have performed 59 executions (7%). The Northeastern block of states has accounted for three executions (0.4%). The federal system has had three executions (0.4%). The number one state for the number of executions is Texas. That state, alone, has accounted for 309 executions or 36% of all executions in the United States The second place state for total numbers of executions since 1976 is Virginia, and it has had 88 executions (10.4 %) (DPIC, 2002b, 2002c, 2002i; Snell, 2001). Nine of the top ten states for executions since 1976 are southern states and the other state, Missouri, while listed as a Midwestern state, can be considered a southern-border state (DPIC, 2002c, 2002i; Snell, 2001).

As indicated earlier from census statistics, the southern states account for 36% of the U.S. population; however, they also account for nearly 82% of all executions in the United States since 1976. In other words, more than four out of five of all executions occur in a southern state. If we take just the state of Texas, which is the second most populated state with 20.8 million people or 7.4% of the total U.S. population, it accounts for 36% of all executions or over one-third of all executions in the United States. Table 6 sets out an individual breakdown of executions per jurisdiction since 1976.

Table 6
Executions in the United States from 1976 – 7/31/2003
(By State Or Jurisdiction)

1. Texas (S) – 309
2. Virginia (S) – 89
3. Oklahoma (S) – 68
4. Missouri (MW) – 60
5. Florida (S) – 56
6. Georgia (S) – 33
7. South Carolina (S) – 28
8. Louisiana (S) – 27
9. Alabama (S) – 26
10. Arkansas (S) – 25
11. North Carolina (S) – 23
12. Arizona (W) – 22
13. Delaware (S) – 13
14. Illinois (MW) – 12
15. Indiana (MW) – 11
16. California (W) – 10
17. Nevada (W) – 9
18. Ohio (MW) – 8
19. Utah (W) – 6
19. Mississippi (S) – 6
21. Washington (W) – 4
22. Pennsylvania (NE) – 3
22. Maryland (S) – 3
22. Nebraska (MW) – 3
22. U.S./Federal System – 3
26. Kentucky (S) – 2
26. Oregon (W) – 2
26. Montana (W) – 2
29. Tennessee (S) – 1
29. Colorado (W) – 1
29. Wyoming (W) – 1
29. New Mexico (W) – 1
29. Idaho (W) – 1

States/Jurisdictions with a Death Penalty That Have Not Executed Anyone Since 1976

1. Connecticut (NE)
2. Kansas (MW)
3. New Hampshire (NE)
4. New Jersey (NE)
5. New York (NE)
6. South Dakota (MW)
7. U.S. Military

States/Jurisdictions Without a Death Penalty

1. Alaska (W)
2. District of Columbia
3. Hawaii (W)
4. Iowa (MW)
5. Maine (MW)
6. Massachusetts (NE)
7. Michigan (MW)
8. Minnesota (MW)
9. North Dakota (MW)
10. Rhode Island (NE)
11. Vermont (NE)
12. West Virginia (S)
13. Wisconsin (MW)

States with Execution Currently Under Moratorium

1. Delaware
2. Illinois
3. Maryland
4. North Carolina

If we add the overall figures for executions from 1608 to current date, the South has accounted for over 55% of all executions in the United States, totaling 15,326 documented executions since 1608 (DPIC, 2002c, 2002i; Schneider & Ortiz Smykla, 1991; Snell, 2001).

Regarding the states that currently have an actual death penalty, 15 of the 16 or 94% of the southern states have a death penalty. Eleven of the 13 (85%) western states have a death penalty. Seven of the 12 Midwestern states or 58% have a death penalty. Four of nine (55%) of the northeastern states have a death penalty (DPIC, 2002i).

Regarding the states that currently have actually executed a person since 1976, 94% of southern states have; 85% of western states have; 50% of Midwestern states have; and 11% of northeastern states have. The western states' figure is somewhat misleading

since nine of the 13 western states with a death penalty have only executed a total of 27 persons since 1976 (DPIC, 2002i; Snell, 2001).

Let's look at current death row statistics on a regional basis: 1,980 persons on death row are in the southern states (53.5% of total 3,697); 916 persons on death row are in the West (24.7%); 503 persons on death row are in the mid-western states (13.6%); 272 persons on death row are in the northeastern states (7.4%); 26 persons are on death row in a federal jurisdiction (0.7%); and seven are on death row in United States military jurisdictions (0.2%) (DPIC, 2002a).

Since 1973, 105 innocent death row inmates have been exonerated and released. Over 60%, or 61 persons exonerated, were from southern states. Of those exonerated, 45 were white; 46 were black; 12 were Hispanic; and two were others. It should also be noted that from 1977 to 2000, 6,588 persons were placed on death row in the United States. Only 10% of those have been executed, and nearly 35% were never executed and removed from death row, mainly because their sentences were changed or commuted because of appeals or pardon boards' or governors' actions (DPIC, 2002f; Snell, 2001).

Future Scheduled Executions

What does the immediate future of executions tell us about who will be executed and where they will be from? According to the upcoming execution list for 2003 after May 2, 2003 (through 12/10/03), which is a tentative list, there are ten executions currently scheduled. Four of those ten executions are from Texas and one each from Oklahoma, Indiana, Alabama, Florida, Tennessee, and Missouri. Two of those ten are volunteers. Additionally, there are four other scheduled executions in this period that are stayed; one each from Ohio, North Carolina, Texas, and Wyoming. Eight of the ten (80%) of the scheduled executions are from southern states (DPIC, 2002k).

Possible Explanations of Regional Disparity

What are some of the possible explanations for this huge disparity regarding the regions where executions are taking place in the United States? One might be that the death-penalty-eligible crimes committed in the southern states are more heinous and vicious than those committed in other areas of the country. We do not need to appoint a commission to study this to disprove that theory. One needs only apply common sense. Surely, the death-penalty-eligible offenses committed in Texas or the South, in general, are not any more heinous or vicious than those committed in California, Illinois, New York, or any specific region of the United States, for that matter.

Another theory might be that the death penalty acts as a deterrent to violent crimes, especially murders, and that the southern states are merely following this punishment concept, in order to deter others. Morgan Quitno Press publishes a compilation of nationwide crime statistics, entitled *Crime State Rankings-2002* (Morgan & Morgan, 2002). In this book, the editors rank the "most dangerous states" by using factors, which include murder rates, rape rates, robbery rates, aggravated assault rates, burglary rates, and motor vehicle theft rates from the year 2000. These rates are weighted equally and are based on a "per 100,000 population" figure for each state. The ten most dangerous states in the United States for this year are: (1) Louisiana,

(2) Florida, (3) New Mexico, (4) Maryland, (5) Arizona, (6) Tennessee, (7) Nevada, (8) South Carolina, (9) Michigan, and (10) Illinois (Morgan & Morgan, 2002, p. iv). Five of those states are southern states with a death penalty. Nine of those ten states have a death penalty, with Michigan being the only one without the death penalty. Texas ranked 14th on this list. Of the bottom ten states on this list, seven of the ten do not have the death penalty (Morgan & Morgan, 2002, p. iv).

Looking specifically at *Morgan Quinto*'s figures on murder rates. The national average murder rate per 100,000 of population is 5.5. The top ten states/rates in the murder rate for the year 2000 are (1) Louisiana – 12.5; (2) Mississippi – 9.0; (3) Maryland – 8.1; (4) Georgia – 8.0; (5) Alabama and New Mexico – 7.4; (7) Illinois and Tennessee – 7.2; (9) Arizona and North Carolina – 7.0. Of this top ten list, seven of the ten are southern states with a death penalty; two states are western states with a death penalty; and one state is a mid-western state with a death penalty. Texas ranks 17th, with a 5.9 per 100,000 murder rate (above the national average). In looking at the bottom ten states of this list, five of the states do not have a death penalty; one other has never used the death penalty, and the other four are western states with a death penalty, but have only executed a total of 13 people since 1976 (Morgan & Morgan, 2002, p. 328). Obviously, the death penalty is not a deterrent to violent crime or, in particular, murder, in the southern states.

It is the opinion of this author that the real reason behind the skewed execution and race figures, as related to southern states, is that there is a "dark" vestige of racial bias left over from the slavery days of nearly 200 years ago. As set out in Professor Baldus's study in the U.S. Supreme Court case from Georgia of *McCleskey v. Kemp*, 95 L.Ed. 2d 262 (1987), a black person who kills a white victim has nearly a five times greater chance of being executed than a black person who kills a black person or a white person who kills a white or black person. The United States Supreme Court, while indicating that Baldus's statistics were accurate, held that, since McCleskey could not show that the historical death penalty/execution statistics in Georgia specifically applied in his case (an impossible burden), his conviction and the imposition of the death penalty was affirmed.

Current Position of United States Supreme Court

This author has always believed that the United States Supreme Court, when all else fails, is the ultimate "determiner/corrector" of failed or failing government law enforcement procedures or criminal sentences, when those procedures or sentences violate constitutional guidelines. They, historically, have seemingly always done so, even when deemed unpopular from an overall citizen or state viewpoint. They are the ultimate protector of the individual in our criminal justice system!

The United States Supreme Court has, however, consistently refused to look at the "real issues" connected with the death penalty/executions system by stating that the death penalty and its usage is, either, a public opinion issue since the majority of states, through their legislatures or their individual citizens favor a death penalty, or a federalism issue, maintaining that the death penalty is an individual state's rights issue.

Possible Solutions and Constitutional Issues

If the Supreme Court of the United States wants to use a "public opinion" basis by which to look at the death penalty/execution system in the United States, there is a good argument that public opinion is not in favor of a real, effective, or meaningful death penalty system in the United States. Consider the following:

- There are 53 jurisdictions in the United States that are affected by the death penalty, including the 50 states, the District of Columbia, the federal government and the United States Military.
- There are 13 states/jurisdictions that do not have a death penalty.
- There are four states—Illinois, Maryland, North Carolina, and Delaware—that currently have their executions under a moratorium.
- There are seven states/jurisdictions that, while having a death penalty, have never executed a person since 1976 or before.
- There are another 17 states/jurisdictions that, while having a death penalty, have executed only a miniscule amount of persons since 1976 (all less than ten executions total, per state/jurisdiction, per year, since 1976).

Those bottom 17 states/jurisdictions (including Maryland) on the execution list (see Table 6) have executed a total of 56 persons since 1976 (DPIC, 2002b, 2002e, 2002i, 2002j; Snell, 2001). That figures out to an average of .12 executions per year per state. The remaining top 16 death penalty states (including Illinois, North Carolina, and Delaware) accounted for 813 executions since 1976. Even those states would average out to only 1.9 executions per state per year. If we look at Texas alone, they have averaged over 11 executions per year since 1976. In summary then, excluding the top 16 execution states (except Illinois, North Carolina, and Delaware, which are on a moratorium), arguably, 40 of the 53 jurisdictions do not support a meaningful death penalty/execution system in the United States. Clearly, the 17 "swing" jurisdictions have the worst of both worlds . . . a death penalty system that, in effect, does not execute anyone but yet has a continuing build-up of death row inmates. This, in my opinion, shows a clear majority of U.S. states/jurisdictions, in actuality, *do not* support a death penalty or it's effective usage (see Table 6).

The federalism issue has been continuously set aside by the United States Supreme Court deciding numerous cases, which imposed minimal constitutional standards on states and their criminal procedures (for example, the case of *Miranda v. Arizona* 16 L.Ed. 2d 694 (1966) and the requirement of all state and local law enforcement to give certain minimal specific warnings before a constitutionally valid custodial interrogation). Surely the federalism issue should not hinder the United States Supreme Court in looking at the Death Penalty/Execution system, the most drastic and permanent of punishments, in the various states on a "real issues" basis (see later discussion regarding "real issues").

Our death penalty/execution system is no longer an issue of federalism or public opinion. In the opinion of this author, and because of the peculiarly southern flavor of that system in actual practice, it has become a due process/equal protection constitutional issue. "Due process" has always meant "fundamental procedural fairness." With few exceptions, "equal protection" has always applied to all citizens of the United States, even the most unlikable or unpopular ones.

The measure of the success of our system of criminal justice is *not* how we treat the rich and powerful but how we treat the poorest, least influential, and most unlikable or unpopular persons, who have become a part of that criminal justice system. If the United States Supreme Court will not, constitutionally protect those individuals, who will? If those individuals facing a possible death penalty are not protected from the constitutionally flawed death penalty/execution system, in practice in the United States, how, or, by whom, will the innocent or, ultimately, maybe us, be protected?

Eventually, the United States Supreme Court is going to have to face the "due process/equal protection" issue of what is actually occurring in the United States' death penalty/execution system. The due process/equal protection clause of the 14th Amendment (Section 1) of the U.S. Constitution, which was, ironically, passed after the civil war to ensure rights to former black slaves, states . . .

> All persons born or naturalized in the United States and subject to the jurisdiction thereof, are citizens of the United States and of the State wherein they reside. No State shall make or enforce any law which shall abridge the privileges or immunities of citizens of the United States; nor shall any State deprive any person of life, liberty, or property, without due process of law; nor deny any person within its jurisdiction the equal protection of the law.

There are many other death penalty/execution issues on the table in our country at the current time: including moratoriums, wrongful convictions, innocent persons being executed, the cost of the death penalty system, the executing of mentally handicapped persons, the executing of juveniles, the gender bias, incompetent representation, improper compensation for lawyers defending persons charged with an offense facing the death penalty, the unpredictable and inconsistent procedure of deciding who faces the death penalty and who doesn't, and so on. Aside from those "other" issues, this issue of race and its southern regional bias in the implementation of the death penalty and executions in the United States has to be dealt with "head-on" by the United States Supreme Court. Even the perception (which it may, in fact, now only be . . . a perception) of a racial bias, should spell the doom of the death penalty in our system of justice. The unbalanced numbers, showing that, in this modern era of executions, four out of five executions occur in a region of our country that makes up one-third of the United States population (the South), at the very least, gives a perception of a racial bias since nearly 40% of all persons either facing the death penalty or executed in this country are black.

The death penalty/execution system is full of so many real or perceived problems that they must be dealt with ultimately by the United States Supreme Court on a "real issues" basis, not on a perceived public opinion or federalism basis. The only way to prevent the furtherance of the most ultimate crime in our society—the execution of an innocent person by the government—is for the United States Supreme Court to, quickly and clearly, declare the death penalty to be unconstitutional in the United States. There are other viable sentencing alternatives, which will protect society, and, at the same time, protect individual rights. The alternative, of a true-life sentence without the possibility of parole, will not allow the government to possibly "kill" an innocent person and yet protect society from dangerous criminals.

The United States Supreme Court may get its chance to deal with the due process issues of the death penalty sooner than expected. On July 1, 2002, New York Federal District Court Judge Jed S. Rakoff declared that the Federal Death Penalty Act was unconstitutional because it denies due process based on the possibility of executing an innocent person. To quote Judge Rakoff directly . . .

> Still, to this Court, the unacceptably high rate at which innocent persons are convicted of capital crimes, when coupled with the frequently prolonged delays before such errors are detected . . . , compels the conclusion that execution under the Federal Death Penalty Act, by cutting off the opportunity for exoneration, denies due process and, indeed, is tantamount to foreseeable, state-sponsored murder of innocent human beings. [*U.S. v. Quinones*, 2002 U.S. Dist. Lexis 7320 (2nd Cir. 2002) and follow-up to first *Quinones* decision in 196 F. Supp. 2d 416 (SDNY, 2002)]

The U.S. Court of Appeals for the Second Circuit reversed Judge Rakoff's decision on December 10, 2002 (See 313 F.3rd 49). The next step is the United States Supreme Court.

Along the same lines, Judge William K. Sessions, a Federal District Court Judge in Vermont, on September 24, 2002, also ruled the Federal Death Penalty Act as unconstitutional and stated the following:

> The Court concludes that the FDPA (Federal Death Penalty Act), which bases a finding of eligibility for imposition of the death penalty on information that is not subject to the Sixth Amendment's guarantees of confrontation and cross-examination, nor to rules of evidentiary admissibility guaranteed by the Due Process Clause to fact-finding involving offense elements, is unconstitutional. (from p. 43 of *U.S. v. Fell,* #2:01-CR-12-01, 2002, not yet reported in F. Supp.)

Additionally, the United States Supreme Court just agreed to hear an appeal of a Texas death row inmate, Delma Banks, who has been on death row for 23 years. They actually stayed his execution ten minutes before his scheduled execution. The issues being presented are adequacy of trial counsel, prosecutorial misconduct in withholding exculpatory evidence, and actual innocence because two prosecution witnesses have changed their testimony. So there are a number of critical death penalty cases pending before the U.S. Supreme Court this next session.

Since all of the subsystems within the criminal justice system of the United States, including our death penalty/execution system, are run by human beings, errors will be made simply for that reason alone. The "perfect" human being has not been created. The possibility of executing an innocent person should no longer be tolerated or allowed, as the "cost of doing the business," in an already flawed, racially and regionally biased death penalty/execution system in the United States. Our society has, hopefully, progressed far beyond the need to execute a person in order to satisfy a "dark ages" regional need for revenge.

In summary, one should look at the analysis and transformation of former Supreme Court Justice Harry Blackmun, regarding the death penalty issue. He was on the Court that decided *Furman* and *Gregg* and was, reluctantly but consistently, pro-death penalty. In 1994, in his last written decision, he dissented to a denial of certiorari

in a death penalty case, *Callins v. Collins,* 127 L.Ed. 2d 435 (1994). He stated in that decision that the promise of *Furman* was that "the death penalty must be imposed fairly, and with reasonable consistency, or not at all" (*Callins,* 1994, p. 438). In dealing with the issue of racism and the death penalty, he said "the arbitrariness inherent in the sentencer's discretion to afford mercy is exacerbated by the problem of race" (*Callins,* 1994, p. 444). He went on to say that the *McCleskey* case was "a renowned example of racism infecting a capital sentencing scheme" (*Callins,* 1994, p. 445). Justice Blackmun concluded this area of discussion as follows:

> . . . where a morally irrelevant—indeed, a repugnant—consideration (race) plays a major role in the determination of who shall live and who shall die, it suggests that the continued enforcement of the death penalty in light of its clear and admitted defects is deserving of a "sober second thought." (*Callins*, 1994, p. 445)

Justice Blackmun concluded "from this day forward, I no longer shall tinker with the machinery of death. I feel morally and intellectually obligated to concede that the death penalty experiment has failed" (*Callins*, 1994, p. 438).

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Three Monkeys: Police Ethics and the Blue Wall of Silence

Peter J. Puleo, Assistant Professor of Criminal Justice, William Rainey Harper College

In an ancient Asian mythology and counsel of wisdom, the three monkeys sit side by side and hear no evil, see no evil, and speak no evil; one covering his ears, another his eyes, and the third his mouth, respectively. It is a cautionary counsel, but implicitly within the trinity is the truth that one cannot, while yet alive, completely seal oneself from the realities, the vagaries, and the facts of one's environment. The monkey covering his eyes can yet hear and speak; the monkey covering his ears can yet see and speak; and the monkey covering his mouth can yet hear and see. It is the monkey covering his mouth that is of central concern here; he sits contemplatively seeing and hearing all while remaining uncommunicative in his self-imposed muteness.

No one knows for certain how much corruption, brutality, or incompetence exists within the criminal justice system. For some, it is creedal that it is rife with rot, and that every Rodney King episode, each Ruby Ridge tragedy, and any Waco catastrophe or Ramparts scandal is but a spectacular specimen of the ubiquitous but less newsworthy incidents that interstice the system. For these, it is an article of faith that for every judge prosecuted, every police officer incarcerated, every lawyer investigated, there are legions lurking silently throughout the system, not yet caught or suspected. Also, other criminal justice practitioners, sitting in silence, are seen as "enablers," honest themselves, but tacitly allowing the unsavory events to occur by their refusal to report, or worse still, their reluctance or even refusal to divulge what they know when called forth in the due course of a wider investigation.

Whence comes this silence? Is it expected, or should it surprise us? Arguably, our history and culture are replete with subtle but pervasive admonitions and cues supportive of the third monkey; speak no evil. *Time Magazine* selected, coincidentally, a trio of women as their "Persons of the Year" for 2002 and labeled them as "whistleblowers." A whistleblower conjures up two images: (1) the traffic direction officer and (2) the athletic referee or umpire—both of whom call a stop to some inappropriate activity they are appointed to control. Viewed thusly, it is honorable work and, for now, the nomenclature of "whistleblower" is a colorful and socially acceptable term. How long will the term remain acceptable? Will it soon become tainted as the emblem of one who slinks about and betrays to authorities an explicit or implicit trust?

The role and history of people who give information to authorities about their associates or confederates is interesting, and society decidedly addresses the activity schizophrenically. Most of us can recall that, as children, we monitored this type of behavior with an informal method of social control by calling young apostates "tattletales." Indeed, adults and grammar school teachers may play a role in this type of early socialization by discouraging children from spontaneously "tattling." The activity is only legitimized when specifically requested by authority, as when a child is individually questioned about the actions of another child. This code continues up the educational chain. Any academics reading this article are invited to ask their assembled classes if any student would be willing to provide information

to the instructor concerning cheating by their classmates. Do not be surprised at the paucity, or even absolute absence of hands shown. This should be an honorable task, so why is it considered shameful?

In our culture, and perhaps in many others, people who inform on others are known in slang and colloquially as "rats," or "stool pigeons," or "canaries"; they "squeal" as would a pig or they "squeak" as would a rodent; they "roll over," which may have its metaphorical origin in the act of a prostitute offering herself up for lucre; they are also called "finks," "traitors," "turncoats," or "blabbermouths." Our popular language is richly spiced with pejoratives for this activity and its practitioners. This phenomenon is well-known. Perhaps more curious is the dearth of terms, analogies, similes, or metaphors that would confer honor or nobility for this activity, and we generally do not deal kindly with those who go to the authorities. Even the mass media called Sammy Gravano a "mob rat" when he informed on his capo, John Gotti. The most neutral term used was "informant" until it too transmogrified into an unsavory if not utterly derisive description. "Whistleblower" probably evolved to replace it and, for now, is the term of polite parlance.

There is cultural pedigree to the idea that loyalty to one's fellows may trump virtually all other concerns, and that disloyalty is repulsive. Of course, the operant question is loyalty to whom? Our historical lineage may refresh our memories. Some biblical antecedents are well-known. Delilah betrays Samson to the Philistine authorities (*New American Bible*, 1987, Judges, 16: 4-21). For this act of treachery, to this day, her name lives in infamy as the stereotypical female temptress villain. Judas betrays Jesus to the Romans and Christ admonishes him ". . . are you betraying the Son of Man with a kiss?" (*New American Bible*, 1987, The Gospel According to Luke, 22: 47-49). In all of Western civilization, Judas is reviled, and his name is virtually synonymous for a traitor.

In all of American history, a leading contender for scorn is Benedict Arnold who, after his brilliant victory at Saratoga, abandoned the revolutionary cause, and joined the British. His name too equals betrayal. Allegedly, he was held in scorn in England, as well. Such can be the fate of the betrayer.

Less grandiosely, Anna Sage, the "woman in the red dress" tells authorities that she and John Dillinger will see Manhattan Melodrama at the Biograph Theatre on Lincoln Avenue in Chicago. This woman, who brought Public Enemy Number 1 to the FBI and the police, is more likely to be remembered as a scarlet vamp than as a servant of the public.

John Dean informed on activities within the Nixon administration, of which he was a part. How many people envy or admire him, or would covet his probable historical legacy? "Deep Throat" did likewise. Why does he remain anonymous, and why do Woodward and Bernstein carefully conceal his identity while he remains alive?

These stories and others abound, yet we have few stories, myths, or histories praising inside informers and no nomenclature anointing them with the imprimatur of righteousness. Again, the best that *Time Magazine* could devise is "whistleblower." It is also interesting, and perhaps significant, that those who *do not* inform are not tarred with similar pejorative nomenclature other than, perhaps, "coconspirator" or "partner-in-crime," and then only if they were participants; if they remained silent observers only, they may be deemed "enablers" at worst.

We also have well-worn homilies, slogans, and mottos extolling loyalty and internal unity:

- "Take care of your own."
- "Charity begins at home."
- "Sink or swim together."

Benjamin Franklin famously said to his fellow rebels at the outset of the revolution, "Gentlemen, we must all hang together, or surely, we shall all hang separately." And of course, there is the biblical exhortation, "he that troubleth his own house shall inherit the wind" (*Holy Bible*, 1989, Proverbs, 11:29).

Implicitly, at least, these examples counsel silence and small-group cohesion. Although in themselves we do not find an explanation, much less a justification, for the "blue wall" of police silence, they bespeak the cultural thrust of a society pertinent to the issue of giving information to outsiders concerning one's immediate social milieu.

It is a mistake to conclude that the code of silence is confined to law enforcement and the famous "omerta," or rule of silence, characteristic of the Sicilian mafia. In a study of a homicidal physician and medical ethics, an investigator writes that ". . . the loyalty among physicians makes police officers' famous 'blue wall of silence' seem porous by comparison" (Stewart, 1999, p. 301). The same author gives numerous examples of medical establishment cover-up and resistance to cooperation with investigating authorities. In an investigation of the Ohio State Medical Board, he writes that the ". . . board allowed doctors convicted of felonies such as drug trafficking, insurance fraud, forgery, theft, sexual assault, and drug abuse to remain in practice (Stewart, 1999, p. 163). Finally, he writes ". . . the medical profession's efforts to police itself had always been lax. It is never comfortable to sit in judgment of one's peers with whom one works on a day-to-day basis. A physician in this position must always deal with the temptation to give the benefit of the doubt and gloss over a colleague's errors (Stewart, 1999, p. 164). Other students of the issue have reached similar conclusions concerning not only the medical profession, but business, government, education, and even televangelists (Delattre, 1989, pp. 93-94).

Lou Cannon, reviewing Bernard Goldberg's book *Bias: A CBS Insider Exposes How the Media Distorts the News* writes, "Goldberg professes to be surprised that his colleagues . . . regarded him as a 'traitor' for writing the column. But whistleblowers are frequently treated as pariahs by those on whom they blow the whistle. For most Americans, loyalty to the team is a defining virtue" (Cannon, 2002, p. 43). The same reviewer quotes Goldberg writing that the "biggest sin" involves telling others about suspect activity and that ". . . there is no difference, no difference whatsoever, between the wiseguys who operate in the dark shadows of the underworld and the news guys who supposedly operate in the bright sunlight" (Cannon, 2002, p. 43).

Even religious institutions are ensnared by this phenomena. All informed people are aware of the controversy engulfing the Catholic church concerning sexual exploitation of young students by some rogue priests. These despicable acts by a relatively few clerics expanded into a crisis by the delay or even refusal of church authorities to inform civil authorities of these crimes:

> Priests sexually molested children, and the institution of the church exacerbated and participated in this sin by choosing to cover up these violations to protect its image instead of addressing the reality of evil in its midst . . . In this case, the choice of bishops, priests, and laity was to look the other way . . . when the warning signs became apparent. (Allman, 2002, p. 3)

The Allman article is accompanied by a caricaturized portrait of a mitered bishop in a blindfold with an upraised index finger to his lips in the universal gesture of "don't speak!"

For the police officer, aside from the virtue of silence instilled in childhood and perpetuated by the cultural zeitgeist, the merits of keeping one's mouth closed is counseled to young recruits early in their careers and continues throughout. Recruits undergo a metamorphosis. Loyalty is essential, and they are encouraged to believe that much of the public is an adversary and that ranking police administrators, prosecutors, and so forth are, at best, suspect. "The paramount duty is to protect your fellow officers at all costs, as they would protect you, even though you may have to risk your own career or your own life to do it" (Sherman, 1991, p. 106). There is an abundance of literature on this issue called the "blue wall" as herein or, similarly, the "blue curtain" (Westley, 1970).

As part of the larger police culture or subculture, some of which is generally misunderstood or distrusted by the public, the issue of police silence is especially problematic and deleterious. Sheehan and Cordner (1989), writing abut the subculture in general, write that ". . . the influence of dominant police subcultural expectations can have a devastating effect on a police department. In fact, the existence of such unofficially established negative, institutionalized role expectations is the primary reason that so many police departments are held in such low esteem by the public" (Sheehan & Cordner, 1989, p. 286). One can hardly overstate the seriousness of this issue.

So silence has a powerful support system within professions and organizations. Arguably, our nation in general distrusts authority as part of its Anglo-American heritage, and even distrusts hierarchies of authority within authoritative structures such as the police. We scrupulously divide, decentralize, and insist on power sharing within our governing organizations. Loyalty is prized and often trumps whistleblowing; it is the first lesson learned in the home-insular loyalty to the family. The whistleblower must betray a trust implicitly or explicitly thrust upon him or her, a trust perhaps especially difficult to circumvent for the routine, garden variety of non-felonious misconduct probably characteristic of most law enforcement misbehavior. These peccadilloes, however, may be the seedbed for a later scandal or disgrace of serious infractions, yet the pattern of silence has been set and is difficult to jettison.

Police departments are organizations like any other, and beset by some of the same bureaucratic hobgoblins, including the tendency to undermine responsibility by shifting it and providing cover for a plagued conscience. Some views are so ubiquitous as to become the stuff of clichés:

- "That's not my department."
- "I don't make the rules."
- "I'm not the boss."
- "I don't have to get involved."
- "It isn't part of my job."

How many of us working within an organization have not heard, or indeed made, such comments and subscribed to the underlying belief and behavior patterns?

Silence in the interest of small-group cohesion may have an atavistic connection. All mainstream anthropologists and sociologists are agreed that the earliest human societies consisted of membership in small, insular groups interacting with a dynamic and dangerous environment. The same still applies today with simians living in feral surroundings. Evolutionary psychology posits that much of our modern, post-industrial, high-tech behavior yet has its origins in our early development from the tree tops, down to the savannahs, into the villages, and finally, now, the cities. Just as our bodies and brains evolved, so too did our values and morals. We are the descendants of those early hominids who survived, and arguably individual survival was a function of small-group survival. This loyalty to the small group is intrinsic to us, and the informant is acting against this entrenched, if unconscious, aspect of human nature. "Regardless of circumstances, chimpanzees, monkeys, and humans cannot readily exit the group to which they belong . . . they are part of and processed by the group" (De Waal, 1996, p. 169). Similar observations and conclusions have been made by other researchers concerning the nexus between early human experience and modern human ethics (Wilson, 1993; Wright, 1994).

There are few, in any, countervailing forces at work to encourage internal informants. The motives of informants are often suspect as tainted, unclean, faintly, or wholly disreputable. Have they suddenly been infused with messianic zeal or undergone an epiphany? How long did they wait to come forth, and why? What role did they play? Are they acting out of contrition, or are they animated out of baser concerns of revenge, anger, disappointment, jealousy, or self-aggrandizement? Are they acting to shield themselves from the suspected fate of former confederates who they believe may soon be discovered? Whatever the motives, base or noble, the whistleblower may be despised, even if believed, and reviled even by supporters. Worse, they may not be believed, or their accusations may seem exaggerated or unfounded, or might act to embarrass the innocent as well as the guilty, or inflame public opinion, or bring unwarranted disrepute to a community or police department if the information is reckless, careless, or at least unsupported by convincing evidence. This too is the risk assumed by informants.

No one knows how much or how little corruption, brutality, or illegal/unethical activity takes place in the practice of criminal justice, but we do know that law enforcement is a schizoid if not schizophrenic profession. It deals in the coin of deception and the currency of violence. Police lie to the media to protect sources and maintain confidentially; they deceive political superiors who try to manipulate department administration; they mislead the public to allay unnecessary panic or create a better image; they assume false identities as pimps, pushers, whores, or johns.

Police lie to suspects to trap them, and they kindly deceive the families of murder or accident victims to comfort them; it is a police rule that every death, when reported to kin is quick, clean, and painless.

So criminal justice practice moves in a netherworld where the informer too lives to earn his or her bread; it can be a place that hovers between silence and skullduggery, where subterfuge may be more virtue than vice, and surreptitiousness no sin. Some see episodes of misconduct and sneer that it is only a "tip of the iceberg," whereas others may look at the anecdotes and plausibly sigh that "there is less here than

meets the eye." No one knows, but certainly criminal justice practice continues to be a place of deep moral and legal ambiguity, and the controversy concerning informants is not surprising and will continue.

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