Illicit Drug Trends Globally

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Introduction: From American Disease to Global Epidemic

When David Musto penned his influential history of narcotic control in 1973, *The American Disease* would have seemed an appropriate title. Throughout the twentieth century, drug use in America had regularly been an issue of concern, and by the 1970s, it had become one of the key U.S. domestic policy issues. In reality, the use of psychoactive substances by humans is virtually universal. In many parts of the world indigenous people were continuing to use psychoactive substances, including those controlled under the United Nations (UN) drug control conventions, in much the same way as they had for centuries. But this kind of drug consumption remained largely unrecognized or simply ignored at a global level. Similarly, in some parts of Europe drug use among the artistic and fashionable elite had existed since the beginning of the nineteenth century, and postwar Europe to some extent mirrored the American association of drug use with a growing youth and counterculture. However, in the 1970s, it appeared that drug use was predominantly a problem of the developed world, and in only a handful of nations was it becoming recognized as an important public health issue.

To a large extent, this condition has changed, and drug use has now become recognized as a global problem. While a debate still exists that sets drug consumers in the affluent developed world against drug producers in poorer developing countries, this paradigm is increasingly being replaced with a discourse that acknowledges a shared responsibility for the illicit drug problem. There are a number of reasons for this paradigm shift. First, drug consumption in many developing countries is now considerable. Second, the development of new patterns of synthetic drug use, along with technological developments that allow cannabis to be intensively produced, mean that significant drug production is now occurring in developed countries. Finally, governments in many developing and transitional countries have recognized the potential costs of drug problems and their links to other pressing social concerns, such as crime, community safety, AIDSinfection, corruption, and general political instability.

As drug use has become recognized as a widespread problem, there has been a gradual change in how it is being tackled. If any moment can be said to mark the recognition of the drug problem as a common global responsibility, it was the 1998 UN General Assembly Special Session (UNGASS) on the world drug problem. The UNGASS was accompanied by a 10-year action plan to reduce drug use, and more importantly, it also committed signatories in the accompanying Declaration on Guiding Principles of Drug Demand Reduction. This declaration outlined the need to balance drug interdiction efforts with initiatives to reduce the demand for illicit drugs, and the need for these initiatives to be based on a comprehensive and regular assessment of the illicit drug situation.

Looking to the future, drug use problems are likely to be increasingly associated with the developing rather than developed world because of the combined impact of globalization, urbanization, and that a far greater proportion of those in the developing world are young – the predominant risk group for drug use. Moreover, because drug problems have a tendency to coalesce with and exacerbate other health and social ills, the developing world may disproportionately pay the public health and social cost of future drug epidemics.

Monitoring Illicit Drug Trends

Measuring Illicit Drug Use

A number of problems hamper any discussions of illicit drug trends at the global level. A large part of uncovering

the public health aspect of illicit drug trends involves appreciation of the nuances regarding which substances are classified as drugs, what constitutes drug use, and when drug use becomes drug 'abuse' or problematic. Drug use encompasses a complex set of behaviors that are usually found at low prevalence and tend to be stigmatized and well hidden. This presents the researcher with a number of practical, methodological, and even ethical challenges, a review of which can be found in *Epidemiology of Drug Abuse,* edited by Zili Sloboda (2005). For practical and methodological reasons, monitoring the extent of drug use is typically restricted to simple behavioral measures of drug use within a temporal reference period. Currently the most common measures used for monitoring purposes are lifetime prevalence, past-year prevalence, past-month prevalence and, if available, the number of days the drug was used in the past month. Although it is theoretically possible with this sort of approach to also look at combined use of different substances, in practice this can be quite difficult. Growing recognition of this issue has led to a greater interest in adapting current approaches to be more sensitive to multi- or poly-drug use (for more on multidrug use, see under the section titled 'Concluding remarks').

From a public health perspective, it is not only the use of drugs *per se* that is of interest, but the identification of drug users that would meet a clinical definition of drug 'abuse' or 'dependence,' who disproportionately account for drug consumption and drug-related harm. Both the DSM-IV (*Diagnostic and Statistical Manual of Mental Disorders*) and ICD-10 (*International Classification of Diseases*) have diagnostic criteria that are useful at the individual, or clinical, level in assessing dependence on drugs. Clinical assessment of drug dependence is usually not feasible within the context of routine drug-monitoring systems, necessitating the use of behavioral proxies of problem drug use, such as daily drug use or other high-risk drug-using behaviors (e.g., injecting drug use) (**Figure 1**).

Even defining which psychoactive substances fall under the general heading of illicit drug use can be problematic. Illicit drugs are scheduled by the UN and national governments according to their perceived degree of harm and other considerations. However, not all drugs that are prohibited at a national level necessarily fall under international control. *Khat*, for example, is currently prohibited in some countries but freely available elsewhere, and in its natural plant form it is not subject to international control.

Drug problems can also occur through the misuse of diverted medicines intended for therapeutic or pharmaceutical purposes, or by imbibing household or industrial products that contain psychoactive chemicals. The innovative nature of the contemporary synthetic drug market also lends itself to discovery of new psychoactive substances that do not fall under current UN international drug control conventions.

Classification of drug types is a further concern when monitoring global illicit drug trends. Some countries still classify drugs as being narcotics or psychotropics, according to whether they fall under the 1961 UN Single Convention on Narcotic Drugs (including cocaine, heroin, and cannabis), or the later conventions on psychotropic substances, which cover a range of synthetic drugs. Contemporary classification of illicit drugs is more specific, and there have been significant efforts to harmonize the reporting of illicit drug trends along globally recognized drug classification systems. The most problematic area in terms of drug classification is the nomenclature used to

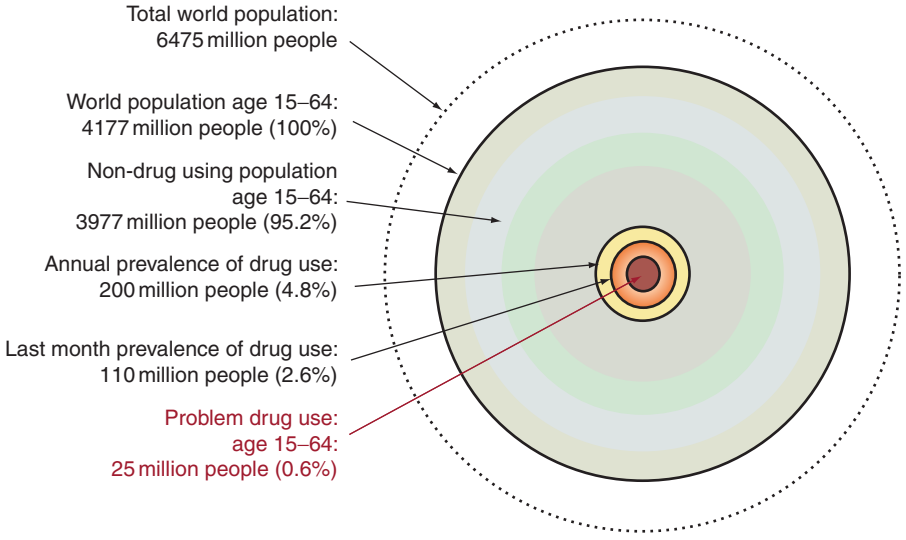

Figure 1 Illegal drug use at the global level (2005/2006). In percent of population age 15–64. Adapted from World Drug Report (2006). United Nations Office on Drugs and Crime (2006a) *World Drug Report 2006. Volume 1: Analysis*. Vienna, Austria: UNODC.

describe various types of synthetic drugs, where drug market conditions can preclude monitoring specific substances (e.g., pills containing a combination of illicit psychoactive ingredients).

Global, Regional, and National Drug Monitoring Mechanisms

Historically, the engine driving drug monitoring was the need to assess the effectiveness of supply reduction measures and the adherence of UN member states to the drug control conventions; however, public health concerns have increasingly risen in prominence. At the international level an outcome of this transition can be seen in the range of bodies with an interest in collecting data on drug use: the UN Office on Drugs and Crime (UNODC), which acts as a secretariat for the Commission on Narcotic Drugs (CND); the International Narcotics Control Board (INCB), which acts as the guardian of the drug control conventions; as well as the World Health Organization (WHO) and the UNAIDS program.

At the regional level, the Inter-American Drug Abuse Control Commission (CICAD) plays an important role in monitoring drug use in the Americas through a multievaluation mechanism. The European Monitoring Centre for Drugs and Drug Addiction (EMCDDA), a decentralized agency of the European Union, takes on the sole task of collecting data and reporting on drug use in Europe, using some of the epidemiological approaches developed by the Pompidou Group of the Council of Europe. Regional reporting is often structured around epidemiological working groups or supports regional political initiatives that exist in many parts of the world. Currently the most active initiative is the ACCORD network (ASEAN and China Cooperative Operations in Response to Dangerous Drugs) in Southeast Asia. Through its Global Assessment Programme (GAP), the UNODC is supporting the developments of regional reporting systems elsewhere (mainly Africa and Central Asia).

A number of national systems are also fundamental to note, namely the National Institute on Drug Abuse (NIDA) in the United States, which supports scientific research and dissemination of information, as well as data collection and training in various parts of the world through its international program. The U.S. Community Epidemiological Working Group (CEWG) has been particularly groundbreaking and influential, with its approach imitated and adopted elsewhere, including by the aforementioned Pompidou Group. The Canadian Centre on Substance Abuse provides information and advice through similar methods of data collection and dissemination. Australia has also invested considerable resources in developing national sentinel monitoring systems, such as the Illicit Drug Reporting System, which supports more comprehensive national data collection activities. In South Africa, SACENDU (South African Community Epidemiological Network on Drug Abuse) is probably the best example of a long-standing and successful monitoring program in the developing world. A good overview of data collection approaches and the bodies working in these areas can be found in the 2002 and 2003 double issues of the international *Bulletin on Narcotics*.

Indicators of Illicit Drug Use Used in Monitoring Systems

In one version of an old fable, a king wishing to test his wisest sages sends them into a dark room containing an elephant. Each sage subsequently describes the animal according to the part of its body he had encountered, comparing this feature to the observation of some other object, such as a wall or a tree. None of their descriptions in isolation provided an adequate depiction of the animal and all could be said to be in some respects both accurate and misleading. However, taken collectively the accounts did allow the king, who was unaware of the animal's identity, to draw a picture of the complete creature.

In many respects this fable provides a good analogy for the approach taken in describing patterns and trends in drug use. A range of data sources usually referred to as indicators is available, all of which are deficient in some respects and require careful interpretation, but when taken together nonetheless provide an image of the phenomenon. By using a variety of indicators, none of which is sufficient on its own, in combination they can provide a more accurate picture of drug use in a given population and allow changes over time to be identified. Certain methods are often more appropriate than others for measuring specific types of drug use, depending on general prevalence in the population, degree of hidden use and stigmatization, and cost effectiveness.

The main indicators used to monitor illicit drug use can be found in the UN Annual Reports Questionnaire (ARQ) and through many of the regional and national reporting mechanisms listed at the end of this article. These indicators are also explicitly listed in the Lisbon Consensus, an agreement among international and regional bodies on the core components of a drug monitoring system.

An important distinction between illicit drug epidemiology and approaches to other public health topics is the prohibited nature of illicit drug use. For this reason, monitoring illicit drug use is driven by both concern about drug control (interdiction efforts against production, trafficking, and use) and public health issues (treating drug dependence and preventing HIV transmission through injecting drug use). As such, much of the data available on illicit drug trends stem from law enforcement efforts to control illicit drugs (e.g., arrests for drug use and drug seizure data) as well as its consequences (e.g., demand for drug treatment).

Obtaining a comprehensive picture of the illicit drug situation involves thoughtful and cautious examination of these various illicit drug indicators. Some of the more commonly used indicators of illicit drug use, and their limitations, are outlined here.

Interdiction statistics

For supply-related drug interdiction efforts, intelligence and law enforcement authorities monitor trends on drug seizures and arrests for drug-related offences, as well as market price and purity information. Methodological approaches vary, as does the quality of the information available, with data on price and purity being generally poor or unavailable. Because reporting on the number and quantity of illicit drugs seized is obligatory for countries who are signatories to the UN drug control conventions, this data set is generally relativity robust at the international level. Nonetheless, seizure data are problematic to interpret because they are heavily influenced by large-volume seizures, most of which relate to drugs in transit rather than being reflective of local drug consumption trends. The UNODC and the U.S. Drug Enforcement Agency (DEA) also report on opium and cocaine crop production, based on ground and satellite surveys. Estimating the overall production of cannabis or synthetic drugs is extremely difficult, and consequently, the global production figures reported by the UN should be regarded as 'best estimates' rather than precise figures.

School surveys

The most comprehensive and comparable global data set on illicit drug use arises from school surveys on drug use, which are inexpensive and easy to conduct. These surveys are particularly useful because they target adolescents, who are a high-risk group for drug use. At the global level, questions on cannabis use are included in the WHO survey on Health Behavior in School-aged Children (HBSC). In the United States, the Monitoring the Future annual survey of eighth-, tenth-, and twelfth-graders represents one of the most developed and largest survey exercises, running since 1975. Other notable school survey data sources include CICAD, which has prioritized school surveys on drug use in Latin America, and adopted a common methodological approach across countries to facilitate intraregional comparisons. And in Europe, the ESPAD study group (European School Survey Project on Alcohol and other Drugs) reports on drug use among 15- to 16-year-olds in over 30 countries every 4 years.

Problems of bias related to nonresponses and dishonest responses can be a difficulty for any survey, but they present a particular challenge when surveying illicit drug use. Techniques have been developed to ensure confidence in anonymity to improve the honesty and accuracy of responses. However, school surveys face additional problems: in many countries, the children most at risk of using drugs do not attend school for various reasons, while in the developing world, education is often not universal, or is limited to the early years of schooling. Therefore, generalizations from the results of school surveys to the wider population of young people need to be made with some caution.

School-aged children are not the only special target population selected for assessing drug use levels: surveys of military conscripts have been conducted in some countries, while at-risk groups such as out-of-school youth, the homeless, and sex workers have also been targeted for surveys.

Household surveys

Less commonly available for the developing world, but a mainstay for reporting on drug use in North America, Australia, and Europe, are national household surveys on the health habits of the general population, like the U.S. National Survey on Drug Use and Health (NSDUH). Such surveys are costly and methodologically complex, but they include numerous approaches developed to reduce reporting biases, such as the use of computer-aided interviewing. Despite these state-of-the-art methods, general population surveys are generally regarded as inadequate for measuring stigmatized and infrequent drug use behaviors (e.g., injecting drug use), which are disproportionately found in marginalized communities. For this reason a number of statistical techniques (e.g., capture-recapture and benchmark-multiplier methods) have been developed that try to extrapolate from known data sources to estimate the unknown, or hidden, proportion of drug users. Nevertheless, well-conducted household surveys are useful for examining the relative prevalence of illicit drugs, and they can provide time-series data on more commonly used drugs, which is important for evaluating trends and compensating for other data limitations.

Health-care services and criminal justice indicators

In addition to techniques to estimate the prevalence of drug use, drug information systems also report on people who are identified as having a drug problem through their contact with health-care services or the criminal justice system. In the United States, approaches in this area include drug testing among arrestees (Arrestee Drug Abuse Monitoring, or ADAM) and reported drug use among medical emergency patients (Drug Abuse Warning Network, or DAWN). More common is the practice of monitoring the characteristics of people seeking drug treatment, which provides a convenient tool for analyzing global drug trends. The Treatment Demand Indicator is one of the key epidemiological measures adopted by the EMCDDA, while similar

treatment-demand monitoring systems have been established in a number of non-European countries. Clearly, information on the characteristics of those seeking help for drug problems is influenced by the availability of drug treatment services and factors such as court-mandated treatment. Nonetheless, this type of data is useful in monitoring problematic drug use and shifts in treatment demand. Other key indicators include monitoring drug-related deaths (by acute poisoning) and levels of infectious disease (principally HIV and hepatitis C) among injecting drug users. Finally, data from *ad hoc* research studies and more qualitative information from interviews with researchers, health-care providers, and social workers – and drug users themselves – all contribute to the global information base on drug use trends.

A Global Overview of Illicit Drug Use

The quality and type of information available on illicit drug use varies greatly between geographic regions, in part because illicit drug data collection activities tend to receive greater funding in developed countries. For this reason, some parts of the world base their understanding of the illicit drug situation on sophisticated and standardized reporting methods, while others rely almost solely on drug arrest and seizure data or on the opinion of available experts. It is possible to describe the overall illicit drug situation quite comprehensively in North America, Europe, and Australia, while in South America and parts of Southeast Asia only limited data exist, which are often localized and more difficult to compare. In Africa, with the exception of South Africa, data are extremely limited, with only a few rapid assessments and some *ad hoc* surveys in Northern Africa and a few Middle Eastern countries. Similar deficits exist in much of Central Asia, where again only sporadic information sets are available. This paucity of data is reflected in the submission rates for the ARQs, which are provided to the UN to prepare the annual global drug situation report for the CND: only around 110 of the 193 UN member states submit data through the ARQ.

Despite the information deficits it is possible to draw a rough picture of the global drug problem and to identify some significant trends and developments. The reader should be aware that drug use is a dynamic phenomenon and reporting tends to be based on data that are often slow to compile (for more contemporary data sources that can be accessed, see the section titled 'Relevant Websites'). In particular, the *World Drug Report*, which is published each year by the UNODC, provides the best global overview on many aspects of the drug problem. However, this report is very general and the inadequacies of some of the data sources used are not always apparent. For this reason, the reader should refer to local drug monitoring systems to gain insight into drug use trends within any particular country or region.

According to the *World Drug Report 2006* (UN, 2006a), the global consumption of illicit drugs continues unabated. An estimated 5% of the world's population had used an illicit drug in the past year, while drug production and trafficking was estimated to be a US$320 billion industry. Most of this drug use was sporadic: only about half of those who had used drugs in the past year, or 2.7% of the global adult population, had used drugs in the last month. Those with serious problems were a far smaller number, with an estimated 25 million drug addicts or problem drug users worldwide, or 0.6% of the global population aged 15–64. In nearly all regions of the world, drug users are disproportionately young and male, though in some regions there are concerns of a narrowing gender gap or evidence of an aging population of drug users (**Table 1**).

Cannabis

Cannabis is by far the most widely used, produced, and trafficked illicit drug in the world. An estimated 162 million people worldwide use cannabis, and the drug is grown in at least 176 countries. Cannabis resin (hashish) is primarily produced in Morocco and in a few other countries, with Europe as the world's main resin consumer. Herbal cannabis production is practically impossible to monitor, but is particularly intensively cultivated in the Americas. The widespread availability of this drug is a

Table 1 Extent of drug use (annual prevalence) estimates 2004/05 (or latest year possible)[a]

		Amfetamine-type stimulants				
	Cannabis	*Amfetamines*	*Ecstasy*	*Cocaine*	*Opiate (including heroin)*	*Heroin*
(million people)	158.8	24.9	8.6	14.3	15.6	11.1
in % of global population age 15–64	3.8%	0.6%	0.2%	0.3%	0.4%	0.3%

[a]Annual prevalence is a measure of the number/percentage of people who have consumed an illicit drug at least once in the 12-month period preceding the assessment.

likely factor in its ubiquitous high prevalence in comparison to other illicit drugs. Any limitation on the drug's cultivation by climate, land space, or crop detection has been circumvented by the development of indoor hydroponic cultivation. High prevalence of cannabis use can be found in Australia and New Zealand, North America, and West and Central Europe, where annual prevalence estimates range from around 7 to 15%. Cannabis use is undoubtedly prevalent in many other parts of the world, but the absence of comprehensive prevalence surveys in many developing nations makes it difficult to verify the extent of use. For example, cannabis is the main drug used throughout most of Africa and the Pacific Islands. It is also widely used in Asia, but its use is this region is overshadowed by problems with opiates and methamfetamine.

Cocaine

While cannabis is the most widely used illicit drug, historically two other products that are based on illicit crop production have been the predominant drugs associated with severe health and social problems. Cocaine, produced from the leaves of the coca bush, and heroin, derived from opium poppies, both remain responsible for some of the world's most damaging drug problems. While chewing of unprocessed coca leaves was a common traditional habit in many Andean indigenous communities, nearly all modern coca cultivation goes toward production of cocaine. Most of the estimated 910 metric tons of cocaine produced each year comes from Colombia (50%), and to a lesser extent Peru (32%), and Bolivia (15%). In line with the production of cocaine in this region, around two-thirds of the estimated 13.4 million users worldwide live in the Americas. Although the United States is the country most associated with cocaine use problems and particularly crack cocaine abuse (a concentrated and smokable form of the drug), cocaine consumption in the United States appears to have stabilized. This country still reports the world's highest annual prevalence figure for the adult population (2.8%), although Spain and the UK in Europe as well as Canada now report levels of use approaching those in the United States (2.7%, 2.4%, and 2.3%, respectively).

Opiates

The use of heroin and other opiates remains a major public health concern, largely because of their potential to bring about dependence, but also because they are often injected, creating a population susceptible to infection by blood-borne viruses (i.e., hepatitis B and C, HIV). UN estimates suggest that there are almost 16 million opiate users worldwide, 11.3 million of whom are heroin users. Opium production is currently concentrated in Afghanistan, which is thought to be responsible for 89% of global opium production (estimated at 4620 metric tons in 2005). Opium is still produced in parts of Southeast Asia, but opium poppy cultivation has declined significantly over the past decade, and within that region is now mainly limited to Myanmar. Opium poppy cultivation has also been noted in South and Central America (Colombia, Mexico, Peru, and Venezuela) and other Asian countries (Laos PDR, Pakistan, Thailand, and Vietnam).

Declines in the cultivation of opium in Southeast Asia could be argued to underlie recent declines in opioid use in parts of Southeast Asia and Australia. However, heroin use continues to be a significant concern in China and Vietnam, while opium remains the major illicit drug of abuse in Myanmar. In Europe, there is a stable overall trend in heroin consumption, while heroin use in North America also appears to have stabilized. The picture is different in the Russian Federation and the former Soviet republics and Central Asia. In 2004, the annual prevalence of heroin use was estimated at 2.0% for the adult population, and high prevalence was also found in the Ukraine (0.8%), Kyrgyzstan (2.3%), Kazakhstan (1.3%), and Tajikistan (1.0%). Of particular concern, heroin injecting appears to be the main vector for the HIV epidemics in Russia, Central Asia, and the Baltic states. The world's highest prevalence for heroin use is from Iran (estimated annual prevalence of 2.8% in 1999). Relatively high prevalence rates have also been reported by Pakistan (0.8%) and Afghanistan (1.4%).

Heroin use is comparatively lower in Latin America, and there appears to be little use in the Pacific Islands. Despite a dearth of prevalence data in Africa, there have been anecdotal reports of heroin use along drug-trafficking routes that extend from East Africa across the continent, evidence of use in Nigeria (estimated prevalence of 0.6% in 1999), and a growing demand for heroin treatment in South Africa. In contrast to the seemingly low prevalence of heroin use in mainland Africa, the island country of Mauritius has a long-standing heroin use problem, with an estimated annual prevalence of 2.0%.

Synthetic Drugs

Although plant-based substances remain an important part of the global drug problem, a clear trend since the early 1990s has been increased availability and use of a range of synthetically produced drugs, most notably amfetamine-type stimulants (ATS). An estimated 24 million people use ATS each year, often with devastating health and social consequences. The category of ATS includes methamfetamine, amfetamine, ecstasy (3,4-methylenedioxymethamfetamine, or MDMA), and ecstasy-related drugs (e.g., 3,4-methylenedioxamfetamine (MDA), 3,4-methylenedioxy-*N*-ethylamfetamine (MDEA)). Methamfetamine and ecstasy currently demand the most attention of all the drugs within this class, and of these synthetic

stimulants, methamfetamine has a higher dependence liability and is associated with far greater harm. Amfetamine, the less potent analogue of methamfetamine, sometimes found in controlled medicines, has been superseded by methamfetamine in most parts of the world, while ecstasy derivatives are usually inadvertently produced in an attempt to manufacture ecstasy, rather than being intended for a designated market. Other synthetic drugs, such as gamma-hydroxybutyrate (GHB or GBH) have become popular among niche drug markets, although they represent a growing concern for some countries. Here we restrict our attention to the most widely used synthetic drugs in the current global illicit drug market: methamfetamine and ecstasy.

Methamfetamine

The global rise in methamfetamine use and related problems since the late 1990s has disproportionately impacted the Asia Pacific region and North America. Southeast Asia, in particular, is a global hub for the production and trafficking of methamfetamine, accounting for 58% of global methamfetamine seized in 2004. Significant production of the drug also occurs in North America. As with all synthetic drugs, methamfetamine production is not restricted to any particular location, as this is limited only by the availability of precursor chemicals (sometimes found in cold and flu medicines) and the capacity to manufacture the drugs undetected. Areas of the globe most affected by methamfetamine use are those proximal to major manufacturing regions. Smoking crystalline methamfetamine (*shabu,* or ice) has been a historical trend in the Pacific islands of Japan, Hawaii, and the Philippines, while this pattern of drug use is also apparent in Brunei, Darussalam, Indonesia, and Malaysia (UNODC, 2006b). A more contemporary trend is the large-scale production of methamfetamine pills called *ya ba* in the Shan State of Myanmar, which have also been used in epidemic proportions in neighboring Thailand. The production and use of combination ATS pills, many of which also contain methamfetamine, has become a broader issue affecting countries within the sub-Mekong region (Laos, Vietnam, and Thailand) (UNODC, 2006c).

Outside of Southeast and East Asia, methamfetamine has also become a significant problem in both New Zealand and Australia, with additional concerns due to use by injection. In North America, crystalline methamfetamine use is expanding eastward from the West Coast, particularly through rural areas, while increases in methamfetamine use have recently affected Vancouver, Canada. A sharp rise in treatment demand for the drug has also been reported in South Africa (Parry *et al.*, 2004). Significant use of this drug in Europe is limited to the Czech and Slovak republics, where a localized problem has existed since the mid-1980s. Other parts of Europe have a long history of amfetamine use, including in the United Kingdom and Scandinavia and surrounding Nordic countries, although amfetamine use has fallen dramatically in the UK, being superseded by cocaine and ecstasy use, a trend apparent across Europe as a whole.

Ecstasy

A more fashionable synthetic drug trend is the rapidly growing popularity of ecstasy (MDMA). The recreational use of ecstasy can be traced back to the 1970s in the United States, but it was only in the mid-1980s that the drug became popular, first in Europe, and subsequently on a worldwide scale. Unlike many other drug use patterns, ecstasy is predominantly associated with recreational drug use among integrated young adults, very few of whom report substantial problems from their drug use or seek drug treatment. A relatively low number of deaths have been reported from ecstasy use. For example, in 2005, 77 deaths were identified in Europe as being ecstasy-related – in comparison with 8000 deaths per year attributed to opiate overdose.

Europe remains the global center of ecstasy production, with laboratories based predominantly in the Netherlands and Belgium, although increasingly the relative importance of Europe is declining as production increases elsewhere, particularly in North America and East and Southeast Asia. Levels of ecstasy use have been relatively stable in Europe (annual prevalence estimates range from 0.5–2.5%), although there has been a continuing upward trend in some countries. Despite rising in the 1990s, ecstasy trends in North America also appear to have stabilized, with annual prevalence estimates of around 1.0%. In contrast, Australia has experienced a sustained increase in the prevalence of ecstasy use since the late 1990s, and the annual prevalence is now 3.4% among adults. Several countries in East and Southeast Asia are also seeing increases in ecstasy use, albeit at lower levels.

Concluding Remarks

In this article, we have summarized the main approaches to monitoring the illicit drug problem, noted some of the more important conceptual and methodological difficulties in this area, and provided a simple overview of the global illicit drug situation. By necessity, our brush strokes are broad, but it is hoped that they are sufficient to provide a basic understanding of illicit drug trends, related data collection methods, and more importantly, direct the reader to further information on illicit drug monitoring.

There are a number of important issues that were not covered in the current article, but require due attention. An issue of paramount importance is the association between injecting drug use and HIV infection. In many

parts of the world injecting drug use is a major cause of the continuing HIV/AIDS epidemic, with alarmingly high HIV prevalence rates among injecting drug users in Asia, South America, and Eastern Europe.

An increasingly acknowledged issue in the illicit drug arena is the high level of comorbidity between drug use and other mental health disorders, such as depression and psychotic disorders. In particular, there is a growing emphasis on the development of treatment approaches that address both drug use and mental health problems.

Also worth noting are patterns of multi- or poly-substance use, including the combined use and interaction with substances that are legal in most countries, such as alcohol and tobacco. From a policy and public health perspective, many countries are now developing responses that target substance consumption in general, rather than the use of specific substances.

In recognition of changing illicit drug trends associated with globalization, further development of data collection and treatment capacity is needed in developing nations. Within these countries, there is typically little information from which to assess potentially growing drug problems. Adherence to internationally recognized ethnical standards in monitoring illicit drug trends is also a global imperative, while dedicated global efforts are required to sustain a balance between understanding both the demand and the supply aspects of illicit drug trends.

See also: AIDS, Epidemiology and Surveillance; HIV/AIDS; Illicit Drug Use and the Burden of Disease; Mental Health and Substance Abuse; Mental Health and Physical Health (Including HIV/AIDS); The Regulation of Drugs and Drug Use: Public Health and Law Enforcement.

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http://www.drugabuse.gov/about/organization/CEWG/CEWGHome.html – Community Epidemiological Working Group (CEWG).

http://www.dawninfo.samhsa.gov – Drug Abuse Warning Network (DAWN).

http://www.aic.gov.au/research/duma – Drug Use Monitoring in Australia (DUMA).

http://www.emcdda.europa.eu/?nnodeid=25328 – EMCDDA Drug Profiles.

http://www.emcdda.europa.eu – European Monitoring Centre for Drugs and Drug Addiction (EMCDDA).

http://www.espad.org – European School Survey Project on Alcohol and Other Drugs (ESPAD).

http://www.hbsc.org – Health Behavior in School-Age Children Survey (HBSC).

http://www.ndp.govt.nz/publications/illicitdrugmonitoringsystem.html – Illicit Drug Monitoring System (IDMS).

http://ndarc.med.unsw.edu.au – Illicit Drug Reporting System (IDRS) and the Ecstasy and Related Drugs Reporting System (EDRS).

http://www.incb.org – International Narcotics Control Board (INCB).

http://www.cicad.oas.org – Inter-American Drug Abuse Control Commission (CICAD).

http://www.monitoringthefuture.org – Monitoring the Future.

http://www.aihw.gov.au – National Drug Strategy Household Survey (NDSHS).

http://www.drugabuse.gov – National Institute of Drug Abuse (NIDA).

http://www.oas.samhsa.gov/nhsda.htm – National Survey on Drug Abuse and Health (NSDUH).

http://www.sahealthinfo.org/admodule/sacendu.htm – South African Community Epidemiological Network on Drug Abuse (SACENDU).

http://www.samhsa.gov – Substance Abuse and Mental Health Services Administration (SAMHSA).

http://www.unodc.org – United Nations Office on Drugs and Crime (UNODC).
http://www.unodc.org/unodc/en/cnd_questionnaire_arq.html – UNODC Annual Reports Questionnaire.
http://www.unodc.org/unodc/en/drug_demand_gap.html – UNDOC Global Assessment Programme on Drug Abuse.
http://www.unodc.org/unodc/en/drug_demand_gap_datacollection.html#core – UNDOC Lisbon Consensus.
http://www.unaids.org – United Nations Program on HIV/AIDS (UNAIDS).
http://www.who.int – World Health Organization (WHO).

Illicit Drug Use and the Burden of Disease

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Introduction

Illicit drugs are those whose nonmedical use is prohibited by international law, namely: amfetamine-type stimulants (ATS), one of a class of sympathomimetic amines with powerful stimulant action on the central nervous system (CNS); cannabis, a generic term for psychoactive preparations (e.g., marijuana, hashish, and hash oil) derived from the *cannabis sativa* plant; cocaine, an alkaloid CNS stimulant drug that is derived from the coca plant; heroin, an opioid drug derived from the opium poppy; other opioids, derivatives from the opium poppy, and their synthetic analogues, which act on the opioid receptors in the brain (they have the capacity to relieve pain and produce a sense of euphoria, as well as cause stupor, coma, and respiratory depression); and ecstasy (3,4 methylenedioxymethamfetamine, or MDMA), a synthetic drug that is used as a stimulant.

This article focuses on the burden of disease (BOD) attributable to the use of cannabis, amfetamines, cocaine, and opioids. Other substances that are illegal in most countries, such as MDMA and solvents, are not included because there is insufficient research to quantify their health risks.

Global Prevalence of Illicit Drug Use

The first challenge in quantifying the burden of disease attributable to illicit drugs is estimating the prevalence of their use. The illegality of illicit drug use makes this difficult to quantify because illicit drug users are 'hidden' and are thus difficult to identify, and even when they can be located and interviewed, they may attempt to conceal their drug use.

The United Nations Drug Control Programme (UNDCP) provides a convenient tabulation of the most recent estimates of the global prevalence of illicit drug use (**Table 1**). The quality of the data collected and reported by the UNDCP varies across countries and

Table 1 Annual prevalence (%) of illicit drug use among 15–64-year-olds (UNODC-World Drug Report 2006)

Region	*Opioids*	*No. of opioid users*	*Cocaine*	*No. of cocaine users*	*ATS*[b]	*No. of ATS users*	*Cannabis*	*No. of cannabis users*
Europe	0.7	4 030 000	0.7	3 524 000	0.5	2 700 000	5.6	30 800 000
West & Central Europe	0.5	1 565 000	1.1	3 333 000	0.7	2 185 000	7.4	23 400 000
South-East Europe	0.2	180 000	0.1	64 000	0.2	180 000	2.3	1 900 000
Eastern Europe	1.6	2 285 000	0.1	127 000	0.2	335 000	3.8	5 500 000
Americas	0.4	2 280 000	1.5	8 440 000	0.8	4 320 000	6.4	36 700 000
North America	0.5	1 300 000	2.3	6 459 000	1.1	3 190 000	10.3	29 400 000
South America	0.3	980 000	0.7	1 981 000	0.4	1 130 000	2.6	7 300 000
Asia	0.3	8 530 000	0.1	260 000	0.6	15 250 000	2.1	52 100 000
Oceania[a]	0.4	890 000	0.9	175 000	3.0	610 000	15.3	3 200 000
Africa	0.2	910 000	0.2	959 000	0.4	2 000 000	8.1	39 600 000
Global	0.4	15 840 000	0.3	13 358 000	0.6	24 880 000	3.9	162 400 000

[a]Refers to Australia and New Zealand and the islands that comprise Polynesia, Melanesia, and Micronesia.