



Drug Use Epidemiology in Latin America and the Caribbean: **A Public Health Approach**



**Pan American
Health
Organization**



Regional Office of the
World Health Organization



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Preface

Psychoactive substance use and dependence cause a significant burden to individuals and societies throughout the world. The World Health Report 2002 indicated that 8.9% of the total burden of disease comes from the use of psychoactive substances, of which 4.1% attributed to tobacco, 4.0 % to alcohol and 0.8% to illicit drugs. Much of the burden attributable to substance use and dependence is the result of a wide variety of health and social problems, social exclusion, including HIV/AIDS.

In 2004, we translated into Spanish and disseminated, in conjunction with Inter American Commission on Drug Abuse and Control (CICAD), a WHO book on the Neuroscience of Psychoactive Substance Use and Dependence, aimed at sensitizing politicians, the health, justice and social protection sectors, coordinating agencies, as well as health professionals, about the nature of substance use and dependence, as health issues which need a health response.

With this new publication we provide a regional overview of the epidemiological situation regarding substance use and dependence in Latin America and the Caribbean, where the information is most scattered and difficult to find. Knowing the extent of the problem, gaps in research and information is crucial for taking decisions regarding what to do and how to shape a public health response to these problems in the Region.

It is clear that despite the many gaps in information and knowledge, the social and health consequences of drug use are significant and should be addressed without delay with a public health approach. Inequities in development, lack of access to health services and social exclusion are key factors that underlie the harms posed by substance use and dependence. By putting health and the right to health in the centre of public policies we can make a significant impact on the lives of affected individuals, families and societies.

Mirta Roses Periago
Director
Pan American Health Organization

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Summary

This report is an epidemiological overview of drug use in the Americas and provides basic information about health consequences and disorders caused by the use of illicit drugs and the non-medical use of legal psychoactive drugs by prescription. (Tobacco and alcohol are the topics of other reports published by the Pan American Health Organization [PAHO] and are not addressed here.)

Although most studies in the report include data from North America, the report focuses primarily on the countries of Latin America and the Caribbean.

Drug-use studies in the Region are scarce and methods of collecting data are inconsistent. But several key facts make one conclusion clear: Misuse of drugs presents a vital public health concern that requires immediate attention.

At least 4.4 million men and 1.2 million women in Latin America and the Caribbean are afflicted by drug-use disorders—including drug dependence and other ailments—at some point in their lives. Annually, 1.7 million men and 400,000 women are affected.

Drug use disorders have a significant impact on the health care systems of many countries in the Region and on the health and disability profiles of men in their most productive years of life.

Although drug-related disorders are more common in the developed countries of the Americas, the health burden falls disproportionately on low- and middle-income countries, where programs for treatment and prevention are unavailable or unaffordable.

Three factors are at the heart of the problem: inequities in development, lack of access to health services and the exclusion of some segments of the population from the mainstream of society. A public health approach must therefore focus on:

- Sustainable development.
- Providing health care as a basic human right.
- Promoting programs of social inclusion for marginalized groups at high risk of drug abuse and dependence.

The social and health consequences of drug use are significant and should be addressed without delay. This report offers recommendations for improving the quality of research—the crucial underpinning for informed policy and effective programs—and argues for public health measures that would reduce the health burden of drug use.

Note: This is the first of several publications intended to inform and help shape a public health response to drug problems in Latin America and the Caribbean. In coming months, PAHO will also

1. Publish a report on resources in the Region for preventing and treating drug use disorders.
2. Publish a book on drug-use policy and public health.
3. Produce and publish a report on harm reduction and public health.

Introduction

This report is a primer on the use of illicit drugs and the use of legal, psychoactive drugs by prescription for nonmedical purposes. It provides an overview of the issue in Latin America and the Caribbean, explains the psychopharmacology of drug use, compiles and summarizes available data and offers recommendations for policies and practices to prevent and treat drug dependence.*

Although studies that include the United States and Canada are cited and reviewed, the report focuses primarily on the other countries of the Americas.

Drug use in Latin America and the Caribbean is perceived as a growing problem by both the public and politicians. But the quality and quantity of available epidemiological information pose significant problems for health care providers, policy experts and others who rely on such information to prioritize issues, develop strategies and allocate resources.

Across the Region, studies are scarce and existing data are inconsistent. The lack of information fosters misconceptions and hampers intervention. Policy analysts, program administrators and health providers need to know the scope of drug use, related problems and the profile of people who may need help. Without access to this and other epidemiological information, it is difficult to develop effective programs and assess their success or failure.

Despite shortcomings of the data, some key facts emerge, leading to one unambiguous conclusion: Drug use is a significant public concern for most countries of the Region and deserves a public health response. Consider:

- Drug-use disorders exact a costly toll on individuals and communities. Long term drug use can lead to dependence and disabling and chronic health problems. The social consequences of harmful drug use or dependence can extend far beyond the user, affecting their families and other personal relationships.
- The health and social burdens imposed are not inevitable: Drug problems and dependence are preventable and treatable.
 - When identified early, risky drug use can be reduced or curtailed through health assessments and brief interventions, before users become dependent.
 - If services are made available and affordable, drug dependence can be treated and users can be rehabilitated.

Section 1 provides a snapshot of the health effects and social costs of drug use.

Section 2 provides an overview of how drugs affect the brain and behavior and a detailed list of the health effects for each of the most commonly used drugs.

Section 3 summarizes the existing epidemiological information about drug use and drug-use disorders, focusing primarily on the countries of Latin America and the Caribbean.

Section 4 assesses the quality of current studies in the Region and offers specific recommendations for improving that data.

Section 5 makes recommendations for public health policy that would prevent and treat drug dependence and help avoid its far-reaching health consequences and social costs.

* Tobacco and alcohol, topics covered by other PAHO publications, are excluded from this report.



Snapshot

Drug Use and its Consequences in the Americas

Although epidemiological data about drug use in Latin America and the Caribbean is limited, some important facts stand out.

Illegal drugs are used more frequently in the high-income countries of the Americas, but the health consequences of drug dependence—disease, disability and death—are felt disproportionately in low- and middle-income countries, where people have less access to health care.

Death: In 2004, drug overdose and other drug-related disorders killed 9,000 people in the Americas—5,000 in high-income countries and 4,000 in low- to middle-income countries (1). (Figures do not include deaths from drug-related crimes or deaths in which illicit drug use was a risk factor.)

Disease: Drug use disorders are related to several infectious diseases, including the human immunodeficiency virus (HIV) and hepatitis B and C. Long-term drug use also increases the risk of many serious—sometimes fatal—health conditions including stroke and heart disease. Short-term excessive drug use can cause fatal cardiac arrest, or a psychotic episode. These conditions require immediate attention, but when illicit drugs are involved, users often fail to seek help because of the risk of being incarcerated.

Disability: In 2004, drug-use disorders in the Americas exacted a toll of more than 2.4 million disability-adjusted life years (DALYs)—1.1 million DALYs in high-income countries and more than 1.3 million DALYs in low- and middle-income countries (1).

Mental health: Long-term use of a psychoactive substance can cause dependence, a mental health problem in itself, and it can exacerbate other mental disorders such as depression, anxiety and schizophrenia, with a high rate of comorbidity. Drug dependence can also discourage people with mental health problems from seeking treatment, often because professionals require abstinence prior to treatment, which worsens the probable outcome.

Economic costs: In the United States in 2002, the cost of illicit drug use was an estimated US \$180.8 billion. The sum includes costs of resources to address problems of crime and health related to drug use, as well as loss of productivity due to deaths, disability and withdrawal from the workforce (2). The majority of countries in Latin America and the Caribbean do not have such estimates.

Drug use in the general population: Health professionals are often involved in overprescribing psychotropic drugs without assessing the potential for nonmedical use, contributing to the overall problem of drug misuse.

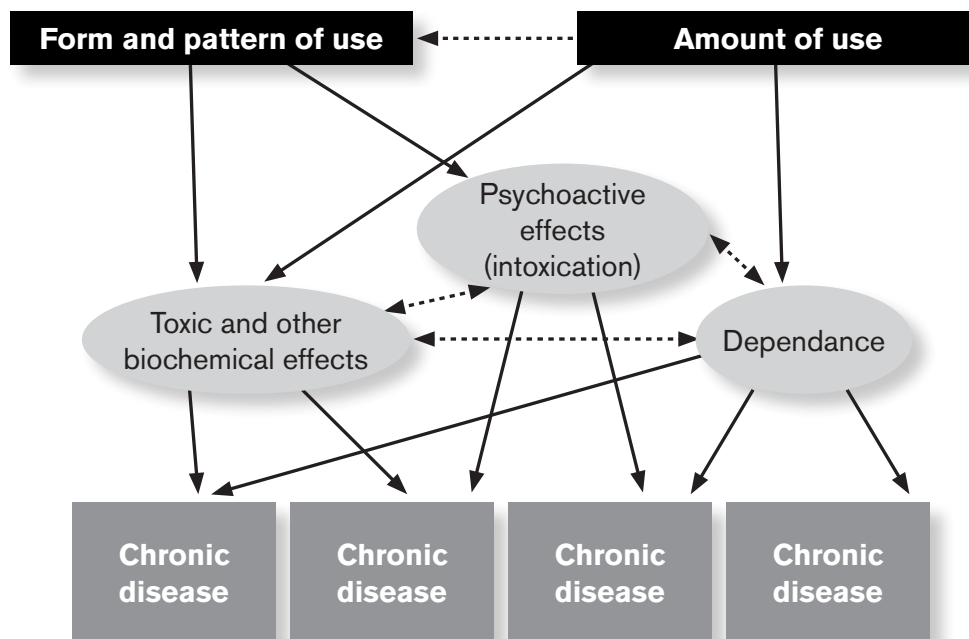
Drug use among students: Half the countries of the Region have surveyed students about their use of illegal drugs and psychoactive prescription drugs, which frequently begins in adolescence. Drug use among students is a special concern because studies indicate that school attendance serves as a protective factor and reduces the likelihood of drug use. School surveys also exclude those not attending school and may therefore underreport drug use among young people.

2 How Drugs Affect the Brain, Behavior and Health

This section provides an overview of how drug use affects behavior; the basics of drug tolerance, dependence and withdrawal; and the neuropsychological consequences of the different psychoactive drugs most commonly used in the Region. Information in this section is drawn from the World Health Organization (WHO) publication “Neuroscience of Psychoactive Substance Use and Dependence” (3) and the National Institute on Drug Abuse (NIDA) publication “The Neurobiology of Drug Addiction” (4), except where noted.

The damage caused by drugs can result from short-term use—typically related to intoxication, including overdose—and long-term use, which can lead to dependence or long-term health and social problems (Figure 1). The form in which users administer or consume a drug can also have health consequences. Most particularly, users who inject drugs and share needles or other paraphernalia with other users increase their risk of transmitting or contracting HIV, hepatitis B and C, and of developing infections at the injection site. Reusing unclean needles and syringes can also lead to vein damage and infections.

FIGURE 1. Mechanisms relating drug use to health and social problems



Source: WHO Neuroscience report, 2004 (3)

Tolerance, dependence and withdrawal

Tolerance

When drugs are used repeatedly, users typically develop tolerance and no longer respond to the drug the way they responded initially. Drug tolerance requires that users consume larger amounts of the drug to achieve the level of response they obtained when first using it.

Dependence

When a drug is used repeatedly, neurons in the brain adapt and function normally only in the presence of that drug. This, in turn, sometimes leads to cravings and compulsive use.

Withdrawal

Another psychopharmacological process, withdrawal, is marked by unpleasant physical and psychological symptoms when a drug is abruptly reduced or discontinued. Symptoms of withdrawal range from mild (as when a coffee drinker reduces or discontinues caffeine) to life-threatening.

Common psychoactive drugs and their effects

The most common psychoactive drugs can be divided into four categories.

- **Hallucinogens:** Cannabis, PCP and LSD
- **Stimulants:** cocaine, amphetamines and ecstasy
- **Opioids:** morphine and heroin
- **Depressants:** alcohol, sedatives/hypnotics and inhalants/volatile solvents

All psychoactive drugs affect brain circuits involved in learning and memory, reward and motivation and control of behavior. In other ways, however, drugs from different categories vary widely: they bind to different types of brain receptors and affect the activity of neurons through a range of different mechanisms. These differences influence the behavioral effects the drug produces, the rate at which a user develops tolerance for and dependence on a particular drug, the symptoms of withdrawal and the health consequences of short- and long-term use.

Diagnosing drug dependence

Worldwide, there are two main diagnostics systems for diagnosing drug-use disorders:

- The World Health Organization International Classification of Diseases (ICD), currently in its tenth revision—ICD-10 (5).
- The American Psychiatric Association Diagnostic and Statistical Manual (DSM), currently on its fourth revision—DSM-IV (6).

(Note: The pharmacological definition of dependence is narrower than the definition employed by these systems.)

Both the DSM-IV and the ICD-10 require that three or more criteria be met before a diagnosis of dependence can be made (Figure 2). If three criteria are not met, the DSM-IV provides for an alternative diagnosis of substance abuse; the ICD-10 provides for an alternative diagnosis of harmful use.

FIGURE 2. DSM-IV and ICD-10 Diagnostic Criteria

	DSM-IV	ICD-10
Clustering Criterion	A maladaptive pattern of substance use, leading to clinically significant impairment or distress, as manifested by three or more of the following occurring at any time in the same 12-month period:	Three or more of the following: occurring together for at least 1 month, or if less than 1 month, occurring together repeatedly within a 12-month period:
Tolerance	Need for markedly increased amounts of the substance to achieve intoxication or desired effect; or markedly diminished effect with continued use of the same amount of the substance.	Need for significantly increased amounts of the substance to achieve intoxication or desired effect; or markedly diminished effect with continued use of the same amount of the substance.
Withdrawal	The characteristic withdrawal syndrome for the substance (or a closely related substance) or drinking to relieve or avoid withdrawal symptoms.	Physiological symptoms characteristic of the withdrawal syndrome for the substance; or use of the substance (or closely related substance) to relieve or avoid withdrawal symptoms.
Larger amounts or longer periods than intended	Substance use in larger amounts or over a longer period than intended.	Difficulties in controlling substance use in terms of onset, termination, or levels of use; substance use in larger amounts or over a longer period than intended; or a persistent desire or unsuccessful efforts to reduce or control substance use.
Impaired control of substance use	Persistent desire or one or more unsuccessful efforts to cut down or control substance use.	(Included above)
Neglect of other activities	Important social, occupational, or recreational activities given up or reduced because of substance use.	Important alternative pleasures or interests given up or reduced because of substance use, OR
Time spent in substance-related activity	A great deal of time spent in activities necessary to obtain, use or recover from the effects of substance use.	A great deal of time spent in activities necessary to obtain, use or recover from the effects of substance use.
Continued use despite the problems that use causes	Continued use despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to be caused or exacerbated by substance use.	Persisting with use despite clear evidence and knowledge of harmful physical or psychological consequences.
Compulsion (craving)	(None)	A strong desire or sense of compulsion to use the substance.
Duration	No duration criterion is separately specified, but several dependence criteria must occur repeatedly as specified by duration qualifiers associated with criteria (e.g. "persistent," "continued").	Three or more of dependence criteria occurring for at least 1 month; or, if less than 1 month, occurring together repeatedly within a 12-month period.

Drug-use disorders are linked to health and social harm. People usually use psychoactive substances because they want a benefit—to avoid pain or experience pleasure. But using psychoactive drugs also carries the potential for harm—not merely harm caused by the drug's toxic effect, but harm from long-term use, and harm associated with the increased risk of negative social consequences, such as the increased risk of being incarcerated for drug possession.

Health consequences by type of drug

Health consequences vary depending on the drug and whether it is used sporadically, with intoxicating effect, which can result in a drug overdose, or over a long period of time, often resulting in drug dependence. The list of the health risks below is drawn from “The Alcohol, Smoking and Substance Involvement Screening Test (ASSIST): Guidelines for Use in Primary Care” (7).

► *Cannabis*

Globally, cannabis—more commonly known as marijuana—is the most widely used illicit drug. Classified as a hallucinogen, cannabis is associated with a number of health risks. Although overdose and toxicity are possible, cannabis carries a very low risk of causing death. In combination with other drugs, however, the likelihood may increase.

Acute intoxication of cannabis is associated with increased risk of

- Anxiety.
- Dysphoria.
- Impaired attention and memory.
- Increased risk of accident and injury.
- Nausea.
- Panic.
- Paranoia.

Smoking cannabis regularly creates many of the same cancer risks as tobacco. Risks include lung cancer and the upper respiratory system and cancer of the digestive system.

Regular use increases the risk and/or the severity of

- Asthma.
- Bronchitis.
- Cancer of the digestive system.
- Cancer of the lungs and upper respiratory system.
- Depression.
- Emphysema.
- Heart disease.
- High blood pressure.
- Impaired memory.
- Impaired problem-solving ability.

- Loss of motivation.
- Reduced libido.

People with a personal or family history of schizophrenia are also at increased risk of experiencing psychosis.

► *Cocaine*

Use of cocaine, a stimulant, is associated with a wide range of physical and mental health problems and with risky behavior including participating in unsafe sex, which in turn increases the likelihood that users and their sexual partners will contract sexually transmitted diseases and blood-borne viruses. Repeatedly using high doses of cocaine can lead to psychosis. There is also a significant risk of toxic complications, overdose and sudden death, usually due to heart failure. Combination with alcohol significantly increases cardiovascular and liver toxicity.

The most common physical problems associated with using cocaine include

- Clammy skin.
- Exhaustion.
- Headaches.
- Increased risk of accident and injury.
- Numbness and/or tingling.
- Reduced immunity to infection.
- Repetitious scratching or picking at skin.
- Weight loss.

Psychological problems may include

- Anxiety.
- Depression.
- Difficulty sleeping.
- Mood swings.
- Impaired memory.
- Paranoia.
- Violent or aggressive behavior.

► *Amphetamine-type stimulants (ATS)*

The effects of amphetamine-type stimulants—amphetamine, dexamphetamine, methamphetamine and ecstasy—are similar to cocaine although the pharmacological profiles of these drug classes differ.

Health problems and risks include

- Brain hemorrhage.
- Cardiovascular stress, which can lead to sudden death.
- Dehydration.
- Difficulty sleeping.
- Headaches.
- Impaired resistance to infection.
- Irregular heartbeat.
- Jaw clenching.
- Liver damage.
- Loss of appetite, resulting in weight loss.
- Muscle pain.
- Shortness of breath.
- Tremors.

Mental health effects include

- Agitation.
- Difficulty concentrating.
- Hallucinations.
- Impaired memory.
- Mood swings including anxiety, depression, exhilaration, panic and mania.
- Paranoia.
- Violent or aggressive behavior.

Using high doses of methamphetamines over a long span of time also increases the risk of malnutrition and can cause permanent damage to brain cells.

► *Sedatives and hypnotics*

Sedatives, hypnotics and sleeping pills include benzodiazepines and related compounds. All are depressants. They are typically prescribed to help people sleep, or to manage anxiety or other mood disorders, or cope with muscle pain, seizures and trauma. Sedatives and hypnotics can cause problems, particularly when used more frequently or at higher doses than prescribed. Symptoms of withdrawal include severe anxiety and panic, insomnia, depression, headache, sweating and fever, nausea, vomiting and convulsions.

Benzodiazepines are extremely unlikely to cause death from overdose, even when very large doses are consumed. However, when combined with substances such as alcohol, other depres-

sant drugs or opioids, the risk of overdose and death increases significantly.

Use of sedatives and sleeping pills may be associated with

- Confusion, drowsiness and dizziness.
- Depression.
- Headaches.
- Impaired balance, unsteady gait, and increased risk of falling.
- Nausea.

► *Opioids*

Opiates are compounds extracted from the poppy seed. Opioids have a morphine-like action in the body, and reduce pain by slowing the central nervous system functions. Both legally prescribed opioids and the “street” version—heroin and opium—can create numerous health problems. People who use prescription opioids are particularly at risk if they use the drugs more frequently or at higher doses than prescribed. Overdose occurs when the amount of opioid depresses the respiratory system, which can cause the user to slip into a coma and die. The risk of overdose is significantly higher if a user also consumes alcohol or takes other sedatives.

Effects of short-term use include

- Constipation.
- Difficulty concentrating.
- Drowsiness.
- Impaired memory.
- Itching.
- Nausea and vomiting.
- Shallow breathing or difficulty breathing.

Effects of long-term use include

- Depression.
- Impotence.
- Irregular menstrual periods in women.
- Reduced libido.
- Respiratory failure, resulting in death.

Withdrawal symptoms include diarrhea, stomach cramps and vomiting; high blood pressure and rapid pulse; racing thoughts; sweating and/or goose bumps; yawning, runny nose and teary eyes.

► *Inhalants/volatile solvents*

Inhalants, or volatile solvents, are classified as depressants. They are found in many home and workplace products: cigarette lighters, refill canisters, aerosols, solvent-based glues, chemical thinners, correction fluids and dry-cleaning fluids. Inhalants are associated with range of severe effects, both short- and long-term. Inhaling large quantities can cause confusion and disorientation, delusions, slurred speech, weakness, tremors and visual hallucinations. Ultimately, using inhalants can cause a coma or death from a heart attack.

Effects of short-term use include

- Anxiety or other mood disorders.
- Blurred vision.
- Coma.
- Death from heart failure.
- Delirium.
- Diarrhea.
- Disorientation and drowsiness.
- Headaches.
- Impaired coordination and responsiveness.
- Loss of self control.
- Muscle pain.
- Nausea and vomiting.
- Reduced oxygen supply to the body.
- Seizures.
- Unpredictable and sometimes dangerous behavior.
- Unconsciousness.

Long-term use can cause

- Aggressive behavior.
- Chronic headaches, sinus problems, nosebleeds, persistent coughing and red, watery eyes.
- Depression.
- Extreme tiredness.
- Flu-like symptoms.
- Indigestion and stomach ulcers.
- Memory loss and confusion.
- Organ damage (to heart, lungs, liver and kidneys).
- Trembling and tremors.

► *Hallucinogens (other than cannabis)*

The effects of hallucinogens are unpredictable and can vary among users or on different occasions. Hallucinogens can cause flashbacks—spontaneous recurrences of the effects of using hallucinogens in the past. Long-term use may increase the effects of mental health problems such as schizophrenia.

Using hallucinogens can cause

- Changes to the senses: auditory, visual, olfactory and tactile.
- Difficulty sleeping.
- Hallucinations.
- Increased heart rate and blood pressure.
- Mood swings, including anxiety, panic, exhilaration and paranoia.
- Muscle weakness.
- Nausea and vomiting.
- Numbness.
- Seizures.
- Tremors and twitching.

Ecstasy (MDMA), both a hallucinogen and an amphetamine-type stimulant, is associated with a range of very rare but life-threatening conditions including

- Brain hemorrhage.
- Disturbances to the body's salt and water balance.
- Liver damage.
- Hyperthermia (very high body temperature).

Ecstasy may also lead to chronic mental health problems including impaired memory, depression, panic disorders, delusions, and "flashbacks." There is growing evidence that ecstasy is a neurotoxin, causing nerve damage to the brain.



High risks of injecting drugs

Injecting drugs—referred to in the literature as *injecting drug use*, or IDU—is an especially high-risk activity, increasing the likelihood of developing severe drug dependence or contracting HIV or hepatitis. Injecting stimulants carries yet another risk: the possibility of drug-induced psychosis.

Increased risk of drug dependence

People who inject drugs increase their risk of becoming dependent. They are also more likely to become severely dependent than users who consume the drug using another method.

Increased risk of blood-borne diseases and infections

People who share needles with other users or who use contaminated equipment when injecting drugs significantly increase their risks for contracting blood-borne diseases such as HIV/AIDS and hepatitis B and C and are at higher risk of developing infections at the injection site.

Injecting stimulants: Special issues

People who inject stimulants such as amphetamines and cocaine increase their risks of drug-related psychosis. Injecting cocaine intravenously also puts users at much higher risk of developing problems with their veins, which shrink. This, in turn, makes it very difficult to inject the drug into a vein, and increases the risk that users will inject it under their skin (subcutaneously), into an abscess or cellulite (7, 8).

Summary of Studies on Drug Use and Associated Disorders

3

Epidemiological information is a critical piece of any health-care policy or program, essential to allocating resources, developing prevention and treatment strategies and monitoring their effectiveness (9). In Latin America and the Caribbean, however, data is scarce and existing studies are often inconsistent, making it impossible to compare data country-to-country, or identify and analyze patterns and draw conclusions.

This section summarizes available information on drug use in the Region and compiles mortality and morbidity estimates attributable to use of illegal drugs. Due to deficiencies in the data, the section provides limited comparisons and analyses. As a general trend, however, lifetime and 12-month prevalence of drug use and drug-use disorders in Latin America and the Caribbean are significantly lower than in North America. Based on data drawn from treatment admissions they appear to affect disproportionately more men than women, though due to a number of social factors, women are less likely to present for treatment and therefore remain undercounted.

Most of the mortality and morbidity information is summarized from WHO's comparative risk assessment analysis (10); the remainder is drawn from a search of major databases and non-indexed literature. Estimates are presented at the country level or at the level of WHO regions/subregions (11).

Burden-of-disease outcomes were estimated at the regional level using WHO subregions and based on epidemiological research of risk relations among different disease categories and the use of amphetamines, cocaine and opiates. Drugs such as ecstasy, solvents and cannabis were not included in the analysis because there was too little research information to quantify the health risks associated with them (10).

Regional overview

In the Americas and around the world, the most widely used illicit drugs are cannabis, cocaine, amphetamine-type stimulants and opiates (13).

Substance	Users in the Americas	Users worldwide
Cannabis	37.6 million	162 million
Cocaine	8.6 million	14.3 million
Amphetamine-type stimulants		
• Amphetamines	5.7 million	25 million
• Ecstasy	2.7 million	10 million
Opiates, including	2.1 million, including	16 million, including
• Heroin	• 1.5 million heroin users	• 11 million heroin users

In Latin America and the Caribbean, inhalants/volatile solvents displace opiates as the fourth most widely used category of drugs.

Use of illicit drugs as a factor in DALYs

Use of illicit drugs ranked as the eighth leading factor in DALYs in the Americas in 2000, corresponding to .018 percent of the total burden of disease (12). However, when considering just the countries of Latin America and the Caribbean, the ranking dropped. Illicit drug use was not among the 20 leading factors in the DALYs of the Region. Its contribution to the total burden of disease was 0.014 percent (Rankings are based on drug-related mortality and morbidity, not on deaths caused by drug-related violent crime).

Prevalence of drug use

Tables 1 through 4 show the prevalence of drug use in various countries. Note: Using a drug does not necessarily create a health problem, and only a small portion of people who used a substance in the last year are frequent drug users whose habits involve a significant risk for their health. However, use of illegal drugs always presents a risk of creating social problems and legal consequences.

The data from the surveys are not easily compared. There are variations in the countries, in the age range of the populations, in the year the data was collected and the manner in which questions were asked.

Table 1 summarizes the United Nations Office on Drug and Crime (UNODC) estimates of annual prevalence of illicit drugs (opiates, cocaine, marijuana, amphetamine and ecstasy) in the Americas, by country. In "The World Drug Report," UNODC estimates the prevalence of illicit drug use in each country based on local studies, law enforcement agency assessments and surveys of special population groups. (In some instances, the estimates are tentative.) Data on consumption of illicit drugs in the Americas was obtained primarily from Annual Reports Questionnaires that governments sent to UNODC. When necessary, that information was supplemented by other sources, if available. Details on the methodology are described in the report (13).

TABLE 1. Prevalence of drug use in previous 12 months as a percentage of the population ages 15-64, unless otherwise indicated; reference year indicated in parenthesis

	Opiates	Cocaine	Cannabis	Amphetamines	Ecstasy
Central America					
Belize	–	0.7 (2002)*	6.7 (2003)*	–	0.2 (2003)*
Costa Rica	0.1*	0.4 (2001)	1.3 (2000/1) 12-70	1.0 (2000)	–
El Salvador	0.1 (2005)*	0.4 (2005) 12-65	2.7(2005) 12-45	3.0 (2003)12-65	0.1 (2003)*
Guatemala	0.04(2005)	0.2(2005)	4.8 (2005)12-65	0.9(2005)*	0.1 (2005)*
Honduras	0.2 (2005)	0.9 (2005) 12-35	1.5 (2004)*	0.8 (2005)*	0.1(2005)*
Nicaragua	–	1.0 (2003)*	2.2 (2002)*	0.8 (2003)*	0.1 (2003)*
Panama	0.2 **	1.2 (2003) 12-65	4.0 (2003)*	0.6 (2003)*	0.4 (2003)*
North America					
Canada	0.3 (2005) 15-64	2.3 (2004)15-64	17.0 (2004) 15-64	1.0 (2004)15-64	1.3 (2004)15-64
Mexico	0.1 (2002)	0.8 (2006)	3.1 (2006)*	0.4 (2006)*	0.01 (2002)
USA	0.6 (2000) 15-64	3.0 (2006)15-64	12.2 (2004) 15-64	1.6(2006)15-64	1.0 (2006) 15-64
South America					
Argentina	0.2 (2005)	2.6 (2006)12-64	6.9(2006) 12-65	0.6 (2005)*	0.5 (2004)12-65
Bolivia	0.07 (2004)**	1.9 (2005) 12-50	3.2 (2005)	0.3 (2004)*	0.1 (2005)
Brazil	0.5 (2005)12-65	0.4 (2001) 12-64	2.6 (2005) 12-65	0.7 (2005) 12-65	0.2 (2005)*
Chile	0.2 (2004)	1.5 (2006)12-64	7.0 (2006)12-64	0.4 (2006)12-64	0.1 (2006)12-64
Colombia	0.1 (2004)*	0.8 (2003) 18-65	1.9 (2003) 18-65	0.5 (2005)*	0.2 (2005)*
Ecuador	0.1 (2005)*	1.2 (2005)*	2.1 (2005)*	0.2 (2005)*	0.2 (2005)*
Guyana	0.3(2002)*	–	2.6 (2002)*	–	0.1 (2002)*

TABLE 1. *Continues*

	Opiates	Cocaine	Cannabis	Amphetamines	Ecstasy
Paraguay	–	0.3 (2004)	1.6 (2005) 12-65	0.5(2005)*	0.1 (2005)*
Peru	0.2 (2005)12-64*	2.2 (2005)12-64	3.3 (2005) 12-64	0.1 (2005)*	0.9 (2005)12-64
Suriname	0.08 (2002)*	0.5 (2002)*	2.0 (2002)*	0.6 (2002)*	0.1 (2002)*
Uruguay	0.2 (2003)*	1.4 (2006)12-65	5.2 (2006) 12-65	0.3 (2006)12-65	0.1 (2003)*
Venezuela	0.1 (2003)*	1.1 (2001)*	3.3 (2002)*	0.6 (2002)*	0.2 (2006)*
The Caribbean					
Antigua Barbuda	0.05 (2000)	0.1 (2000)	–	–	–
Aruba	–	1.3 (1997)*	–	–	–
Bahamas	0.2 (2003)*	0.8 (2001)*	4.70 (2003)*	0.3 (2003)*	0.1 (2003)*
Barbados	0.1 (2006)**	0.4 (2007)*	8.30(2007)*	0.2 (2007)*	0.5 (2007)
Cayman	–	0.6 (2000)*	–	–	–
Dominican Republic	0.1 (2001)*	0.9 (2000) 12-70	1.90(2000)	1.1 (2003)*	0.2 (2000)*
Grenada	–	0.9 (2003)*	6.70 (2003)*	0.7 (2005)	–
Haiti	–	0.9 (2006)*	6.20(2005)	–	–
Jamaica	0.1(2001)*	1.1 (2006)*	10.70 (2001)12-55*	–	–
St. Lucia	–	1.0 (2002)*	9.00 (2006)*	–	–
St. Vincent	–	0.7 (2002)*	-6.20 (2002)*	–	–
Turks & Caicos Islands	0.07 (2002)*	0.7 (2002)*	–	0.3 (2003)*	0.7 (2003)*

* UNODC estimates based on local studies, special population group studies, and/or law enforcement agency assessments.

** Tentative estimates.

Sources: Annual reports questionnaires, government reports, U.S. Department of State, European Monitoring Center for Drugs and Drug Abuse (EMCDDA).

Tables 2 and 3 compile results from general-population surveys and student-population surveys, respectively, conducted by the Inter American Commission on Drug Control (CICAD, an acronym drawn from its name in Spanish). Both tables also include data collected from national

surveys sponsored by the government of Mexico. Table 2 (<http://www.cicad.oas.org/oid/esp/statisticscountryprofileindex.asp>).

Table 3 (<http://www.cicad.oas.org/oid/esp/statisticscountryprofileindex.asp>).

TABLE 2. Lifetime and 12-month prevalence of drug use based on general-population surveys

Country and year	Cannabis		Cocaine		Coca paste		Ecstasy	
	Lifetime	Last Year	Lifetime	Last Year	Lifetime	Last Year	Lifetime	Last Year
Argentina (2006)	15.8	6.9	7.9	2.6	1	0.5	1.4	0.5
Bolivia (2005)	6.2	3.2	2.4	1.6	2.5	1.9	ND	ND
Brazil (2005)	8.8	2.6	2.9	0.7	ND	ND	0.19	ND
Chile (2006)	24.3	7	5.9	1.2	2.6	0.6	0.4	0.1
Costa Rica (2006)	7.5	1	1.82	0.2	ND	ND	0.2	0
El Salvador (2005)	6.1	0.35	1.9	0.2	0.3	0.08	0.17	0
Guatemala (2005)	2.8	0.13	0.8	0.12	0.3	0.08	0.03	0
Nicaragua (2006)	7.9	1.06	2.5	0.3	0.5	0	0.02	0
Mexico (2002)*	3.5	0.6	1.2	0.3	ND	ND	ND	ND
Mexico (2008)**	4.2	1.0	2.4	0.4	ND	ND	0.5	0.1
Uruguay (2006)	12.2	5.2	4	1.4	0.8	0.3	0.7	0.1

ND - No data.

* Ref.14 ** Ref.15

TABLE 3. Lifetime and 12-month prevalence of drug use based on school surveys of students ages 13-17

Country and year	Cannabis		Cocaine		Coca paste		Inhalants	
	Lifetime	Last year	Lifetime	Last year	Lifetime	Last year	Lifetime	Last year
Antigua and Barbuda (2005)	24.9	13.4	1.7	1	0.6	0.9	13.4	4
Argentina (2005)	8.7	5.4	3.4	2.1	2.5	1.4	4.2	2.3
Barbados (2006)	17.4	10.6	2	0.9	1	N/A	19.6	9.8
Bolivia (2004)	ND	2.7	ND	0.9	ND	0.7	ND	1.2
Brazil (2004)	5.9	4.6	2	1.7	ND	ND	15.5	14.1
Chile (2005)	19.9	15.2	4.7	2.9	3.7	2.6	6.2	3
Colombia (2004)	7.6	6.6	1.8	1.6	1.4	1.2	3.8	3.3
Costa Rica (2006)	6.9	4.5	1.3	0.9	ND	ND	5.9	2.9
Dominica (2006)	29.4	17.9	ND	ND	ND	ND	7.8	3.9
Ecuador (2005)	7.9	4.1	2.5	1.3	1.9	0.9	5.8	2.5
Grenada (2005)	27.5	15.9	1.5	1	ND	ND	9.7	5.6
Guyana (2002)	6.8	3.5	0.7	0.3	ND	ND	6.9	3.5
Honduras (2005)	2.9	1.06	ND	ND	0.32	0.16	1.9	0.6
Jamaica (2006)	25.1	14.6	3.2	2.1	2.8	1.4	27.8	13.7
Mexico, capital only (2006)*	8.8	5.8	3.3	1.5	ND	ND	6.7	4.4
Paraguay (2005)	4.2	3	1	0.7	ND	ND	2.8	1.5
Peru (2005)	4.6	2.7	1.7	1.04	1.3	0.8	4.5	1.8
Saint Lucia (2005)	25.5	15.9	1.5	0.8	ND	ND	9.7	5.7
St. Vincent and the Grenadines (2006)	17.8	11.7	0.6	0.3	0.3	ND	5.2	3.3
Suriname (2006)	6.8	4.1	0.6	0.2	0.7	0	7.3	3.4
Trinidad and Tobago (2006)	12	6.5	0.8	ND	ND	ND	26.4	13.4
Uruguay (2005)	12.8	9.5	2.5	1.5	1.2	0.6	3	1.6
Venezuela (2005)	1.5	1	0.5	0.34	0.4	0.3	ND	ND

ND - No data.

* Ref. 16

Table 4 shows a compilation of results from surveys conducted in the Region as part of the WHO/PAHO Global School Health Survey Information is arranged by country and year data were

collected. Students were asked if they had used any illegal substance once or more in their lifetime (lifetime prevalence). The questionnaires were anonymous and confidentiality was guaranteed.

TABLE 4. Lifetime prevalence of any illegal drug use among students ages 13-15, by sex, by country; from the Global School Health Survey

Country and year	% who used illicit drug at least once during their life					
	Both sexes		Boys		Girls	
	%	standard deviation	%	standard deviation	%	standard deviation
Argentina (2007)	9.0	± 3.1	11.6	± 4.1	6.7	± 3.1
Cayman Islands (2007)	15.6		20.3		10.3	
Chile /Metropolitan (2004)	10.1	± 2.4	10.7	± 2.0	9.5	± 3.5
Chile/Region I (2004)	9.0	± 2.9	9.5	± 2.5	8.5	± 4.2
Chile/Region V (2004)	8.3	± 2.5	9.4	± 3.4	7.0	± 2.2
Chile/Region VIII (2004)	7.2	± 2.0	7.8	± 2.5	6.3	± 2.3
Colombia/Bogotá (2007)	10.8	± 2.8	13.7	± 3.3	8.3	± 3.4
Colombia/Bogotá Public schools (2007)	10.4	± 3.7	13.7	± 4.0	8.0	± 4.3
Colombia/Bogotá Private schools (2007)	12.4	± 5.7	17.2	± 7.4	8.9	± 5.6
Colombia/Bucaramanga (2007)	6.8	± 1.5	8.6	± 2.4	5.2	± 2.4
Colombia/Cali (2007)	17.8	± 2.4	21.1	± 4.2	15.1	± 2.6
Colombia/Manizales (2007)	21.0	± 3.0	21.1	± 4.3	20.8	± 2.9
Colombia/Valledupar (2007)	3.5	± 1.1	4.5	± 1.8	2.8	± 1.4
Ecuador/Guayaquil (2007)	7.7	± 2.3	9.9	± 2.9	5.7	± 2.5
Ecuador/Quito (2007)	5.5	± 1.5	7.0	± 1.9	4.1	± 2.1
Ecuador/Zamora (2007)	3.1		4.2		2.0	
Grenada (2008)	13.9	± 2.6	21.9	± 3.9	7.8	± 2.7
Guyana (2004)	11.7	± 2.8	17.7	± 4.5	5.9	± 2.5
St. Lucia (2007)	22.0	± 3.0	29.7	± 4.5	15.8	± 3.6
St. Vincent and the Grenadines (2007)	19.9	± 3.2	26.9	± 4.7	13.4	± 3.6
Trinidad and Tobago (2007)	12.8	± 2.9	15.3	± 4.2	10.1	± 2.7
Trinidad (2007)	12.7	± 3.0	15.1	± 4.3	10.2	± 2.8
Tobago (2007)	14.0	± 3.3	20.0	± 5.0	9.0	± 3.0
Uruguay (2006)	8.4	± 1.7	10.5	± 2.8	6.7	± 1.7
Uruguay/Montevideo (2006)	10.6	± 3.2	13.8	± 4.6	7.6	± 2.7
Uruguay/Rest of country (2006)	6.7	± 1.9	7.4	± 3.2	6.1	± 2.1
Venezuela/Barinas (2003)	3.1	± 1.2	4.7	± 2.2	1.7	± 1.4
Venezuela/Lara (2003)	3.1	± 1.0	4.2	± 1.1	2.2	± 1.2

Note: Where there is no variance shown in the prevalence rates (Cayman Islands and Ecuador/Zamora), the entire universe of schools for that country or city was surveyed and the percentage reflects overall prevalence.

Ref. 17

Note: WHO/PAHO also supports data collection from the student population on several risk factors related to adolescent health using cohorts of boys and girls ages 13-15.

Mortality, burden of disease and problematic drug use

Variations in the quality and quantity of available data, such as found in Tables 1 through 4, impose serious problems in evaluating the mortality and burden of disease attributable to use of illegal drugs. The most common patterns of use assessed in population surveys—lifetime prevalence—are associated with only small increases in mortality or burden of disease (10), because lifetime prevalence measures the proportion of the population that has used a drug as little as once in a lifetime.

However, when illicit drugs are used more frequently and/or the quantity of drugs consumed increases, the burden of disease and the mortality risks also increase (18). Users who inject drugs daily or nearly every day over a period of years have the highest risk of fatal overdose (19) and of contracting blood-borne viral diseases (20).

Common definitions and indicators are difficult to establish due to deficiencies in the collected data and disagreements about how to define “problematic” use of illegal drugs. The WHO publication “Comparative Quantification of Health Risks: Global and Regional Burden of Diseases Attributable to Selected Major Risk Factors” provides guidance on how “problematic drug use” was defined (10). WHO adopted the definition used by the European Monitoring Centre for Drugs and Drug Addiction, which defines problematic drug use as “injecting drug use over long duration, or regular use of opiates, cocaine or amphetamines” (21).

Using that definition, problematic use of illicit drugs is associated more closely with an increased burden of disease.

Table 5 provides data on estimated prevalence of problematic drug use in the previous 12 months among people older than age 15.

TABLE 5. Problematic use of illegal drugs among people older than age 15 in previous 12 months (annual prevalence) by WHO subregion; year 2000 (Source: UNODC, derived estimates of prevalence)*

	WHO subregion AMR-A**	WHO subregion AMR-B**	WHO subregion AMR-D**
Population older than 15	255,420,000	297,625,000	44,658,000
Opioids % of population older than 15 with problematic use of illegal drug during previous 12 months	0.13%	0.03 %	0.07 %
Cocaine % of population older than 15 with problematic use of illegal drug during previous 12 months	0.78 %	0.24 %	0.43 %
Amphetamines % of population older than 15 with problematic use of illegal drug during previous 12 months	0.20 %	0.20 %	0.11 %

* Some estimates based on data from a small number of countries in the subregion.

** WHO subregions:

AMR-A—Countries in the Americas with very low child and adult mortality (Canada, Cuba and the United States).

AMR-B—Countries in the Americas with low child and adult mortality (Antigua and Barbuda, Argentina, Bahamas, Barbados, Belize, Brazil, Chile, Colombia, Costa Rica, Dominica, Dominican Republic, El Salvador, Grenada, Guyana, Honduras, Jamaica, Mexico, Panama, Paraguay, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Suriname, Trinidad and Tobago, Uruguay, Venezuela).

AMR-D—Countries in the Americas with high child and adult mortality (Bolivia, Ecuador, Guatemala, Haiti, Nicaragua, Peru).

Mortality and morbidity: the cost to society

Drug use contributes to the burden of disease by causing premature death and significant health consequences. People who use illegal drugs are more likely to die prematurely from drug overdose, HIV/AIDS, suicide or trauma than their age peers who do not use drugs. They are also more likely to live with a disability for at least part of their lives (10).

Major health effects attributable to the use of illicit drugs include HIV/AIDS, hepatitis B and C, drug dependence, non-lethal overdose, attempted suicide and injuries due to trauma (caused by incidents such as being involved in an automobile accident as result of drug use). The degree to which drug-related morbidity contributes to the total burden of disease is difficult to measure and probably underestimated (10). But according to an analysis of drug use in the United States (2), the societal costs of drug-induced morbidity are many times greater than the costs of drug-induced mortality.

Survey findings by type of drug

► Opiates

Table 6 shows the estimated number of people in the Americas who used opiates and/or heroin in the previous 12 months (13).

In **Brazil**, 600,000 people (0.05 percent of the population between ages 12 and 65) report having used opiates at least once in life (13). Ac-

ording to results of a 2005 national household survey, Brazil is the largest market in South America for opiates—primarily synthetic opiates.

The results of a household survey of Brazil's 107 largest cities, covering 41.3 percent of the country's population, show an estimated 1.4 percent lifetime prevalence rate for opiates and an estimated 0.1 percent lifetime prevalence rate for heroin (21) (Both rates are low-precision estimates.).

In **Mexico**, studies show that heroin consumption is increasing in areas bordering the United States and that a significant proportion of users inject the drug, engaging in unsafe practices such as sharing needles, which puts them at high risk for blood-borne viruses such as HIV and hepatitis (22). Heroin is the most common drug among users who inject.

Instances of heroin use also appear in other parts of Mexico (23). In a study conducted in 2000 **in a prison in Ciudad Juarez**, 69.8 percent of prisoners had used heroin in their life; of that group, 26.4 percent had used heroin in the last six months (24).

Several factors may contribute to heroin use in Mexico, particularly in U.S. border cities: increased cultivation of opium poppy in some Mexican states, lower prices for black tar heroin and tighter security at border crossings between Mexico and the United States (22).

TABLE 6. Estimated number of people in the Americas who used opiates/heroin in previous 12 months (annual prevalence); year 2006

	All opiates (including heroin), annual prevalence		...Heroin only, annual prevalence	
	Number who use opiates	Opiate users as % of population ages 15-64	Number who use heroin	Heroin users as % of population ages 15-64
The Americas	2,180,000	.4 %	1,520,000	.3 %
North America	1,330,000	.5 %	1,270,000	.4 %
South and Central America, Caribbean	850,000	.3 %	250,000	.1 %

Source: UNODC World Drug Report, 2008 (13)

TABLE 7. Estimated number of people in the Americas who used cocaine in previous 12 months (annual prevalence); year 2006 or latest year available

	Number of cocaine users, annual prevalence	Users as % of population ages 15-64, annual prevalence
The Americas	10,196,000	1.74 %
North America	7,097,000	2.42 %
South and Central America and the Caribbean	3,099,000	1.05 %

Source: UNODC World Drug Report, 2008 (13)

► Cocaine

Table 7 shows the estimated number of people in the Americas who used cocaine in the previous 12 months (annual prevalence).

In Latin America and the Caribbean, cocaine use is increasing: Six countries in the Region reported rates were climbing and four reported rates were stable. None reported a decline in rates (25). The survey found 12-month prevalence rates had increased from 0.4 percent in 2001 to 0.7 percent in 2005 (26).

In **Brazil** a national household survey in 2001 found that lifetime prevalence for cocaine hydrochloride (HCL) was 2.3 percent, and 0.4 percent for crack (21). Crack smokers were more likely than other cocaine users to be poorly educated, unemployed, homeless, and to consume larger quantities of drugs, according to the survey. They were also more frequently incarcerated and more likely to use drugs while in prison (27).

Cocaine use in Brazil is substantially higher in some subsets of the population. For instance, a survey of users being treated at **public psychiatric hospitals in São Paulo**, Brazil's largest city, found that 29.8 percent had snorted cocaine at some point during their lifetime and 38.4 percent had used crack. Compared to people who used other forms of cocaine, crack smokers were more likely to be unemployed, homeless and poorly educated; to consume larger amounts of the drug; and to be incarcerated more often. They also more often reported using drugs while in prison (27).

In another São Paulo study, conducted at a juvenile rehabilitation center, 57 percent of the teen-

agers surveyed reported having used cocaine; 42 percent reported having used crack (28).

In **Brazil's schools**, the level of cocaine use remained stable between 1997 and 2004, the most recent year for which school data is available (29).

In **Chile**, a national survey in 2004 conducted by the *Consejo Nacional para el Control de Estupefacientes* (CONACE), showed that the 1.3 percent has used cocaine HCL and 0.6 percent had use cocaine paste (30). But use among **students** was higher. The study showed that 2.9 percent of the students surveyed had used HCL within the past 12 months. During that same period, 2.6 percent had used cocaine paste.

Use among **prisoners** was substantially higher than among students or the population at large. The 2004 national survey showed that more than half of prisoners (57 percent) had used cocaine in the past and one in four (25 percent) used it frequently. In the same survey, 44 percent of prisoners reported they had used cocaine HCL; 10 percent reported frequent use. Finally, 5 percent reported that they injected drugs.

Overall, cocaine use in Chile appears relatively stable. Use climbed during the 1990s, but in annual household surveys conducted between 2000 and 2004, the 12-month prevalence rate among the general population fell slightly—from 1.9 percent in 2000 to 1.7 percent in 2004. Cocaine use among students in Chile also remained stable, according to results of surveys in 2001 and 2005.

In **Colombia**, for the most recent years in which data is available, cocaine use has been stable. Student surveys in 1997 and 2004 indicated

virtually no change in lifetime, 12-month, one-month and one-week rates of prevalence. The prevalence rates in 1997 and 2004, respectively, were: lifetime—2.7 percent vs. 2.8 percent; 12-month—2.2 percent vs. 2.3 percent; one-month—1.8 both periods; and previous week—1.2 percent vs. 1.1 percent (31).

In **Mexico**, among those who live in cities, the 12-month prevalence rate was 0.38 percent in 2002, down from 0.48 percent in 1998 (32).

Regional differences in Mexico are strong, the 2002 study showed. The highest rates of cocaine use were in the northern provinces of Mexico, particularly in provinces bordering the United States, where 3.1 percent of people surveyed said they had used cocaine at least once in their life. In central and southern Mexico the lifetime prevalence rates were much lower—just 0.7 percent in central Mexico and 0.5 percent, in southern Mexico.

► **Cannabis (marijuana)**

Table 8 shows the estimated number of people in the Americas who used cannabis (marijuana) in previous 12 months (annual prevalence). Use in South American countries is increasing, according to recent reports.

A general-population study in **Brazil** in 2005 showed that 6.9 percent has used marijuana at least once during their lifetime. The percentage who had used it in the previous 12 months was 2.6 percent, up from 1 percent in 2005 (26). Among teenagers in a juvenile rehabilitation center in São Paulo, lifetime prevalence was 83 percent (28).

In **Ecuador**, a study of college students shows a lifetime prevalence rate of 3 percent (32). The study also indicated that marijuana was the most widely used illegal drug.

Marijuana is also the most frequently used illegal substance among students in **Colombia**, according to a survey in 2004. Approximately 5.5 percent of students had used marijuana at least once in their lives; 4.4 percent had used it within the previous 12 months; 3.4 percent within the past month and 2.3 percent within the previous week. Rates of use have climbed since the mid-1990s. Between 1996/1997 and 2004, the percentage of students who reported using marijuana within the previous 12 months climbed from 1.5 percent to 4.4 percent (31).

In a national survey conducted in 2004 in **Chile** by the *Consejo Nacional para el Control de Estupefacientes* (CONACE), 5.3 percent of people reported using marijuana at least once in their life (30). Among **prisoners**, the rate was substantially higher: 88 percent of prisoners surveyed had used the drug.

Among **students**, 15.2 percent said they had used marijuana in the previous 12 months.

In **Mexico**, use of marijuana appears to be dropping slightly, according to the 2002 National Survey on Addictions in Mexico. Marijuana use dipped from 1.21 percent in 1998 to 1.03 percent in 1998, and dropped again to 0.61 percent in 2002 (32). As in other countries, marijuana is the most widely used illegal drug in Mexico.

TABLE 8. Estimated number of people in the Americas who used cannabis in previous 12 months (annual prevalence); year 2006 or latest year available

	Number of cannabis users, annual prevalence	Users as % of population ages 15-64, annual prevalence
The Americas	40,500,000	6.9 %
North America	30,600,000	10.5 %
South and Central America and the Caribbean	9,900,000	3.4 %

Source: UNODC World Drug Report, 2008 (13)

TABLE 9. Estimated number of people in the Americas who used amphetamine-type stimulants in previous 12 months (annual prevalence); year 2006 or latest year available

	Number of users, annual prevalence	Users as % of population ages 15-64, annual prevalence
The Americas	5,670,000	0.96 %
North America	3,720,000	1.27 %
South and Central America and the Caribbean	1,960,000	0.66 %

Source: UNODC World Drug Report, 2008 (13)

► *Amphetamine-type stimulants (ATS)*

An estimated 1.9 million people in Latin America and the Caribbean have used amphetamine-type stimulants in the past year. In South America, **Brazil** has the highest rate of use; in Central America, **El Salvador** does.

Across the Region, use of amphetamine-type stimulants is increasing: Five countries reported rising levels and five reported that consumption levels were stable. None reported a decline. The increase corresponds with increasing consumption rates of *legal* amphetamine-type stimulants in recent years (13).

In **Brazil**, a national household survey (21) found 1.5 percent of people had used stimulants—mostly amphetamines, for weight loss—at least once in their life.

In **Colombia**, a 2004 survey of students showed that 2.8 percent had used stimulants and 3.3 percent had used ecstasy at least once in their life. Other prevalence rates for stimulants and ecstasy, respectively, were: previous 12 months—1.9 percent and 2.5 percent; previous month—1.3 percent and 1.8 percent; previous week—1 percent and 1.4 percent (31).

In **Chile**, 0.33 percent of people between the ages of 12 and 64 have used ecstasy at least once in their life, according to the sixth National Study on Drugs in 2004. The rate shows a significant increase from a study in 2002, which found a lifetime prevalence rate of 0.17 percent. The popularity of ecstasy seems to have increased considerably among teenagers, too: In a 2005 study, 0.46

percent of respondents between the ages of 12 and 18 said they had used the drug within the past year (30).

In **Mexico**, too, use of amphetamine-type stimulants has increased, particularly in towns bordering the United States (32). Higher rates of use may reflect Mexico's growing industry of methamphetamine production. Although most methamphetamine is destined for the U.S. market, a small proportion stays in Mexico, providing easy availability and fueling domestic demand (13).

► *Inhalants/volatile solvents*

A multinational study in seven Latin American countries in 1999-2000 estimates that 12 percent to 13 percent of students have had the opportunity to try inhalants and 5 percent have used them at least once (33).

According to the findings of a second comparative study of nine countries in 2006, the use of inhalants by **Brazilian students** was more than four times higher than in any other country (34). In Brazil, 15.3 percent of students said they had used an inhalant drug in the previous 12 months—a rate more than four times that of **Colombia**, which had the second highest rate, 3.5 percent.

Among **students in Colombia**, although use of inhalants is much less common than in Brazil, rates have increased significantly since 1997. Prevalence rates between 1997 and 2004, respectively: lifetime prevalence—0.6 percent vs. 1.5 percent; previous 12 months—0.04 percent vs. 1.2 percent; previous month—0.3 percent vs. 0.9 percent; previous week—0.2 percent vs. 0.7 percent (35).

In other countries, the percent of students who had used inhalants in the past 12 months are: **Argentina**, 2.6 percent; **Chile**, 2.5 percent; **Ecuador**, 2.3 percent; **Peru**, 1.8 percent; **Uruguay**, 1.5 percent; **Paraguay**, 1.5 percent; and **Bolivia**, 1.2 percent.

Among the general population of **Brazil**, the estimated lifetime prevalence of inhalants is 5.2 percent, according to a household survey of the 107 largest Brazilian cities (21). Also in Brazil, a study in a **juvenile rehabilitation center in São Paulo** shows that 42 percent of the teenagers had used an inhalant at least once (28).

In **Mexico**, use of inhalants was reported to have dropped to 0.09 percent in 2002, down from 0.15 percent in 1998 (32).

Nonmedical use of prescription drugs

A survey of secondary students in nine South American countries (34) shows that the use of pharmaceutical drugs without a medical prescription is relatively high. Among the **student population** in the study, the 12-month prevalence of tranquilizers was: **Paraguay**, 7.1 percent; **Bolivia**, 7.0 percent; **Colombia**, 6.4 percent; **Uruguay**, 4.0 percent; **Brazil**, 4.0 percent; **Argentina**, 3.9 percent; **Ecuador**, 3.0 percent; and **Peru**, 2.2 percent.

In **Brazil**, a household survey involving the country's 107 largest cities showed that the estimated lifetime prevalence of tranquilizers (benzodiazepines) was 3.3 percent (21).

Injecting drug use (IDU)

Few epidemiologic studies in Latin America and the Caribbean focus on use of crack cocaine and drugs that are injected, mostly intravenously—referred to as injecting drug use (IDU). Nonetheless, a growing body of evidence shows the significant role that IDU has for public health, especially for the HIV-hepatitis C virus epidemic in Brazil, Argen-

tina, Haiti, and French Guiana. Conversely, some countries have so far been spared from the epidemic (36). While IDU is closely tied to the HIV epidemic in countries such as Brazil, Argentina and Puerto Rico, it is apparently insignificant for most other countries. Crack cocaine has also been associated with the HIV epidemic (mediated by unsafe sex practices) in countries such as Saint Lucia, Jamaica and Trinidad-Tobago (36). HIV infections associated with using injected drugs have declined, particularly in countries where the epidemic is older. The decline in HIV infections in Brazil is attributed to the several harm reduction programs sponsored by the Brazilian Ministry of Health (37).

Data collected between 1998 and 2003 on IDU in **Buenos Aires, Argentina** showed that the most frequently injected substance was cocaine, at 87.1 percent, followed by morphine, at 10 percent. However, the frequency of IDU—most notably daily injecting—dropped to 5 percent in 2005, down from 43.6 percent in 1998 (38).

In **São Paulo, Brazil**, a cross-sectional study conducted with drug users admitted to **public psychiatric hospitals** found that 1.6 percent had injected drugs intravenously (27).

According to another survey in São Paulo, the rate of IDU among **incarcerated teenagers** was higher: 5.5 percent, including 2 percent who had injected a drug intravenously the month before being incarcerated (39).

Still **another São Paulo study**, which surveyed prisoners inside South America's largest prison, investigated the correlation between HIV and hepatitis C. The results suggested that HIV was transmitted primarily through injecting drugs, usually cocaine, and that the risk of HIV increased the longer the prisoner was incarcerated. Prevalence rates among prisoners in the study were: HIV, 16 percent; hepatitis C, 34 percent; and syphilis, 18 percent (39).

A cross-sectional study in **four cities of Brazil** found an HIV prevalence rate of 37 percent among users who injected intravenously. Infection rates

were associated with incarceration and with having unprotected sex with other men (35).

Yet another study in **Porto Alegre, Brazil** focused on people seeking free testing HIV. From 106 participants who reported a lifetime use of intravenous drugs, 50 percent were HIV-positive. Injecting drugs increased the risk of contracting the HIV virus by a factor of eight, the study found (40).

Drug-use disorders: prevalence and consequences

Among the most important consequences of drug use are the human suffering, health care costs and lost productivity caused by drug-use disorders. Only a few of these disorders ever come to clinical attention, however (41), so it is extremely important to study the general population in an effort to assess drug use and the associated problems that otherwise would be overlooked.

General-population surveys representative of an entire country, or merely the country's largest cities, are costly and therefore infrequent. Even so, in the past 20 years, enough such surveys have been conducted to estimate the prevalence and impact of drug-use disorders on the population of Latin America and the Caribbean. The following tables and discussion are based on that work (42, 43).

Table 10 shows the total lifetime prevalence of drug-use disorders, which range from 1 percent in São Paulo, Brazil to 3.5 percent in Chile.

The 12-month prevalence is much lower, ranging from 0.4 percent in Mexico to 1.8 percent in Chile. Rates of drug abuse or dependence (both lifetime prevalence and 12-month prevalence) are much higher for men than women, except in Chile, where the reverse is true.

Based on estimates in Table 10, Kohn and Rodriguez (43) calculated the mean and median lifetime and 12-month prevalence of drug-use disorders for the region. Results are shown in Table 11.

TABLE 10. Prevalence rates of drug abuse or drug dependence in Latin America and the Caribbean; community-based surveys*

Location of study	Drug abuse or dependence					
	Lifetime prevalence			12-month prevalence		
	% of Total	% of Men	% of Women	% of Total	% of Men	% of Women
São Paulo, Brazil	1.0	1.9	0.6	0.6	1.1	0.2
Chile	3.5	3.4	3.5	1.8	1.7	2.1
Colombia	1.6	2.3	0.3	0.5	0.9	0.2
Mexico ***	1.4	2.9	0.2	0.4	0.9	0.0
Lima, Peru	1.5	2.2	0.7	0.2 **	0.2 **	0.2 **
Puerto Rico (United States)	1.2	2.2	0.4	No observation	No observation	No observation
Mean	1.6	2.5	1.0	0.7	1.0	0.5
Median	1.5	2.3	0.5	0.5	1.0	0.2

* Ref. 42 (except for Mexico). ** Six-month prevalence rate. *** Medina-Mora et al 2006 (Ref. 44)

Table 11 shows that the median lifetime prevalence of drug-use disorders is 1.6 percent and the 12-month median prevalence is 0.6 percent. (Slightly higher prevalence rates are found if mean, instead of median, rates are used.) Using the me-

dian rate estimates, about 6.3 million people in the Region have had a drug-use disorder at some point in their lives and 2.3 million have a current disorder that may exert pressing demands on the health care system.

TABLE 11. Prevalence rates of drug abuse or dependence among adults (age 15 and older) in Latin American and the Caribbean

Prevalence of drug abuse or dependence in Latin America and the Caribbean		Number of adults (age 15 or older) affected
Lifetime prevalence, using median rates		Number of people affected in lifetime
Total	1.6 %	6.3 million
Men	2.3 %	4.4 million
Women	0.6 %	1.2 million
12-month prevalence, using median rates		Number affected in previous 12 months
Total	0.6 %	2.3 million
Men	0.9 %	1.7 million
Women	0.2 %	0.4 million
Lifetime prevalence, using mean rates		Number of people affected in lifetime
Total	2.1 %	8.2 million
Men	3.2 %	6.1 million
Women	1.2 %	2.4 million
12-month prevalence, using mean rates		Number affected in previous 12 months
Total	0.7 %	2.7 million
Men	0.9 %	1.7 million
Women	0.5 %	1.0 million

* Ref. 43

Table 12 shows that among men between the ages of 15 and 59, drug-use disorders were ranked as the fifth most important cause of DALYs

and the ninth most important cause of years lived with a disability (YLDs).

TABLE 12. Drug-use disorders ranked for importance as a contributing cause of DALYs and YLDs, Latin America and the Caribbean; year 2002

	Drug-use disorders ranked for importance as contributing cause of ...	
	DALYs	YLDs
By people ages 15-59		
Men	5th	9th
Women	*	*
Total	7th	13th
By all ages		
Men	7th	20th
Women	*	*
Total	14th	*

* Not among the 20 most important causes. ** Ref. 43

Table 13 shows the importance of drug-use disorders as a contributing cause of YLDs for each country of the Region. Drug-use disorders had the largest impact in **Dominican Republic**, where they contributed 2.5 percent to YLDs, followed by **Ecu-**

dor, where they contributed 2.4 percent. Drug-use disorders had the smallest impact in **Cuba**, where they contributed just 0.01 percent and in **Grenada** and **Honduras**, where they contributed 0.1 percent to the countries' YLDs.

TABLE 13. Percent that drug-use disorders contributed to YLDs, by country; year 2002

Country	% that drug-use disorders contributed to YLDs
Antigua and Barbuda	0.6
Argentina	1.5
Bahamas	0.6
Barbados	0.6
Belize	0.6
Bolivia	1.5
Brazil	0.9
Chile	2.1
Colombia	2.0
Costa Rica	0.2
Cuba	0.0
Dominica	0.6
Dominican Republic	2.5
Ecuador	2.4
El Salvador	0.5
Grenada	0.1
Guatemala	0.6
Guyana	0.4
Haiti	0.4
Honduras	0.1
Jamaica	2.1
México	0.5
Nicaragua	0.8
Panamá	0.2
Paraguay	0.6
Peru	2.0
Saint Kitts and Nevis	0.5
Santa Lucia	0.2
Saint Vincent and Grenadines	0.6
Suriname	0.4
Trinidad and Tobago	0.6
Uruguay	0.5
Venezuela	1.7

Table 14 shows the estimated number deaths in 2000 directly or indirectly attributable to use of illicit drugs. Median-, low- and high-range es-

timates for each of the WHO subregions are shown. Causes of death were: AIDS, overdose, suicide and trauma.

TABLE 14. Estimated number of deaths from AIDS, overdose, suicide or trauma directly or indirectly attributable to use of illicit drugs; median-, low- and high-range estimates for WHO subregions; year 2000

WHO subregion*	AIDS	Overdose	Suicide	Trauma
AMR-A				
Estimated deaths due to drug use				
Median	4,000	6,397	2,034	4,057
Low	4,000	5,144	806	718
High	4,000	7,649	3,261	7,397
AMR-B				
Estimated deaths due to drug use				
Median	5,000	1,845	922	2,342
Low	5,000	1,530	240	985
High	5,000	2,159	1,604	3,699
AMR-D				
Estimated deaths due to drug use				
Median	0	498	78	716
Low	0	300	49	319
High	0	744	107	1,243

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10

* See description of WHO subregions in footnote, Table 5.

Table 15 compares two methods of calculating the total mortality attributable to illicit drug use.

Method A adds the four causes shown in Table 14: AIDS, overdose, suicide and trauma.

Method B uses estimates of “all-cause” mor-

tality derived from cohort studies and attributable fractions. The “all-cause” method produces a higher estimate, since the “four-cause” method does not use an exhaustive list of all possible causes of death.

TABLE 15. Comparison of two methods for estimating total mortality attributable to use of illicit drugs, by WHO subregion; year 2000

WHO subregion*	Population older than 15	Mortalities, method A: Sum of 4 causes	Mortality rate per 1,000, method A	Mortalities, method B: All causes	Mortality rate per 1,000, method B
AMR-A	255,420,000	16,488	0.06	40,356	0.16
AMR-B	297,625,000	10,109	0.03	18,425	0.06
AMR-D	44,580,000	1,292	0.03	2,522	0.06

Method A: Sum of the median estimates for four causes: AIDS, opioid overdose, suicide and trauma.

Method B: Median estimates of all causes of mortality derived from analyses of standardized mortality ratios (SMR) and pooled crude mortality rates (CMR).

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10

* See description of WHO subregions in footnote, Table 5.

TABLE 16. Percent of male deaths attributable to use of illicit drugs, by WHO subregion; year 2000

WHO subregion *	% of male deaths attributable to illicit drug use
AMR-A	0.56 %
AMR-B	0.63 %
AMR-D	0.72 %

* See description of WHO subregions in footnote, Table 5.

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10

TABLE 17. Number of deaths attributable to use of illicit drugs, by sex within WHO subregions; year 2000

Subregion*	Sum of four causes of mortality	Mortality from all causes
AMR-A		
Men	9,233	22,599
Women	7,255	17,757
AMR-B		
Men	6,369	11,608
Women	3,740	6,817
AMR-D		
Men	930	1,816
Women	362	706

* See description of WHO subregions in footnote, Table 5.

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10

Table 18 provides estimates of the DALYs attributable to illicit drugs, by WHO subregion. For age breakdowns, it was assumed that no one younger than 15 and no one older than 54 were problematic users of illicit drugs. (This age range

has been found to contain the vast majority of problematic users of illicit drugs.) The estimates in Table 18 were calculated based on limited data about the age and sex of people dying from AIDS, overdose, trauma and suicide.

TABLE 18. Burden of disease, as measured by DALYs, attributable to use of illicit drugs, by sex within WHO subregions; year 2000

WHO subregion *	DALYs attributable to illicit drug use	
	Men	Women
AMR-A DALYs attributable to illicit drug use	594,000	185,000
AMR-B DALYs years attributable to illicit drug use	586,000	13,000
AMR-D DALYs attributable to illicit drug use	193,000	59,000

* See description of WHO subregions in footnote, Table 5.

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10

TABLE 19. Estimated distribution of causes of death attributable to use of illicit drugs, by age; year 2000

Cause of death	Deaths (from overdose, suicide and trauma) attributable to illicit drug use					
	Younger than age 15	Age 15–24	Age 25–34	Age 35–44	Age 45–54	Older than age 54
Overdose	0	1/6	1/3	1/3	1/6	0
Suicide	0	1/3	1/3	1/6	1/6	0
Trauma	0	1/3	1/3	1/6	1/6	0
Total *	0	0.13	0.34	0.29	0.24	0

* Weighted average of the three causes.

Source: Comparative Quantification of Health Risks: Global and Regional Burden of Disease Attributable to Selected Major Risk Factors (WHO, 2004). Ref. 10



Recommendations for Improving the Quality of Drug-Use Data

The importance of epidemiological information

The use of illicit drugs has been a long-standing concern in most countries of Latin America and the Caribbean. That concern has escalated in recent years as synthetic drugs proliferated and drug production and use of illegal drugs increased.

Efforts have been underway in countries of the Region since the 1970s to control both supply and demand of illicit drugs through legal sanctions and reducing the size of the drug market. The strategy has not been effective in decreasing drug availability. In addition, use of illicit drugs has climbed. (Paradoxically, making drugs illegal may render them more, not less, appealing in some subcultures [3].)

Another strategy for reducing demand focuses not on legal sanctions per se but on harm reduction, education, prevention, treatment and rehabilitation, which have a focus on reducing the health consequences of drug use and preventing the initiation or escalation of use.

But for any approach to be successful, health experts, legislators, program administrators and others need reliable information. They need to understand the scope of the problem and the target population. Who uses drugs? How often and under what circumstances? What are the barriers to getting help? Such knowledge is often lacking (9).

A solid underpinning of accurate epidemiological information is necessary to allocate resources appropriately, design effective programs and measure their success.

Limitations of existing data

The UNODC has made substantial efforts to improve the quality of information about drug use and prevention and treatment programs, but significant problems with the data persist.

► *Few surveys*

A third of the Region's countries have no information about drug use among the general population. Just half have conducted drug-use surveys among students. Only a few have information on use of illegal drugs among the sub-populations at highest risk for drug use—prisoners, the homeless and patients who are HIV-positive.

In some countries, completed surveys have not been published or indexed, making them impossible to locate through standard reviews of the literature; researchers must seek out government officials or personnel working in the field.

And studies of drug-use disorders and health consequences are virtually non-existent; only a handful of countries have generated such information.

► *Deficiencies in existing data*

Existing studies are often flawed. Questions are not standardized, survey methods are inconsistent from country to country and many studies are one-time efforts—factors that make it impossible to track trends, evaluate patterns or compare and contrast drug use among countries.

In most countries, general surveys do not include data for the oldest segment of the population; others are missing information for the rural population or for ethnic and indigenous sectors.

► *Problems with prevalence studies*

- **General-population surveys**

Estimates of prevalence vary depending on assumptions made by the study and the methodology employed. Data provided by the UNODC do not have the same reliability as large-scale household surveys, but the latter are too expensive to be feasible in most countries of the Region. Even if they were affordable, large-scale household surveys would likely fail to estimate accurately the prevalence of drug use among the overall population not only because of underreporting of an illicit practice but also because certain groups on the margins of society—street children, homeless adults, prisoners and others—are typically overlooked by general-population surveys. Yet these are the sectors of the population most likely to use illegal drugs.

- **School-based surveys**

School-based surveys suffer from two weaknesses. First, they exclude young people who are not attending school. The omission can be significant, eliminating a large proportion of student-age youth. For example, the dropout rate in some South American countries is 40 percent or higher. Second, school attendance serves as a “protective” factor that reduces the likelihood of drug use—suggesting that drug use among young people not attending school may well be higher than among students. Consequently, school-based surveys may underestimate the prevalence of drug use by a considerable margin.

Back to basics: An overview of surveys

Creating surveys that provide useful, consistent data requires an understanding of survey types, goals and formats.

► *Two survey types*

Epidemiological studies typically use one of two types of surveys.

- One type is a survey of the general population—of people who live within some given area, usually defined by political or geographic boundaries. The area may be extremely small (a village of a few hundred people) or vast (a nation of many millions).
- A second type is a survey of a special population, such as students. Several countries have conducted representative national surveys of secondary school students. Less common are special-population surveys of the military, prisoners, workers and clinical patients.

► *Survey goals*

- **Estimating the number of people affected**

The first goal of any drug survey is to obtain an estimate of the number of people who use drugs and are afflicted with drug-use disorders. As noted above, however, both general-population surveys and school-based surveys may underestimate the numbers. The risk of being overlooked is especially high for users who are homeless, unemployed or part of any marginalized social group—the very groups at highest risk for drug problems and dependence.

- **Estimating prevalence of drug use over time**

The second goal of any drug survey is to establish the prevalence of use over time. Two key measures are *lifetime prevalence* and *current prevalence*. Lifetime prevalence indicates which people have used a drug at any time in life, even once. Current prevalence is usually measured by determining if a drug has been used in the previous year/12 months or previous month/30 days.

- **Developing risk profiles**

Drug surveys can also be used to gather demographic or personal characteristics that indicate which people will be more likely to abuse drugs or suffer health consequences such as drug overdose or social consequences such as being involved in a traffic accident or dropping out of school as a consequence of drug use.

► *Three common formats*

Surveys typically use one of three formats. Depending on the population to be surveyed, one format may be more appropriate and easier to use than another.

1. **Self-administered questionnaires** are cost-effective but require reasonably literate respondents.

2. **Interviewer-administered questionnaires**

do not demand the same level of literacy among respondents, but give them less privacy because the interviewer usually asks the questions and enters respondents' answers.

3. **Physician-administered case report forms**

are a more compact method for gathering information; the form often does not include the full text of each question. Case report forms usually need to be administered by a person who is skilled in using them. Some researchers consider the format more variable than other formats because the questions are not fully spelled out and closed-ended answer alternatives are not always presented to respondents.

Recommendations for generating better data

As an international public health agency dedicated to improving health and living standards in the countries of the Americas, PAHO believes that providing information is a meaningful way to improve how to allocate resources to prevent drug misuse and treat drug-use disorders and related problems. Our recommendations for improving the quality of available studies are based on the WHO publication, "Guide to Drug Abuse Epidemiology" (9), and made in consultation with researchers and epidemiologists around the world.

► *Written questions*

Every study should be based on written questions, which can be standardized.

Creating studies based on written—rather than oral—questions ensures the questions and the information they elicit will be consistent across different locales and time periods, making it possible to track changes and analyze trends and patterns. Similarly, standardized questions increase the likelihood that findings generated

from countries anywhere in the world can be integrated. This, in turn, makes it possible to assess whether patterns or relationships are universal (9).

► *Consistent measures*

All questionnaires should contain specific elements and use consistent measures.

Drug-use questionnaires should always:

1. **Use the same drug categories**—cannabis, cocaine, etc. They should avoid categories that may differ among countries, which makes country-to-country comparisons difficult.
2. **Measure prevalence of use.** Three time periods should be included:
3.
 - Drug use during the respondent's lifetime.
 - Drug use during the year/12 months preceding the survey.
 - Drug use during the month/30 days preceding the survey.

These periods allow researchers to determine what proportion of the survey population have ever used a drug (lifetime prevalence); what proportion have used a drug during the previous 12 months (annual prevalence) and might therefore still be using the drug; and what proportion of the population are current or recent users (30-day prevalence).

3. **Measure the frequency of use.** Periods of time to measure frequency should include: times a year, monthly, weekly, daily and more than once a day.

4. **Ask the age at which respondents first used the drug.** This is an important dimension, identified as a core variable. The age may vary widely among different respondents. Any single respondent may also report widely varied ages for first use of different drugs.
5. **Ask how the drug is administered or consumed.** Is it taken orally, snorted or injected? The method may vary significantly among drugs. The method of administration/consumption is important because different methods carry different degrees of risk. Injecting drugs, for example, carries a high risk of transmitting HIV and hepatitis if users share needles. Include at least one question asking whether respondents use equipment to inject drugs (not including drugs prescribed for medical purposes).
6. **Ask about the consequences of use.** Consequences may pertain to health, personal relationships, attendance or performance at work or school, criminal justice contacts such as number of arrests, number of convictions, time spent in prison, or to matters such as drug overdose or physical trauma due to drug use, such as injury sustained in a drug-related automobile accident.
7. **Disaggregate data by sex.** The consumption of drugs, its health and social consequences, related risk and protective factors and service needs are different for men and women. Only by disaggregating data by sex, a gender analysis is possible, can inform research gaps and equate public policies and programs.

Toward a Public Health Approach: Recommendations for Action

Simply put, the health care needs of individuals in the Region who are drug dependent or who suffer drug-related health problems are not well documented. However, with few programs focused on drug prevention and treatment, we can be certain that in most countries, the need for services outstrips availability of resources—probably by a very wide margin.

Developing a public health response

It is time to respond to the problems of drug use and dependence with a public health approach that brings drug users under the umbrella of health care services.

Determining which health services are most urgently needed requires reliable data that can be shared by countries throughout the Region—information that has never been available. But that will change in 2010, when WHO publishes the ATLAS report, which will provide the first country-by-country assessment of resources for preventing and treating drug problems and drug-use disorders. The report marks a major milestone in the effort to develop public policy and programs that address drug-use problems in the Region.

Developing intervention programs based on research

The first step in developing intervention programs is assessing the extent of drug abuse and harm in the country or jurisdiction. Assessments should be based on information drawn from general-population surveys and surveys of youth and high-risk groups. They should include mortality statistics attributable to drug use and should estimate the impact that drug-related treatment has on hospital emergency rooms and other health services.

Confidentiality is critical. All information about an individual's drug use must be kept strictly confidential so that respondents know they can seek care for use of illegal drugs without risking legal consequences.

All the countries of the Region would benefit from collaborating on research efforts. By working together and sharing information through a network of research groups, countries could identify factors in drug-related issues that can be modified or ameliorated. They could also share successful models for prevention and treatment.

Research is lacking on a wide variety of topics which are perceived as relevant and on the increase in various countries of the Region: health consequences of ecstasy use, sharing of snorting equipment, social networks of non injecting drug users and HIV/HBV and HCV transmission, treatment for crack-cocaine dependence, treatment for cannabis dependence, understanding prescription drug use and its

consequences, the relationship between poverty and drug use, drug use and involvement in drug trade, drug use and sex trade, among many others. Defining an agenda for research in Latin America and building a network of researchers and institutions can help bridge the gaps in knowledge and public health.

A continuum of care

Whenever possible, treatment for drug-use disorders should be provided by primary health services, in outpatient drug treatment clinics, day clinics in the community, and then, as needed, in inpatient settings such as general hospitals and their psychiatric units—a continuum of care that ranges from low threshold to intensive programs, and from general health care to highly specialized.

Community clinics and primary care services—first-level health providers—should serve as the contact point in drug prevention and treatment efforts and should offer health screenings and brief interventions. Screenings and interventions are economical and effective for decreasing drug use before individuals become dependent or their dependency becomes severe (45-50). (Information on screenings and early intervention is available from WHO at http://www.who.int/substance_abuse/activities/assist/en/index.html.)

Preventing the spread of infectious diseases

Individuals who inject drugs are at particular risk for transmitting or contracting blood-borne viruses, which are transmitted by syringes shared among drug users, needle-prick injuries and through unprotected sex, among other ways.

Treatment programs can help drug users avoid transmitting or contracting blood-borne viruses through several techniques. For maximum effectiveness, programs should use all techniques in combination (8).

- Offering testing and counseling for HIV, hepatitis and related conditions.
- Providing treatment for individuals infected with HIV.
- Setting up and providing needles and syringe exchanges
- Offering opiate substitution therapies, such as giving methadone and buprenorphine to heroin-dependent users.
- Making available naloxone to prevent opioid overdose deaths (and provide training on its use)
- Distributing condoms.
- Vaccinating against Hepatitis B

Reducing social isolation among high-risk groups

People on the margins of society—the poor, the homeless, prisoners, sex workers, transgenders, men who have sex with men and others—are more likely to use illegal drugs and develop dependence than other sectors of the population. These high-risk groups need special attention. Policies and programs must give them easy access to affordable services—not only to drug-use assessments, risk-reduction programs and short-term interventions, but also to housing and a range of social services to improve their living conditions and reduce their isolation from the mainstream of society.

Treatment and care for everyone, without discrimination and on demand

Above all, services must be made available to everyone who needs them, without discrimination and when they need them.

Communities may resist establishing clinics or other health care and social service facilities in their neighborhoods for fear of being forced to associate more closely than they want with drug users.

Issues of safety may be a concern. However, by working together, police, health care workers,

members of the community and patients can ensure residents' safety and drug users' access to care. But even if users resort to crime to pay for drugs, the community must not respond by refusing services. *Treatment must be available for all who need it.* For individuals who are drug-dependent, the first crucial step is finding help to control consumption. Although it has not been documented formally, drug users report that discrimination discourages them from seeking services and receiving medicine and optimal care. We must remember that promoting and protecting human rights is an overarching principle in the treatment and care of people with drug-use disorders. Services must be free from discrimination. Harm reduction services set up in communities where drug users congregate have been shown to reduce community dislocation rather than contribute to it.

In addition, outreach services and harm reduction programs are proven to be cost-effective in preventing HIV and other blood borne infections, and may facilitate treatment seeking among drug

users. However, legislation often criminalizes such practices, penalizing professionals who provide syringes and clean needles, penalizing drug users for carrying such equipment, and thus preventing the implementation of effective practices. These services are part of a continuum of care, and do not lead to increased drug use in the community at large. Revisiting current laws, policies and legislation regarding access to treatment and care is a priority at country level.

Gap Action Programme

In Geneva in the fall of 2008, WHO launched the mental health Gap Action Programme, designed to increase services for mental, neurological and drug-use problems, especially in low- and middle-income countries. The program asserts that with proper care, psychosocial assistance and medication, tens of millions people can be treated—even where resources are scarce (http://www.who.int/mental_health/mhgap/en/index.html).

Ten guidelines

The key messages of the 2001 WHO report on mental health (51) should be adapted and applied to disorders caused by psychoactive drugs.

1. Provide treatment in primary care.

Include screenings and brief interventions for drugs users before they develop drug dependence.

2. Make psychotropic medicine available for treating drug-use disorders.

For opiates, methadone and buprenorphine are part of the WHO essential drug list and can be made affordable. Other psychotropic medicines can be used for treating both overdose and withdrawal symptoms to several commonly used psychoactive drugs.

3. Provide care in the community.

Include outreach services.

4. Educate the public about drug-use disorders and where to find services.

5. Involve communities, families and users.

Communities and families play an important role in users' care and treatment.

6. Establish national policies, programs and legislation that promote health care, provide for harm reduction services, protect human rights and offer alternatives to prison.

7. Develop human resources to create a workforce of health care workers who are educated and informed about drug use and the associated problems.

8. Link with other sectors of society.

Involve the judicial, educational and social service systems.

9. Monitor community mental health programs to improve resources for preventing and treating drug-use problems.

10. Support more research.

Epidemiological information is a fundamental building block for planning, establishing and monitoring public health response. Reliable, comparable data must be collected systematically from different sectors of the population to establish trends and assess the effectiveness of interventions.

Appendix

To create this report, we conducted a literature search of major databases and non-indexed literature in English, Spanish and Portuguese to locate current information on drug use epidemiology in the region.

We also drew from information available on national drug observatories' websites of different countries, and from publications and electronic pages of agencies including WHO, the Inter-American Drug Abuse Control Commission of the Organization of American States (CICAD/OAS), the U.S. Department of State, UNODC and the World Bank. Additionally, we consulted epidemiological studies and data from CICAD, WHO and PAHO, including the Global Student Health Survey.

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