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(Pusat Penyelidikan Dadah dan Ubat-ubatan)  
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Penang  
MALAYSIA



# INTERNATIONAL MONOGRAPH SERIES

# IMS

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*REPORT OF*

*THE ASIAN MULTICITY*

*EPIDEMIOLOGY WORKGROUP*

*2002*

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**16**

**REPORT OF THE ASIAN MULTICITY  
EPIDEMIOLOGY WORK GROUP 2002**

**Editors:**

**V. NAVARATNAM**

**PENG-LIN WONG**

**INTERNATIONAL MONOGRAPH SERIES NO. 16**

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The city drug abuse indicator trend reports contained in this document are substantively the same as originally submitted by the authors. However, reports have been edited to enhance the presentation. The Centre for Drug Research (CDR), USM acknowledges the contributions made by the members of the Asian Multicity Epidemiology Work Group (AMCEWG) who have invested their own time and resources in preparing the reports presented at the meetings.

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MINDEN, PENANG  
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ISBN NO: 983-2514-48-7

## ACKNOWLEDGMENT

The Asian Multicity Epidemiology Programme is organized and implemented by the National Centre for Drug Research, Universiti Sains Malaysia with the collaboration of the National Institute on Drug Abuse (NIDA), USA.

The Programme Management Team is indebted to the Vice Chancellor of Universiti Sains Malaysia, Professor Dato' Dzulkifli Abdul Razak, and Deputy Vice Chancellor (R&D), the late Professor Ahyaudin Ali for their continuous support and interest in this programme.

We express our sincere appreciation to the participants from various countries and agencies as well as their Governments and organizations for their active involvement and commitment towards this programme. We also extend special thanks to Mr. Nicholas J. Kozel for his invaluable input during his tenure as Associate Director, Division of Epidemiology and Prevention Research, NIDA, USA. Their contributions have made this programme in Asia a success.

Lastly, we thank the staff at the Centre for providing technical support and various assistance.

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## INTRODUCTION

The Asian Multicity Epidemiology Work Group (AMCEWG) programme has entered its tenth year in 2002. The Group now consists of twenty-two member cities from South, East, and Central Asia, whereby each member city has established her own drug abuse surveillance system.

After a lapse of two years, the Group held its first meeting in Penang, Malaysia from 28 to 31 October 2002. Apart from the country epidemiological reports, there were also presentations by representatives of two UN agencies – UNDCP and UNAIDS. UNDCP gave a presentation on the Global Assessment Programme on Drug Abuse, while UNAIDS gave an overview of the global HIV/AIDS situation. For the first time, drug abuse reports from Central Asian countries such as Kazakhstan, Tajikistan, Kyrgyzstan, and Uzbekistan were shared at the meeting.

Among dominant issues at the meeting were the growing numbers in injecting drug users (IDUs) in most countries and the rising popularity of amphetamine-type substances, particularly methamphetamine and 3,4, methylenedioxymethamphetamine (MDMA). The Group held discussions on the feasibility of ATS data collection in the region, whereby it was recognized that there are inadequate information/knowledge on the use and consequential burden of ATS. The participation of UNAIDS in the meeting also generated efforts on how the current epidemiological data can be linked to existing HIV/AIDS data to address the growing threat of the HIV/AIDS infection among drug users. During the meeting, the drug abuse indicator reporting instrument was reviewed and modified.

This programme is organized by the Centre for Drug Research, Universiti Sains Malaysia with technical support from the Division of Epidemiology and Prevention Research, National Institute on Drug Abuse, National Institutes of Health, USA.

# RECENT SITUATION OF DRUG ABUSE IN CHINA

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## 1. INTRODUCTION

China is one of the most densely populated countries in the world. China has a land area covering approximately 9.6 million square kilometres, nearly 6.5 percent of the world's land surface area. The total population is approximately 1.28 billion. The population density is about three times the world average. China consists of 56 nationalities. The largest nationality is Han, which comprises 91.59 percent of the population. According to the data obtained from the sampling survey of the year 2000, about 36 percent of China's population covers the urban area, while another 64 percent is scattered across rural areas. There are 22 provinces, five autonomous regions; and four metropolitan areas in the mainland of China. The capital of China is Beijing. Table 1 shows the basic data of China's population.

**Table 1. Basic data of China's mainland population**

	Population (1,000,000)	Percentage (%)
Sex		
Male	653.55	51.63
Female	612.28	48.37
<u>Age (years)</u>		
≤15	289.79	22.89
15-64	887.93	70.15
≥65	88.11	6.96
<u>Nationality</u>		
Han	1159.40	91.59
Minority	106.43	8.41
<u>Education status</u>		
Illiterate & semiliterate	85.07	

Primary	451.91	
Junior Middle	429.89	
Senior Middle	141.09	
College	45.71	
Urban	455.94	36.09
Rural	807.39	63.91

(Figures refer to the population of the 31 provinces, autonomous regions and municipalities on China's mainland including servicemen)

## 2. CURRENT DRUG ABUSE SITUATION

In recent years, the drug situation in China remains grave. At present, the 'Golden Triangle' area has aggravated from a source of heroin and opium to dual source of opiates and amphetamine-type stimulants (ATS). Heroin production in 1999 from the 'Golden Triangle' account for 28 percent of the total world production. In 2000, poppy fields in this area were 1.695 million mu, an increase of over 300,000 mu from the year 1999. There are over 50 amphetamine refineries in this area, turning out 600 million methamphetamine tablets. Heroin and methamphetamine produced in the 'Golden Triangle' have increasingly infiltrated into China. In 2000, China had altogether cracked 66 major cases of heroin over 10 kg, and the 3.94 tons of heroin seized were from the 'Golden Triangle'. In 2001, China seized a total of 13.2 tons of heroin, most of which was produced at the 'Golden Triangle'. In Yunnan province alone, as much as 8 tons of heroin was seized.

The 'Golden Crescent' was another place that has become the largest opium-producing area in the world in recent years. Its opium production increased to 4600 tons in 1999, leading the world in opium production. In 2000, because of the drought in Afghanistan, the quantities of opium saw reduction, but the heroin production of this area remained at 70 percent of the world production. In recent years, in the ports and some cities of Xinjiang autonomous region, Chinese public security organs and the Customs have cracked over twenty cases of drug trafficking from the 'Golden Crescent' and Middle Asia nations, and seized drugs including heroin, opium and cannabis. With the opening of the 'bridge between Europe and Asia' and the influx of western influences in China, there is a serious potential for the diffusion of the drug menace from the 'Golden Crescent' to China.

Influenced by this situation, drug-related crimes became rampant in China. Drug traffickers in and out of China worked in collusion, through a variety of channels and in different forms. With the constant increase in drug-related cases, the drug scourge is worsening each passing day. China has turned from a victim of the in-transit drug trade

to a victim of both drug transit-conduit for international drug trafficking and consumer of drugs, and faces greater challenges than ever in combating drug-related crimes.

According to the national-scale drug abuse surveys and statistics of the National Narcotic Control Commission (NNCC), the numbers of registered drug abusers was 70,000 in 1990; 148,000 in 1991; 250,000 in 1992; 380,000 in 1994; 540,000 in 1997; 596,000 in 1998; 681,000 in 1999; 861,000 in 2000 and 901,000 by the end of 2001 in Mainland China. Now drug abusers account for 0.71% of China's total population, and that is 12.9 times as much as in 1990. However, the real number is far greater than that. The problem of drug abuse has spread in 2051 counties and cities, in other words, it has been involved 71.66 percent (2051/2862) of regions of China. Table 2 shows the increased number of registered drug abusers since 1990.

**Table 2. Registered drug abusers since 1990**

Year	Total populations (10 thousands)	Numbers of drug addicts (10 thousands)	Prevalence of drug abuse (1/10000)
1990	114333	7.0	0.61
1991	115823	14.8	1.28
1992	117171	25.0	2.13
1993	118517	-	-
1994	119850	38.0	3.17
1995	121121	52.0	4.29
1996	122389	-	-
1997	123626	54.0	4.37
1998	124810	59.6	4.48
1999	125909	68.1	5.40
2000	126583	86.1	6.80
2001	127627	90.1	7.06

## 3. PATTERNS AND TRENDS

Heroin is currently the major substance of abuse in China. Heroin abusers make up 82.69 percent (745,000/901,000) of the addict population. According to the data of the National Drug Abuse Surveillance Centre, 79.2 percent of drug addicts were young people between 17 to 35 years of age, 53.48 percent and 34.97 percent of them were unemployed and self-employed respectively. **Figures 1 and 2 and Tables 3 to 5** show the basic demographic data of drug abusers.

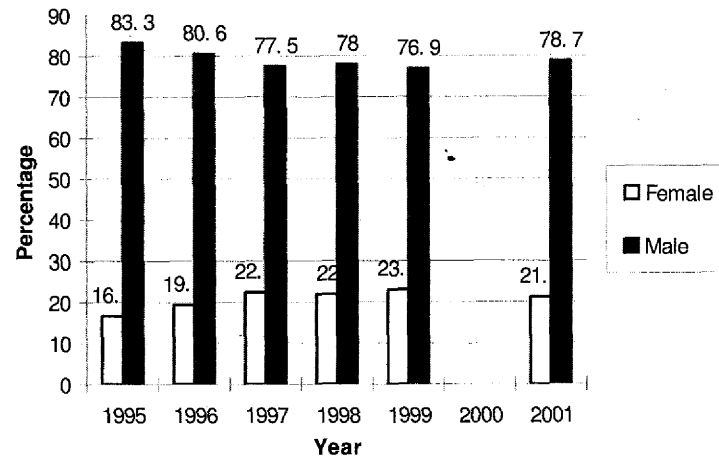


Figure 1: Sex ratio of drug abusers from 1995-2001

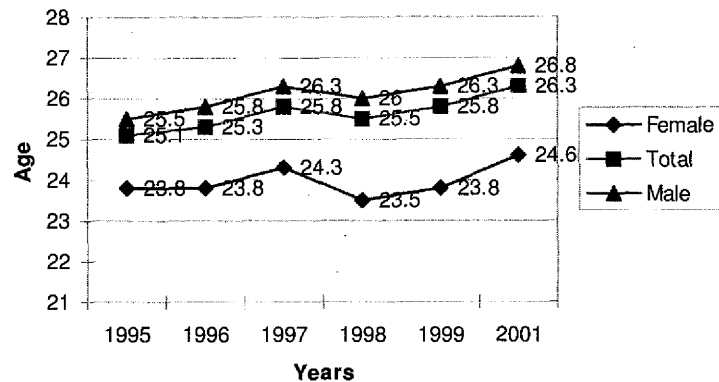


Figure 2: Mean age of drug abusers from 1995 to 2001

Table 3. Marriage status of drug abusers from 1995 to 2001

Marital status	1995 (%)	1996 (%)	1997 (%)	1998 (%)	1999 (%)	2001 (%)
Single, never married	50.4	51.2	49.3	48.6	47.1	44.0
Married	42.5	43.7	45.8	48.5	49.9	48.5
Divorced	1.8	3.5	.1	2.0	1.9	5.1
Separated	0.3	0.1	0.3	0.1	0.1	0
Widowed	0.2	0.2	0.2	0.1	0.1	0.2
Cohabiting	1.2	1.2	1.3	0.8	0.9	2.15

Table 4. Education attainment of drug abusers from 1995 to 2001

Education attainment (Years)	1995 (%)	1996 (%)	1997 (%)	1998 (%)	1999 (%)	2001 (%)
<1	1.4	1.3	1.2	0.7	0.9	1.9
1-6	12.6	12.7	12.0	8.0	9.4	11.1
7-9	67.6	62.6	63.7	65.7	64.1	61.8
10-12	17.2	21.4	21.1	22.8	22.8	22.5
≥13	1.2	2.0	2.0	2.8	2.8	2.8

Table 5. Occupation of drug abusers in 2001

Occupation	Total (%)	Male (%)	Female (%)
Unemployed	53.48	50.41	64.63
Student	0.16	0.09	0.42
Housewife	0.12	0	0.56
Retired	0.08	0.07	0.10
Self-employed	34.97	37.85	24.86
Drivers/Transport workers	3.06	3.70	0.73
Services/Business	1.88	1.53	3.14
Workers	3.45	3.57	3.01
Agro based workers	1.71	1.87	1.15
Clerical staff worked in foreign company	0.32	0.29	0.46
Clerical staff worked in government	0.30	0.31	0.25
Technician	0.18	0.13	0.38
Entertainer	0.19	0.10	0.52
Others	0.10	0.08	0.09

ATS such as MDMA (ecstasy) emerged as drugs of abuse in China in 1997 and ketamine emerged in 2000. It has kept rising in recent years. The number of people abusing MDMA and ketamine has been increasing sharply. MDMA abuse was fairly common in some public areas of entertainment in certain middle-sized and large cities,

and showed trends of spreading from the coastal areas to inland regions. Those abusing MDMA came from all circles of the society.

Polydrug abuse is common among heroin addicts. Drugs used in combination with heroin include sedatives/hypnotics (e.g. trizolam), narcotics (e.g. pethidine), and some uncontrolled prescription drugs (e.g. tramadol). Aside from opiates, new types of drugs such as methamphetamine e.g. MDMA and ketamine were found.

Since the 1950s, China has exercised strict control over amphetamines and other psychotropic substances. In 1951, a pharmaceutical factory of Chongqing produced a drug known as an 'anti-fatigue pill'. The results of drug analysis showed that the main component of this pill was methamphetamine. The pharmaceutical factory was then ordered to stop producing immediately. In 1963, a pharmaceutical factory in Shanxi province produced illegal methamphetamine, causing a small-scale epidemic, but it was quickly controlled. Until the end of the 1980s, there were few reports of illegal methamphetamine manufacturing in China.

In the early 1990s, illegal processes for clandestine manufacturing of methamphetamine began to emerge. The number of clandestine methamphetamine manufacture seized rose dramatically in the late 90s. In the meantime, the use of ATS (MDMA and 'ice') began to increase, particularly in public recreational places of southeast coastal cities. In view of the fact that criminal activities involving the manufacturing and trafficking of methamphetamine have become increasingly rampant in the past few years, Chinese public security organs have launched several campaigns against such activities, particularly in the southeast coastal areas of China.

In 1999, the National Narcotic Control Commission added the fourth ban of drug manufacturing to its 'simultaneous promotion of three prohibitions' anti-drug principles. The three prohibitions were addiction, trafficking, and cultivation of drugs. Public security authorities across the country have since intensified their operations against the manufacturing and trafficking of methamphetamine and other drug-related crimes, and these operations have been outstandingly successful.

**Table 6. Seized drugs (kg) (1991-2001) by NNCC**

Year	Opium	Heroin	Marijuana	Methamphetamine
1991	1980	1919	454	351
1992	2680	4489	910	655
1993	3354	4459	251	5
1994	1737	3881	1534	460
1995	1110	2376	466	1304
1996	1745	4347	4876	1599
1997	1880	5477	2408	1334
1998	1215	7358	5079	1608
1999	1193	5364	106	16059
2000	2428	6281	4493	20900
2001	2820	13200	751	4820

**Table 7. Drug related cases and offenders (1991 to 2001)**

Year	Number of clearance of drug cases	Drug suspects arrested	Drug offenders convicted	Rate of drug offender Per 100,000
1991	8,395	8,080	5,285	0.46
1992	14,701	7,025	6,588	0.56
1993	26,191	7,677	6,137	0.52
1994	38,033	10,434	7,883	0.66
1995	57,524	12,990	9,801	0.81
1996	88,579	18,860	13,787	1.13
1997	180,125	24,873	18,878	1.53
1998	182,416	34,287	27,229	2.18
1999	64,655	37,267	33,641	2.67
2000	96,189	37,101	33,023	2.61
2001	110,300	39,604	33,203	2.60

SOURCE: Office of National Narcotic Control Commission

#### 4. AIDS/HIV AMONG DRUG ADDICTS

By the end of 2001, the cumulative number of HIV positive and AIDS recorded in China had reached 30,736 or 24.1 per million population (Experts estimate the number of HIV infected people in China may be 850000). At present, HIV infection/AIDS in China is not as prevalent as in some American, European or African countries. But the potential for large-scale HIV transmission exists in this country and there are some risk factors that could cause HIV to spread extensively across China. In recent years, the spread of drug abuse was the most threatening factor for the new HIV infection epidemic in China. According to the report of the National Network of AIDS Monitoring Centre, 68-72 percent of HIV cases were attributed to infection caused by injecting drugs.

#### 5. DETOXIFICATION & REHABILITATION

In order to reduce the prevalence rate of drug addicts, a comprehensive measure for the prevention, treatment, and rehabilitation programme was carried out in China. Treatment combines detoxification, psychological counselling and physical training. It aims to restore the drug addicts back to their normal lives. According to Chinese law, drug addicts must receive detoxification as well as education. Those who relapse after detoxification will be sent to special labour camps for 1-3 years, where they will continue to receive treatment. The local government organizes workers from the public security, judicial, social and public health departments to carry out the work of detoxification and rehabilitation.

# PATTERNS AND TRENDS OF DRUG ABUSE IN TAIWAN, R.O.C.:

## Report of 1998 & 1999

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### ABSTRACT

*In years of 1998 and 1999, methamphetamine and heroin remained the two predominant illicit drugs of abuse. Flunitrazepam, which is a legal medicine but has been abused by the nickname of FM2, ranked the third in the drug mentions of treatment admissions. The sniffing of glue, a substance abused in the 1960's, has recurred as the fourth drug mentions in the treatment admissions. The association between IDUs and AIDS was relatively weak (2.1%), but the high proportion of drug administration through injection (33.3%), surveyed in the treatment admissions, has made it an important issue in AIDS prevention.*

### INTRODUCTION

#### 1. AREA DESCRIPTION

Located in the West Pacific, Taiwan is separated from Mainland China by the Taiwan Straits. The Taiwan area consists of the Taiwan Island proper and some 85 islets, with a total land area of 36,000 square kilometers (14,000 square miles). Although Taiwan is relatively small, densely populated with 22,092,387 persons (census at the end of 1999). Such a high population density (610 persons per square kilometres of land area or 2483 persons per square kilometres of arable land) has made life on this tiny island very crowded and competitive. Nevertheless, the economy of Taiwan has been rapidly developed in the past two decades and the quality of life has also been substantially improved. The per capita national income in 1999 was NT\$ 427,343 (US\$ 13,248). This was a ten-fold increase over the US\$ 1,041 of 1976.

#### 2. DATA SOURCES AND TIME PERIODS

Data for this report were drawn from the following sources:

\* Ministry of Justice, Investigation Bureau; Ministry of Interior, National Police Administration; Ministry of Defense, Headquarters of Military Police;

Department of Health, National Bureau of Controlled Drugs; and All Local Health Departments -- Data on arrests, seizures and laboratory tests for urine samples collected from drug abusers for court referrals from January 1998 through December 1999.

\* Department of Health, National Bureau of Controlled Drugs, Surveillance and Reporting System for Drug Abuse -- The Department has, in collaboration with the designated medical care institutions and private institutions for addiction treatment, the toxicology counseling laboratories of the Taipei Veterans General Hospital and the Kaohsiung Medical University Hospital, had set up reporting channels and a surveillance and reporting system. Cases of drug abuse are reported online.

\* Department of Health, Center for Diseases Control-- Data on AIDS, HIV infection, from December 1984 through December 1999.

### 3. DRUG ABUSE TRENDS

#### Drug Abuse Situation

From 1990 through 1999 methamphetamine and heroin have been the major drugs of abuse. The drug abuse situation of 1998 and 1999 is described as follows:

##### 1. Methamphetamine

An average of 10,000 abusers were indicted each quarter during the past several years according to the results of urine tests for court referrals, performed by all local health departments, National Police Administration, and the Investigation Bureau of the Ministry of Justice. Methamphetamine represented in 91.1% of the total positive cases of urine testing in 1999 (Exhibit 1, 2). The amounts of methamphetamine remain the majority of seized drugs, and the quantity was increasing (Exhibit 3), demonstrating the efforts executed by the judicial systems on the supply side.

Although heroin topped in drug mentions among treatment admissions in 1998, methamphetamine became the most frequently mentioned drug in 1999 (Exhibit 4).

##### 2. Heroin

Heroin was the second predominant drug of abuse. Among the indicted abusers, heroin was present in 20.1% of those cases in 1999 (Exhibit 1, 2). The amounts of seized heroin were 121.8 kg in 1999 (Exhibit 3). Although heroin abuse was still a concern, the situation of heroin abuse leveled off during the past three years.

### 3. Codeine-containing Cough medicine

Sporadic cases of Codeine-containing Cough medicine seizure have been reported, although they only constitute 1.29 % of the treatment admissions (**Exhibit 5**).

### 4. Flunitrazepam and other depressants

Abuse of depressants was a relatively new issue. In September of 1995, the first abuse case of flunitrazepam (nicknamed as FM2) was reported in Tao-Yuan County, located in the northern part of Taiwan. Subsequent FM2 abuse cases have been observed nationwide since then. Drug mentions on depressants, most of them are FM2, consist of 10.75 % of the total treatment admissions and rank in the third place (**Exhibit 5**).

### 5. Inhalants

The major inhalant abuse was glue sniffing. The abuse of glue, which contains toluene as the solvent, was an epidemic in the 1950's. Glue manufacturers have been mandated by the government to add mustard oil in the glue preparations. However, glue sniffing has recurred in recent years. Glue was the fourth substance of abuse and consists of 7.39 % of the total treatment admissions (**Exhibit 5**).

### 6. Others

The seizures of marijuana and cocaine were very small, if compared with those of methamphetamine or heroin (**Exhibit 3**). Since marijuana has been widely abused and easily grown in the southeastern Asia, and many labors are introduced to Taiwan from this area in recent years, the effort to prevent marijuana abuse has been taken by the government. In addition, sporadic cases of MDMA abuse in pubs have been reported.

### 4. HIV/AIDS AMONG INJECTING DRUG USERS (IDUs)

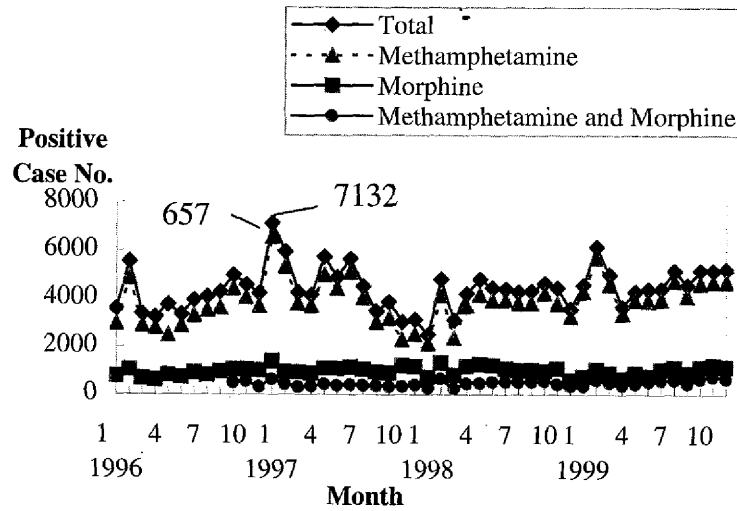
Human immunodeficiency virus (HIV) and acquired immunodeficiency syndrome (AIDS) positive cases increased rapidly in Taiwan from December 1984 through December 1999 (**Exhibit 6**). Of the 2375 HIV and 841 AIDS positive cases cumulatively reported from December 1984 through December 1999, 51 (2.1%) and 19 cases (2.3%) were classified as IDUs, respectively (**Exhibit 7**). Although the link between IDUs and HIV/AIDS was relatively weak, the data on the routes of drug administration, as shown in Exhibit 8, indicate the potential of HIV infection through needle sharing. To avoid the spread of HIV, the Department of Health has decided not to control syringes and needles, which are now freely available in any pharmacy.

**EXHIBIT 1: Results of Laboratory Testing on the Urines Collected from Drug Offenders in Taiwan from 1998 through 1999**

Year	Months	Positive Cases			Total			
		Methamphetamine	Morphine *	Methamphetamine & Morphine *				
1998	1-3	8,642	2,853	1,182	10,397			
	4-6	11,786	3,673	1,455	13,438			
	7-9	11,563	3,118	1,593	12,988			
	10-12	11,259	2,656	1,356	12,661			
	<b>Total</b>	43,250	12,300	5,586	49,484			
	%	87.4	24.9	11.3	100.0			
1999	1-3	14,564	2,700	1,460	15,723			
	4-6	11,196	2,323	1,352	12,322			
	7-9	12,799	3,060	1,674	14,124			
	10-12	14,033	3,546	2,061	15,545			
	<b>Total</b>	52,592	11,629	6,547	57,714			
	%	91.1	20.1	11.3	100.0			
1999 (%)	52,592	(121.6)	11,629	(94.5)	6,547	(117.2)	57,714	(116.6)
1998	43,250		12,300		5,586		49,484	
Trend		↑		↓		↑		↑

\* Heroin is manifested as its major metabolite, morphine, in the urine.

**EXHIBIT 2: Results of Laboratory Testing on Urine Samples Collected from Drug Offenders in Taiwan from 1996 through 1999**



**EXHIBIT 3: Seizures of drugs in Taiwan from 1998 through 1999**

Year	Months	Amounts of Seizure (gm)					
		Heroin	Methamphetamine	Marijuana	Opium	Cocaine	Morphine
1998	1-3	38,020.9	479,801.7	111.8	0.0	0.0	0.1
	4-6	47,768.6	117,093.7	224.0	9.1	0.0	3.0
	7-9	28,913.6	124,201.0	5,735.1	3,062.3	0.0	1.3
	10-12	19,270.8	182,750.2	5,245.6	12.0	145.0	34.6
	<b>Total</b>	<b>133,973.9</b>	<b>903,846.6</b>	<b>11,316.4</b>	<b>3,083.4</b>	<b>145.0</b>	<b>39.0</b>
1999	1-3	35,992.1	281,998.5	6,088.5	9.6	0.0	92.8
	4-6	31,614.2	783,732.5	174.4	0.0	0.0	16.4
	7-9	10,828.0	390,714.8	40,589.8	8.0	0.0	0.3
	10-12	43,429.0	158,861.9	132.8	5.2	0.0	3.0
	<b>Total</b>	<b>121,863.4</b>	<b>1,615,307.8</b>	<b>46,985.6</b>	<b>22.8</b>	<b>0.0</b>	<b>112.5</b>

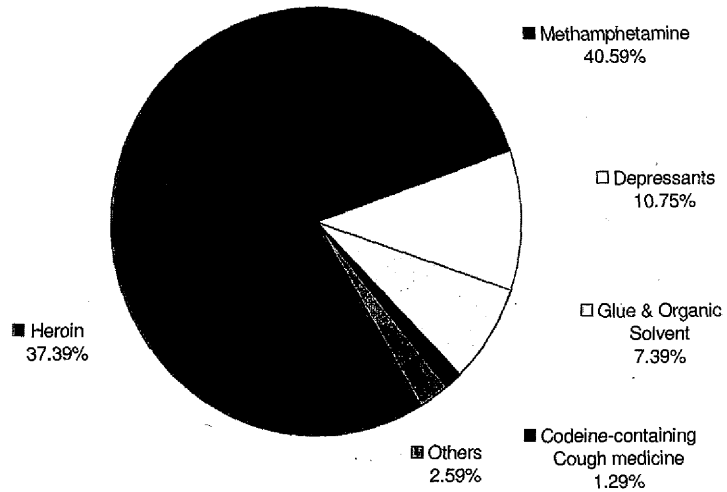
1999 (%)	121,863.4	1,615,307.8	46,985.6	22.8	0.0	112.5
1998	133,973.9	903,846.6	11,316.4	3,083.4	145.0	39.0
<b>Trend</b>	↔	↑	↑↑↑↑	↓↓↓	↓↓↓	↑↑

Source: Ministry of Justice, Investigation Bureau; Ministry of Interior, National Police Administration; Ministry of Defense, Headquarters of Military Police; Department of Health, National Laboratories of Foods and Drugs; and All Local Health Departments.

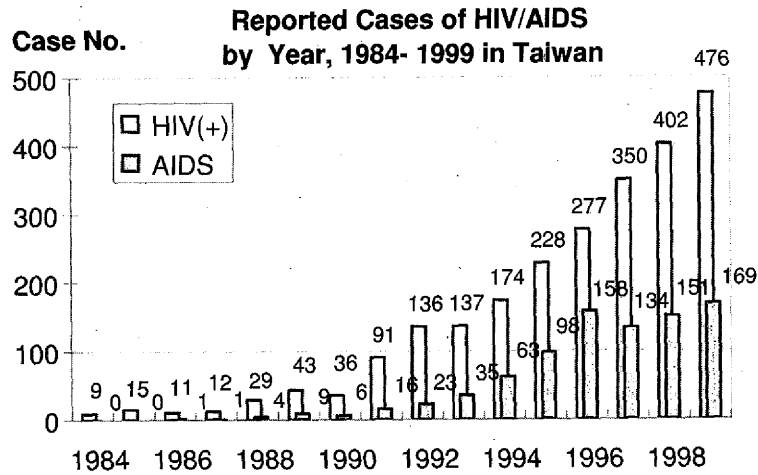
**EXHIBIT 4: Drug Mentions among Treatment Admissions from 40 Sampled Hospitals, 1998 – 1999**

Year	Months	Heroin	Methamphetamine	Depressants	Glue & Organic Solvent	Codeine-containing cough medicine	Others
1998	1-3	205	145	110	33	11	10
	4-6	256	186	114	28	6	8
	7-9	243	259	62	44	5	34
	10-12	237	290	67	54	9	18
	<b>Total</b>	<b>941</b>	<b>880</b>	<b>353</b>	<b>159</b>	<b>31</b>	<b>70</b>
	<b>%</b>	<b>38.7</b>	<b>36.2</b>	<b>14.5</b>	<b>6.5</b>	<b>1.3</b>	<b>2.9</b>
1999	1-3	253	304	65	73	11	13
	4-6	221	264	29	50	7	13
	7-9	211	274	41	34	9	18
	10-12	252	317	52	55	7	16
	<b>Total</b>	<b>937</b>	<b>1159</b>	<b>187</b>	<b>212</b>	<b>34</b>	<b>60</b>
	<b>%</b>	<b>36.2</b>	<b>44.8</b>	<b>7.2</b>	<b>8.2</b>	<b>1.3</b>	<b>2.3</b>
1999 (%)	937 (99.6)	1159 (131.7)	187 (53.0)	212 (133.3)	34 (109.7)	60 (85.7)	
1998	941	880	353	159	31	70	
<b>Trend</b>	↔	↑	↓	↑	↔	↓	

**EXHIBIT 5: Drug Mentions among Treatment Admissions from 40 Sampled Hospitals, 1998 – 1999**



**EXHIBIT 6**



\*Foreigners included

**EXHIBIT 7: Cumulative Cases of HIV Infection by Exposure Category, 1984 through 1999**

Exposure	* HIV Infection		AIDS		Death	
	Total	(%)	Total	(%)	Total	(%)
Heterosexual	982	(41.3)	406	(48.3)	247	(45.8)
Male homosexual	664	(28.0)	187	(22.2)	101	(18.7)
Male bisexual	383	(16.1)	181	(21.5)	120	(22.3)
Hemophiliac	53	(2.2)	18	(2.1)	28	(5.2)
Injecting drug user (IDU)	51	(2.1)	19	(2.3)	14	(2.6)
Blood transfusion	9	(0.4)	3	(0.4)	5	(0.9)
Vertical transmission	5	(0.2)	0	(0.0)	0	(0.0)
Unknown Risk Factors	228	(9.6)	27	(3.2)	24	(4.5)
<b>Total</b>	<b>2,375</b>	<b>(100.0)</b>	<b>841</b>	<b>(100)</b>	<b>539</b>	<b>(100.0)</b>

\* AIDS cases included.

\* Foreigners are not included.

**EXHIBIT 8: Route of Administration among Treatment Admissions in Sampled Hospitals, by Percentage, 1998-1999**

Route of Administration	Cases No.	Percentage
Oral	1254	24.6
Smoking	969	19.0
Snorting	57	1.1
Injecting	1698	33.3
Inhalation	1803	35.3
Sniffing	446	8.7
Others	27	0.5

Source: Department of Health  
Total Cases No.: 5104

**DRUG ABUSE IN VIETNAM**

**Tran Xuan Nhat**  
*Specialist*  
**Department for Social Evils Prevention**  
**Hanoi, Vietnam**

**1. OVERVIEW OF VIETNAM**

Vietnam is situated in Southeast Asia with an area of 330, 991 square kilometres. It has 3,451 kilometres of coastal line and border of 1,555 kilometres with Laos PDR, 982 kilometres with Cambodia in the West and 1281 kilometres with China in the North. In terms of administrative management, Vietnam is divided into 61 provinces and cities. Ho Chi Minh, Hanoi, Haiphong and Danang are the biggest cities. The population is 76 323 173 (according to the statistics of 1999).

In Vietnam the agency that is responsible for drug control is the National Committee for AIDS, drug and prostitution prevention. The standing office for drug control is the Ministry of Public Security. The Ministry of Labour, Invalids and Social Affairs (MOLISA) is responsible for treatment and rehabilitation.

**2. SITUATION OF DRUG ABUSE**

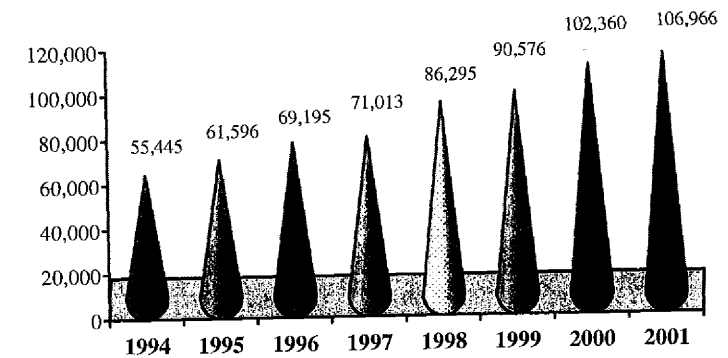


Figure 1: Number of Drug Addicts, 1994-2001

Besides the statistics on addicts through the surveys from 1994 to 2001, some recent studies on drug abuse among high-risk groups were conducted by DSEP/MOLISA with the assistance from UNDCP.

As of June 2002 there are about 131,700 drug addicts. The young addict's rate accounted for 72 percent the age of 18-25 accounted for 52 percent. (Figure 2: Drug Use by Age)

Heroin and opium are mainly used among addiction populations. About 70 percent drug addicts used heroin (Hanoi and Ho Chi Minh City about 90 percent). Besides, they used cannabis and other substances (Figure 3: Drug Use by Types). About 51 percent were opium users, 91.9 percent cannabis users by smoking, while 36.9 percent were heroin users by sniffing. 26 percent were opium users and 35.2 percent were injecting heroin users. (Figure 4: Route of drug use)

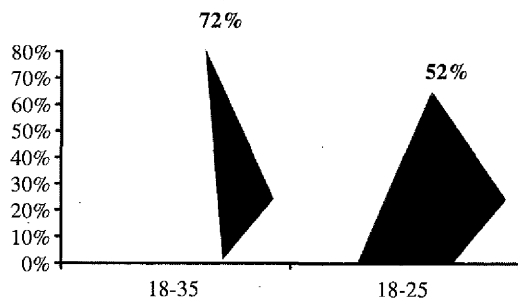


Figure 2: Drug Use by Age

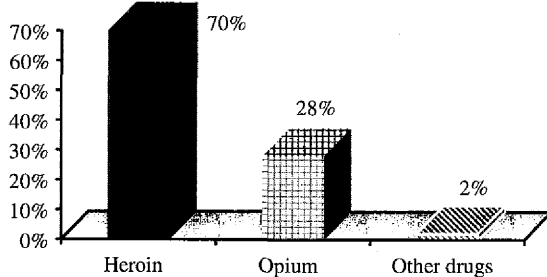


Figure 3: Drug Use by Type

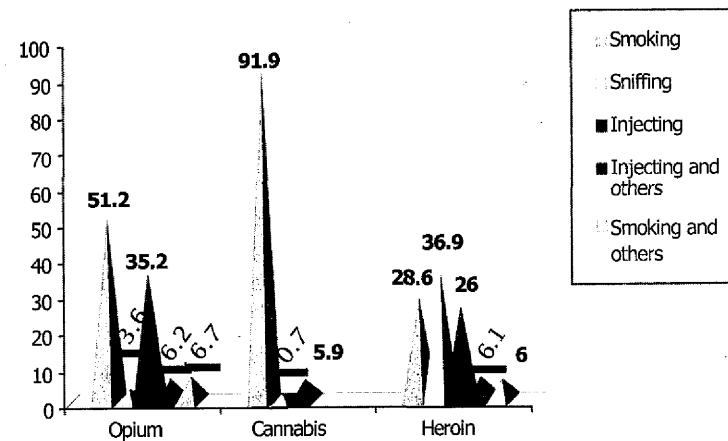


Figure 4: Route of Drug Use

### 3. NEW TREND OF DRUG USE

The survey conducted in 1994 showed that opium users accounted for 85.2 percent and heroin users, 1.4 percent. Up to now, opium and heroin are still the mainly abused drugs in Vietnam but there is a slight change: about 70 percent use heroin and 28 percent use opium. Some used heroin or opium together with other types of drug.

Amphetamine abuse appeared in 1990s but has been considered a problem in the big cities since 2001. According to the reports on drug addicts from drug treatment and rehabilitation centres, the number of ATS abusers is not many but the trend of ATS consumption is increasing. ATS abuse is mainly among youth for the purpose of remaining active for longer periods of time, often at centres of entertainment like dance parties and usually at nightclubs, karaoke, bars, etc.

The results of qualitative surveys on drug abuse among high-risk groups in 2001 under the AD/RAS/98/C75 project (student group, un/underemployed, street children and commercial sex workers showed ecstasy abuse among un/underemployed youth and commercial sex workers (figure 5: Ecstasy use).

## THE SITUATION OF ATS ABUSE - NEW TREND OF DRUG ABUSE

The general situation of ATS in the region shows that the problem of ATS abusing and trafficking is becoming more and more serious. In Vietnam, ATS has appeared in recent years, however, it is considered as a serious problem.

According to the statistics of ATS seizure there is an increasing amount of ATS being trafficked into Vietnam by many ways and methods. While the seizures of other kinds of drugs are on the decreasing trend, there is a great increase for ATS in particular.

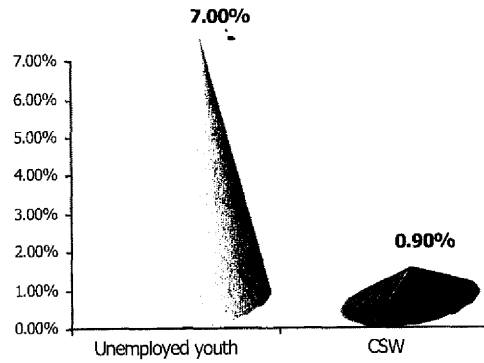


Figure 5: Ecstasy Use

## 4. TREATMENT AND REHABILITATION

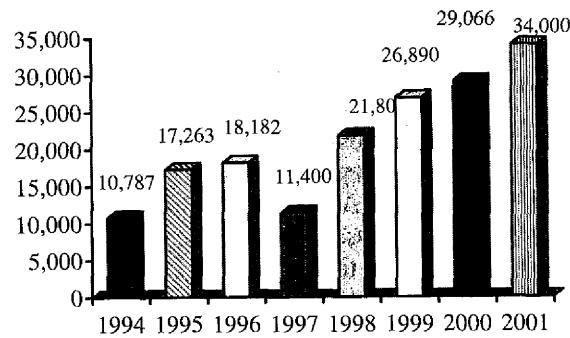


Figure 6: Number of Drug Treatment Admissions, 1994-2001

(In the first six months of 2002: the government -run drug treatment centres received 24,930 admissions).

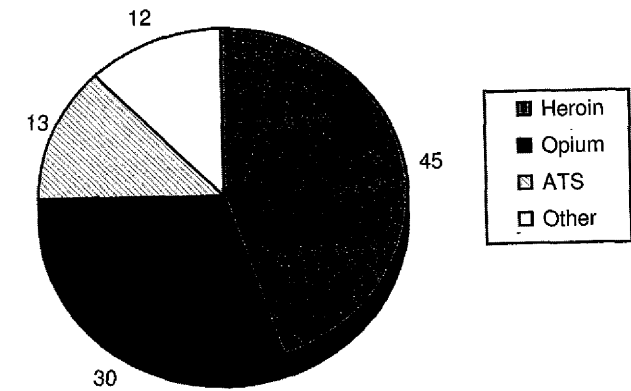


Figure 1: ATS abuse in Vietnam in 2001 (%)

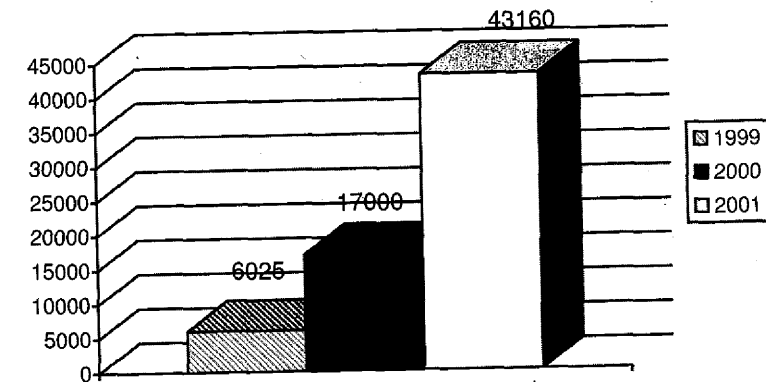
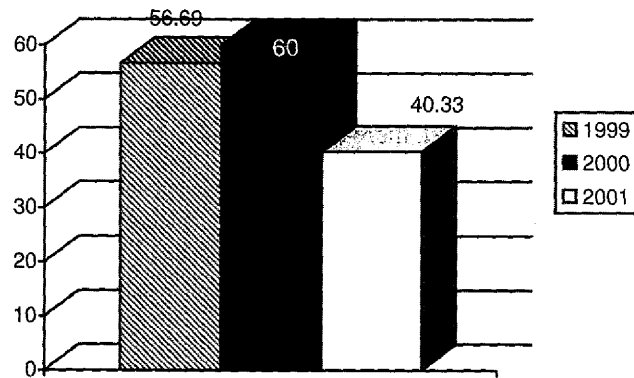
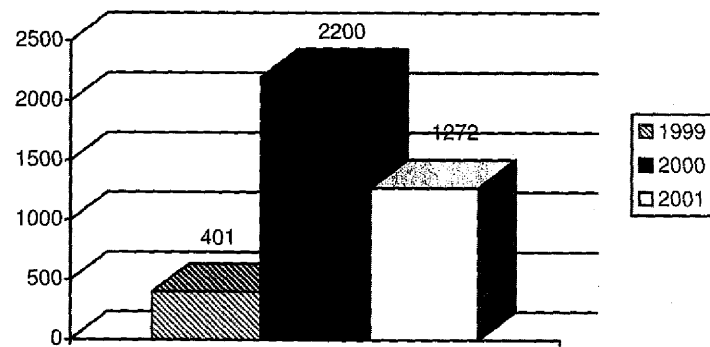


Figure 2: Number of ATS tablets seized in 1999, 2000 and 2001



**Figure 3: Amount of Heroin Seizures in 1999, 2000 and 2001 (kgs)**



**Figure 4: Amount of Cannabis seizure in 1999, 2000 and 2001 (kgs)**

The situation of ATS shows that the drug criminals are now shifting into producing and trafficking amphetamine-type stimulants as a substitution for other traditional drugs.

The situation of ATS abuse in Vietnam shows that the appearance of ATS in the illegal drug market has created some changes in the pattern and trends of ATS abusing and trafficking.

In recent years, the drug law enforcement has detected many ATS traffickers with various ways. Due to the characteristics of ATS tablets as well as its recent appearance that makes it difficult to distinguish sometimes, traffickers can easily transport a large amount of ATS from place to place without being detected. Among different types of ATS, there are some extremely potent compounds whose effective dose is about a few micrograms. Therefore the hiding and smuggling of synthetic drugs is easier than those of the traditional drugs prepared from plants.

ATS is mainly consumed in big cities by young people in urban areas. Drug abusers, especially in the urban areas now usually prefer ATS instead of other traditional drugs for its various ways of use as well as its characteristics such as a small tablet can produce a strong effect and last for many hours. ATS cannot be easily found in the black market. Therefore, the traffickers look to ATS. They use different ways and method of transporting ATS to the target places.

In the past, drug traffickers normally transport drugs from poppy plant cultivation areas to the consuming markets but now there are new routes established by the ATS traffickers to transport to the illicit drug markets.

ATS consumption in the illegal drugs market brings change to the structure, component and age groups of drug addicts. In the past, the opium addicts were mainly people at middle age living in poppy plantation areas, and then heroin appeared in urban areas with the involvement of the young un/under-employed population group. Now, ATS is considered much more serious with the increasing involvement of the young people including pupils and students.

Amphetamine-type stimulants have strong effects on the central nervous system. ATS has attracted young people due to its very strong intoxicating effects and subsequent over-stimulation of the brain. For this reason, ATS abusers, especially young people can easily commit crimes after using ATS.

For the specific characteristics and the strong effects of ATS, a part of young people now tend to use ATS in discotheques, night clubs etc. and violate social orders and security. This is the problem faced by enforcement bodies especially in big cities.

## 5. HIV/AIDS

As of 28 June 2002 the cumulative number of HIV/AIDS in Vietnam is 51,571 in which there were 7,586 AIDS patients and out of which 4,121 cases died of AIDS. In the first six months of 2002 alone 8,161 new HIV cases and 1,042 AIDS cases were detected, where 568 AIDS patients died.

## **PATTERNS AND TRENDS OF DRUG ABUSE IN PENANG**

**Othman, H; B. Vicknasingam; N. Suparman; Pakir, H.K.; S.M. Mansor;  
V. Navaratnam  
Penang, Malaysia**

MOLISA is responsible for providing treatment and rehabilitation services with medical support from the Ministry of Health. Drug treatment activities are organized under various modalities like at MOLISA-run centres, at community or family. Every year there are about 25,000 - 30,000 admissions for drug treatment. The procedure of drug treatment and rehabilitation consists of detoxification, health recovery, and labour therapy, community integration.

A treatment procedure for ATS abusers is not defined since the ATS abusers do not think they are addicted, on the other hand they are not detected for cure. As a result, only a small rate of the addicts under drug treatment programmes at the centres reported they have ever used ATS.

The fight against drug problems has recorded significant results in recent years. However, the situation of illicit drug trafficking and drug abuse is still very complicated. Besides improving services of drug treatment and rehabilitation, to cope with the increasing situation of ATS abuse, MOLISA plans to cooperate with concerned agencies to conduct surveys and research on ATS abuse and treatment.

### **1. INTRODUCTION**

Like other developing states in Malaysia, Penang is confronted with a formidable problem of illicit drug abuse and trafficking. Its strategic geographical location and proximity to almost all its neighbouring Southeast Asia countries make the state vulnerable to various illegal activities. Penang has one of the largest populations of addicts in Malaysia. Recent reports show that the numbers of new and repeat addicts have increased tremendously. However patterns of drug abuse remained the same, with heroin and cannabis being the major drugs of abuse. However in 2000 and 2001 there has been some increase in abuse of synthetic drugs, which includes amphetamine-type substances (ATS). As expected, the typical addict is between 20-34 years of age and employed as a general labourer or sales worker. A comparison between new and recurrent cases of drug addiction as reported in Penang is also presented. Most of the addicts detected were recidivists.

### **2. AREA DESCRIPTION**

The state of Penang is also known as the 'Pearl of the Orient'. It is one of the fifteen states of Malaysia and is situated on the north-western coast of Peninsular Malaysia. It is made up of two physical entities, Penang Island and Seberang Perai. It consists of five districts with an estimated land area of 1031 square kilometres. The population of Penang is 1234.4 million with the ethnic composition of 65% Chinese, 20% Malays and 10% Indians and 5% other races. In 1998, the age distribution was 300,040 in the 0-14 years age bracket, 800,031 persons in the 15-64 years age group and 61,900 people above 65 years old. There were 613,040 males and 621,001 females in 1998.

### **3. DATA SOURCES AND TIME PERIODS**

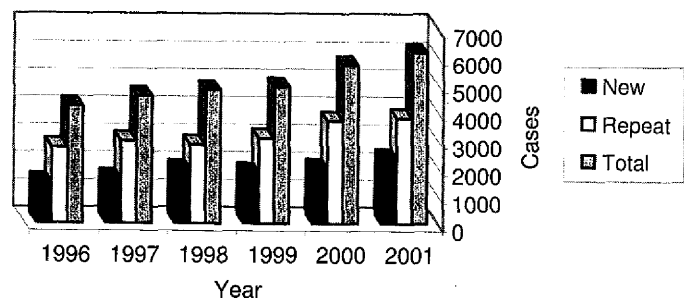
The National Drug Information (NADI) System of the National Narcotics Agency, Ministry of Home Affairs is the main data source for this report. The system collates all data submitted by the fifteen National Narcotics Agency state branches, the Ministry of Health, Police Department, Prisons Department, private rehabilitation centres and all anti-drug and health care agencies throughout Malaysia. This report consists of two aspects, a comparison of annual data on addiction, type of drug abused and aspects of

drug offenders for 2000, 2001 and January-June 2002 and an update on the drug abuse situation in Penang between January and August 2002.

#### 4. NUMBER OF ADDICTS IDENTIFIED .

The drug abuse problem in Penang remained critical at about 516 addicts per month or 67 addicts per day, which has increased 7.5% to 6201 in 2001 as compared to 5731 in 2000 (477 addicts per month). Of the total number of identified addicts in 2001, 38.5% were new cases and 61. 5% were repeat cases (Figure 1). The total number of addicts identified has increased tremendously. This is due to intensive efforts made by implementing agencies to combat drug abuse. In fact, this is the first time the number of new cases and relapse cases has exceeded seven percent since 1990. Relapse cases rose by 2.7% to 3823 addicts from 3717 addicts in 2001.

FIGURE 1: Type of Cases Detected 1996 - 2001



For the first six months, there was a slight increase in cases detected from January to June 2002. The total number of cases increased to 433 cases (14.2%) as compared to the first six months of 2001. Thus, Penang had the highest number of addicts in Malaysia for the first six months of 2002 (Figure 2). This could possibly be due to numerous exercises carried out by the Penang Narcotics Department and various agencies, as an effort to clean the city from drug abuse.

FIGURE 2: Number of Addicts Detected by State from January – June 2002

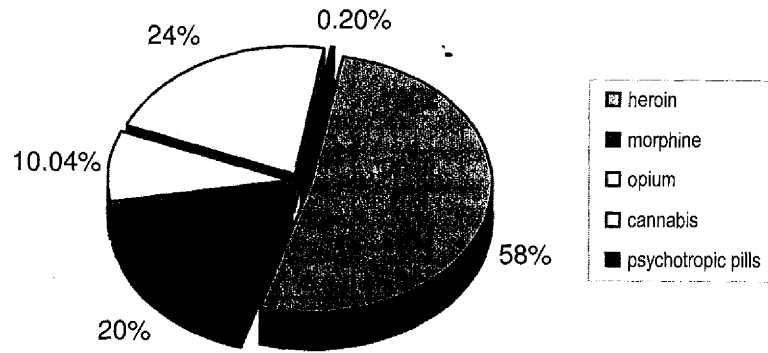
No.	State	2001	2002	
			June	Average per month
1.	Penang	2600	3033	505
2.	Kedah	892	2867	478
3.	Selangor	1243	1832	305
4.	Perak	1661	1561	260
5.	Kuala Lumpur F.T*	986	1498	250
6.	Kelantan	1425	1346	225
7.	Sabah	1180	1291	215
8.	Johor	784	974	162
9.	Terengganu	732	700	117
10.	Negeri Sembilan	673	615	102
11.	Pahang	577	456	76
12.	Perlis	64	294	49
13.	Melaka	275	266	44
14.	Labuan F.T*	57	112	19
15.	Sarawak	63	45	7
	<b>Total</b>	<b>13,162</b>	<b>16,890</b>	<b>2,815</b>

\* F.T.= Federal Territory

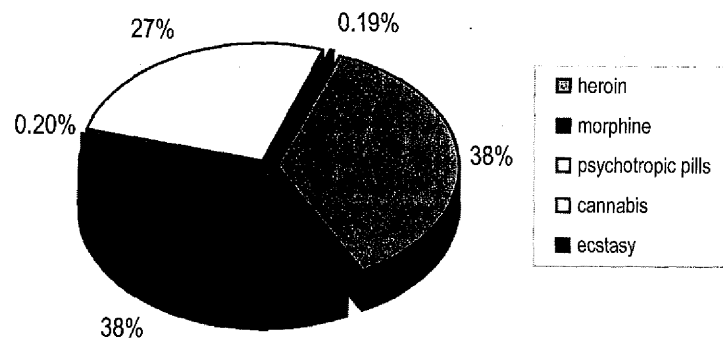
#### 5. TYPE OF DRUG ABUSE 2000-2001

Heroin continued to be the main type of drug abused by most drug addicts in 2001. The highest number of addicts using heroin was recorded in 1997 at 3116 (67%). In 2001, heroin was abused by 2335 addicts (38%) of the addict population in Penang compared to only 24% of new addicts. However, the numbers of morphine and cannabis abusers are also on the rise. For example, the number of morphine abuser increased from 20% in 2000 to 38% in 2001, cannabis from 1200 users to 1468 users in 2001. A slight minority of psychotropic pill users (0.2%) was also detected in the year 2001 (Figure 3).

**FIGURE 3.1: Types of Drug Abused in 2000 - 2001**



**FIGURE 3.2: Types Of Drug Abused in 2001**



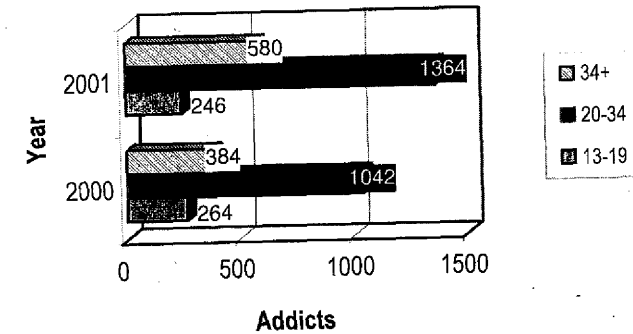
**6. ROUTE OF ADMINISTRATION**

In Penang the main route of administration used by heroin abusers was ‘chasing the dragon’. Between 2000 and 2001, the proportions of heroin addicts using this method were almost the same (69 to 70%). The other heroin addicts either injected or smoked the drug. However, injecting heroin has remained almost constant (21-23%). All new morphine abusers injected the drugs. Cannabis was smoked, while psychotropic substances and ATS were taken orally.

**7. AGE WHEN DETECTED**

The majority of drug addicts in Penang during 2000 were males (98.7%) aged between 20-34 years old. For the year 2001 however, addicts in the 20-34 years age group have gradually decreased to 57% or 1364 addicts while addicts aged between 13 to 19 years recorded a decrease of almost 4.3% (Figure 4).

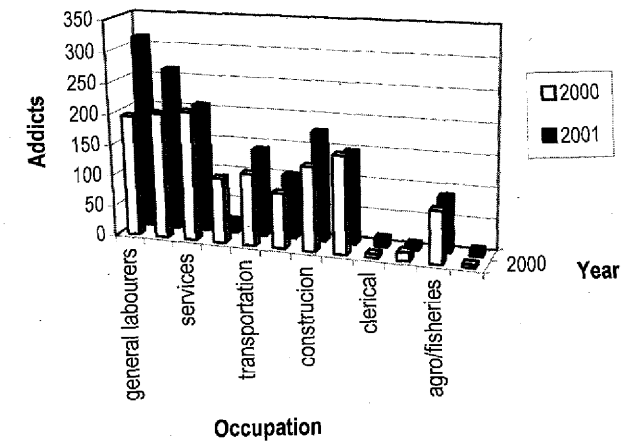
**FIGURE 4: Age of New Addicts When Detected in Penang, 2000 - 2001.**



**8. OCCUPATION**

Similar to previous years, labourers, construction workers and workers in the service industry make up the largest number of new addicts detected. But the proportion of new addicts across all work categories has remained constant between 1992-2000 (Figure 5).

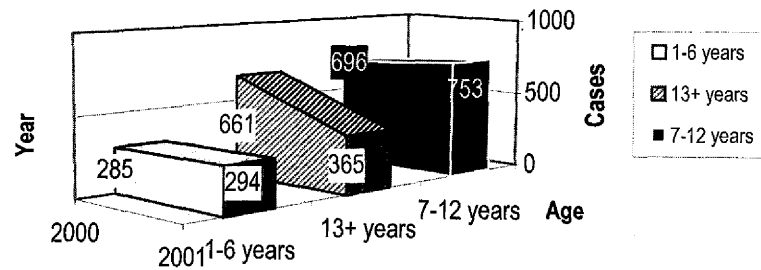
**FIGURE 5: Occupation of New Addicts Detected in Penang, 2000 - 2001**



## 9. LEVEL OF EDUCATION

Majority of the drug abusers have basic education. In 2001, 1479 addicts (95.4%) were educated compared to 1317 addicts in 2000. In the same year also, 294 addicts completed between 7 to 12 years of education compared to 285 addicts in 2000, while 753 received 7 to 15 years of education in 2001 as opposed to 696 addicts in 2000 (Figure 6).

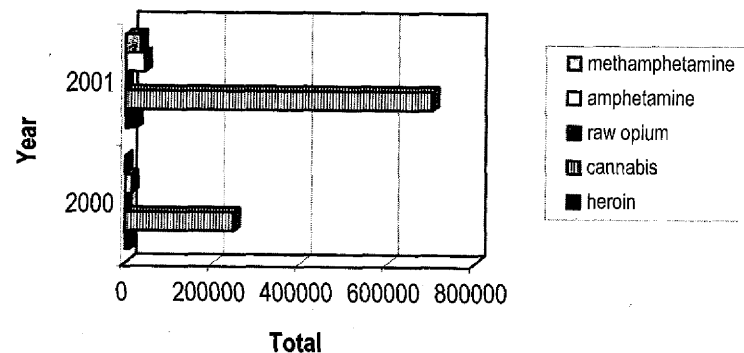
**FIGURE 6: Number of Years in Education of New Cases  
2000 - 2001**



## 10. DRUG SEIZURES AND ARREST

Seizures of all types of drugs increased in 2001 except for raw opium. The amount of cannabis seized in Penang has increased more than 100% from 248,132.61 to 703,083.96 in 2001. Similarly, heroin seizures have also increased to 24,320.34 from 10,365.9 in 2000. 42,920 amphetamine pills and 33,947.2 methamphetamine were also seized in Penang in 2001. It is also reported that the drug seized in Penang in 2002 was the highest in the country (Figure 7).

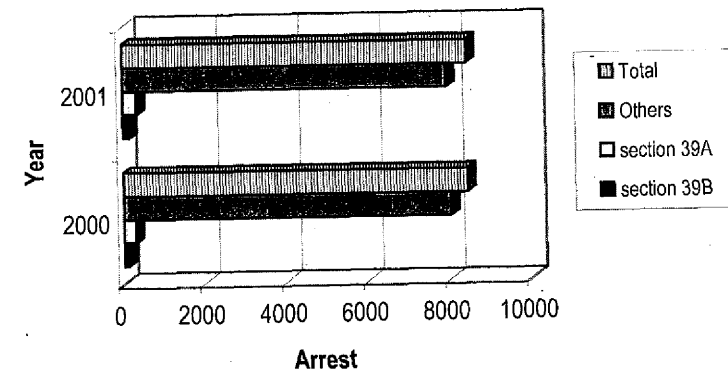
**FIGURE 7: Drug Seizures in 2000 - 2001**



## 11. ARRESTS OF DRUG OFFENDERS

More drug offenders in Penang were arrested in 2001 compared to 2000. A total of 8436 people were arrested under the various drug acts in 2001. A total of 154 people were arrested under Section 39B of the Dangerous Drugs Act 1952, which has increased more than thirty percent compared to the number arrested in 2000. The number of drug peddlers arrested under Section 39A of the DDA in 2001 increased by 10% compared to the year 2000. Arrest figures of almost the same proportions were recorded in 2001 and arrest trends have remained consistent since 1990. Figure 8 shows the number of arrests under the various sections of the Dangerous Drugs Act for 2000 and 2001.

**FIGURE 8: Number of Arrests Under The Dangerous  
Drugs Act (DDA) 1952, 2000 - 2001**



## CONCLUSION

Despite State and Federal Government efforts to eradicate illicit drug trafficking and its use, drug abuse and trafficking remains a serious problem. It is noted that the number of addicts identified for the year 2000 and 2001 are larger than that of previous years, thus earning a lot of attention and concern from the authorities. Despite a comprehensive review of the new policy and strategy to combat drug abuse problems in 1996, positive results has yet to show. However, there is now a higher level of awareness among the people in Penang. The active involvement of every member of society will serve to underpin Government efforts. While there can be no doubt that the duties of apprehending drug offenders and initiating preventive measures rightly belong to Government agencies, it is also true that drug addiction is a problem of society. As such, the responsibility of actively cooperating with and complementing the efforts of the government to discharge its obligations effectively rests upon each and every citizenry. Our aim is a drug-free generation.

# YANGON REPORT

**Dr. Gyaw Htet Doe**  
**Senior Consultant Psychiatrist-in-charge**  
**Drug Treatment Centre**  
**Sao San Htun Hospital**  
**Taunggyi, Shan States (South)**

## INTRODUCTION

Occupying the largest area on the South East Asian peninsula, Myanmar has an area of about 680,000 square kilometers, roughly equal to France and United Kingdom put together. It is inhabited by a population of over 47 million people belonging to 135 national races. Myanmar shares common borders with China in the north and the northeast; Laos in the east; Thailand in the southeast; India and Bangladesh in the west. In the southwest is the Indian Ocean. Myanmar's coastline extends from where Myanmar and Bangladesh meet, down southwards, ending in the southern extremity where Myanmar and Thailand meet, making a very long coastline of over 2000 kilometers. It is a land of hills and valleys and is rimmed in the north, east and west by mountain ranges forming a giant horseshoe. Enclosed within the mountain barrier are the flat lands of Ayeyarwady, Chindwin and Sittaung Rivers valleys where most of the country's agricultural land and population is concentrated. The term Myanmar embraces all nationalities: the Bamar, the Chin, the Kachin, the Kayah, the Kayin, the Mon, the Rakhine and the Shan. Each of them belongs to one of the three major racial groups: the Monkhmers, the Tibeton Bamars and the Thai-Shans. According to the statistics of 1998-99, the population of the country is estimated at 47.25 million and the population growth rate is 1.84 percent. Males constitute 23.46 million, forming 49.66 percent and females constitute 23.79 million, forming 50.34 percent. It is expected that population will reach 50 million by the year 2000.

## YANGON CITY

Yangon City was founded in 1755 by King Alaungpaya (the founder of Kon-Baung Dynasty) as Yangon (known previously as Dagon), which literally means end of strife. Afterwards, the town went by the name of Yangon for nearly a century. In 1851, however, the British annexation of Yangon resulted in getting the town refounded. And the name also was changed to Rangoon.

Since then, the city has been designated as the capital of Myanmar and known to the world as Rangoon. The new city was modeled and constructed by Lieutenant Fraser, a British Officer of the Engineering Corps who, it was believed, also designed and

constructed Singapore. The city was laid out on a chessboard pattern with wide roads running North to South and East to West.

## Climate

Yangon is situated in the tropical zone. A year is divided into 3 distinct seasons in the region: namely, hot season, rainy season, and cool season. Temperatures often reach 33 degrees Centigrade during the hot season. The city usually receives a high annual rainfall.

## Population

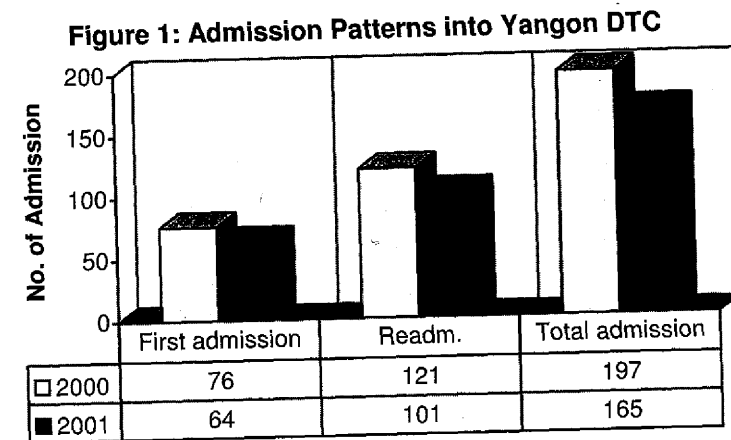
The population of Yangon is nearly five million, spread over an area of 223.217 square miles. Yangon is comprised of 31 townships with a population density of 13,880 per square. Mile (1991)

## TREATMENT INDICATORS

### Admission patterns into Yangon DTC

See Figure 1.

The total admissions into the Yangon Drug Treatment Centre decreased from 197 in 2000 to 165 in 2001. First admissions are found to be less than readmissions during these two years.



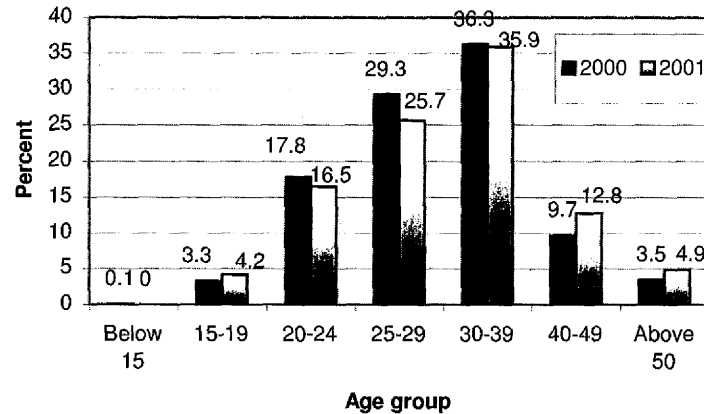
## SOCIODEMOGRAPHIC CHARACTERISTICS OF DRUG USERS IN TREATMENT

### Age group distribution of drug users

See Figure 2.

The majority, more than 80 percent, are in the 15-39 year age group with the highest proportion found in the 30-39 year age group. No marked changes in the age group composition of drug users over the two-year period were observed.

**Figure 2: Age Group Distribution of New Registered Cases**

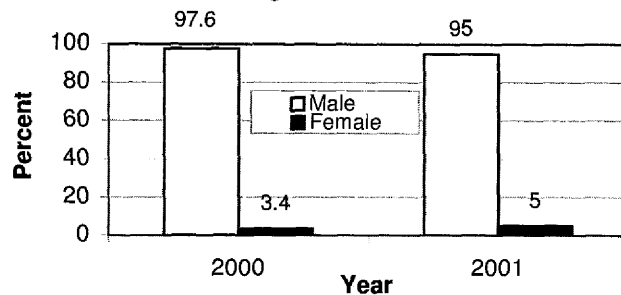


### Gender distribution of drug users (new registered cases)

See Figure 3.

Males predominate among the new registered cases although there was a slight increase in the proportion of females in 2001.

**Figure 3: Gender Distribution of New Registered Cases**



### Employment status

The majority of drug users are employed while about a quarter are unemployed. About five percent are students and marked changes in the distribution with regard to employment status are not observed.

### Educational status

Individuals with middle school education constitute the highest proportion, followed by illiterates, high school and primary school education. The pattern suggests that individuals having lesser levels of education are coming in for registration and treatment.

### ROUTE OF ADMINISTRATION

The majority of drug users use the smoking route, followed by intravenous route. There is an increase use of less 'harmful' route of use and decrease in the use of more 'harmful' route of use over the two-year period.

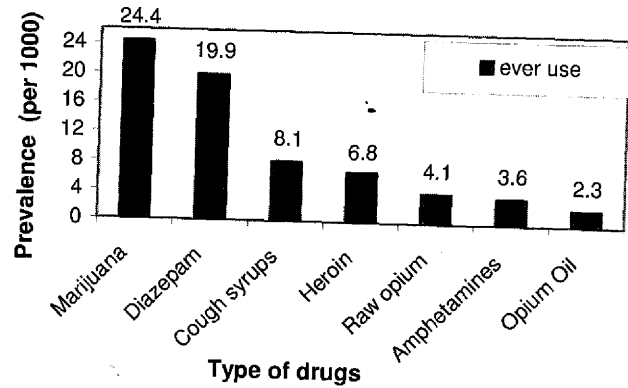
### Survey Data

#### Community-based Prevalence Survey findings in an urban township of Yangon City

See Figure 4.

A community-based survey was conducted from 11th October to 7th November 1999 (four weeks) in an urban township of Yangon City. 17 wards out of a total of 37 wards in Thingangyun Township were randomly chosen. The total sample included 2211 males within the ages of 10-40 years. An interview schedule questionnaire was used, and recorded anonymously. Some of the salient findings are that marijuana was the most commonly used drug followed by diazepam and cough syrups with heroin in the fourth position.

**Figure 4: Lifetime Prevalence of Drug Abuse Thingangyun Township, October 1999**

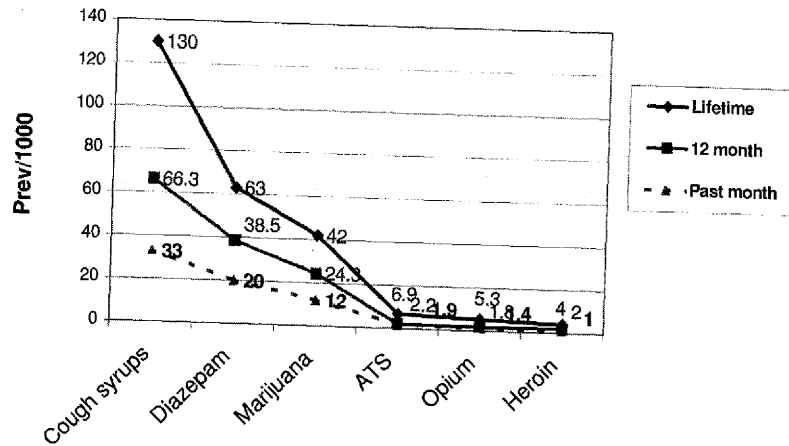


**School Survey Data**

The main objective of the study was to assess the drug abuse situation and risk factors of drug use among high school students in Myanmar. Sample size for the study was a total of 23,159 high school students. Four main cities (Yangon, Taunggyi, Monywa and Mawlamyine) participated in the survey. Data was collected from a total of 27 public high schools. Salient findings from the study revealed that among the illicit drugs, marijuana is the most commonly used drug, followed by ATS, opium and heroin. Among the prescribed drugs, cough syrups and diazepam were the most commonly abused drugs by the students and at higher levels than the illicit drugs.

**See Figure 5.**

**Figure 5: Prevalence of Drug Use by High School Students Sub-regional Project C75, 2000.**

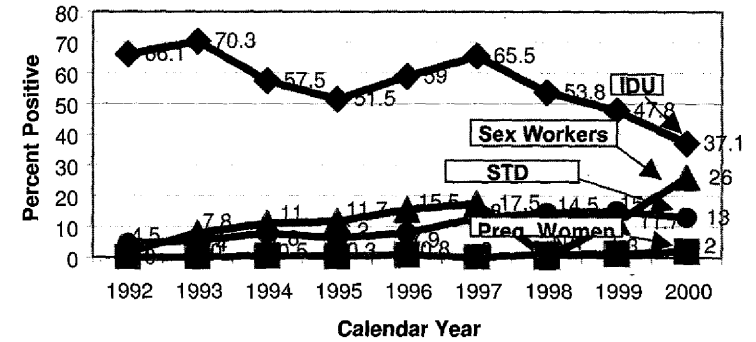


**Drug use and HIV**

**See Figure 6.**

Decreasing HIV levels among injecting drug users (IDUs) are seen according to sentinel surveillance data but still at high levels which is accompanied by slight decreasing HIV levels among sexually-transmitted disease (STD) patients. A marked increasing trend among sex workers is seen with a steady increase among pregnant women.

**Figure 6: HIV Sentinel Surveillance Data of Yangon City**

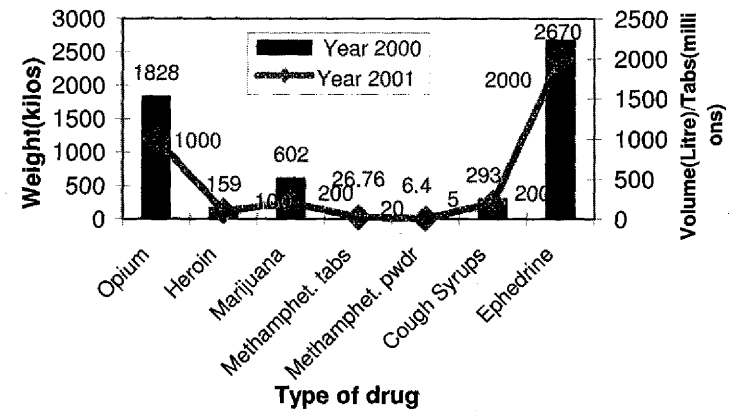


**Seizure data**

**See Figure 7.**

The national seizure data for the year 2000 and 2001 shows that the amount of drug seized reduced in 2001 as compared with the year 2000 levels. Ephedrine powder was the top precursor being seized at 2670 kilos in 2000 and 2000 kilos in 2001.

**Figure 7: Drug Seizures**



## CONCLUSION

There is an urgent need to have a drug abuse monitoring system in Myanmar in order to monitor the drug abuse situation. The data collected has indicated a certain amount of changing trends in drug abuse preferences towards ATS in Yangon City, a trend that brings along with it different requirements at treatment facilities, prevention programmes etc. since amphetamine psychosis patients tend to be very violent and very destructive to the community. Thus there is an urgent need to act fast and put ATS prevention efforts in place.

## EPIDEMIOLOGIC TRENDS IN DRUG ABUSE IN SRI LANKA – 2001

Y. Ratnayake

*National Dangerous Drugs Control Board, Sri Lanka*

### 1. AREA DESCRIPTION

Sri Lanka is a relatively small (62,337 sq.km) tropical island close to the southern end of India. The central hill country rises a little south of the centre of the island and is surrounded by low-lying coastal plain. Sri Lanka has been ruled over a period of almost 24 centuries by a continuous monarchical chain, and the capital city has moved from place to place. Foreign dominations began in Sri Lanka in 1505 with the advent of the Portuguese who ruled the parts of the country until 1657, when the Dutch took over. The period of domination of the Dutch was 137 years, when they yielded to British, who for 150 years ruled the entire country. In 1948, Sri Lanka obtained her independence.

According to the 2001 Census the population in the country (except North & Eastern Provinces) is 16.8 million, with a marginal female preponderance. The population is multi ethnic and multi religious. Most of the people (78 percent) live in rural areas. The Sri Lankan family is traditionally of the extended type. But urbanization, population pressure, lifestyle trends, employment of women, rising cost of living, difficulties in housing etc., have been contributing to the rapid shift towards the nuclear type.

Traditionally an agricultural country, Sri Lanka has recently begun to expand into other areas of production and export. Free trade and tourism are major economic areas into which the country is moving rapidly. Recent years have seen many people seeking long-term employment abroad. The health status of the country is good compared to that of other countries in the southern hemisphere. Education is provided free and schooling is compulsory. The country has a literacy rate of 91 percent for males and 83 percent for females.

### 2. DATA SOURCES

The main source of data presented in this paper is from the Drug Abuse Monitoring System (DAMS), which is the official source of epidemiological information of drug abuse in Sri Lanka. The DAMS is an event reporting system.

It is not compulsory to report treatment events. However, main treatment centres (GOs/NGOs) in the country send information to the system, in specific forms, on a monthly basis. The Police Narcotics Bureau and local Police Stations are required to send returns to the database. Other sources of information include the Department of

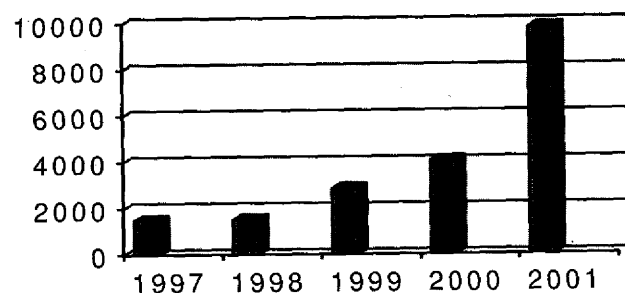
Prisons, Outreach Workers of the NDDCB stationed in several major cities, National Narcotics Laboratory of the NDDCB, key informants and newspaper reports.

### 3. TREATMENT INDICATORS

#### 3.1 Admissions to Drug Treatment Facilities

All treatment admissions are not reported to the DAMS. Private practitioners, private hospitals are not reporting. NDDCB treatment facilities, some government hospitals, Prisoner Diversion Scheme, NGOs, Drop-in-Centres and Community Based Camps are the main information sources to the DAMS. The total number of treatment admissions in 2001 is 9,782. As it stands today the reporting system is not identifying relapse cases.

**Exhibit 1: Admission for treatment by drug dependents from 1997-2001**



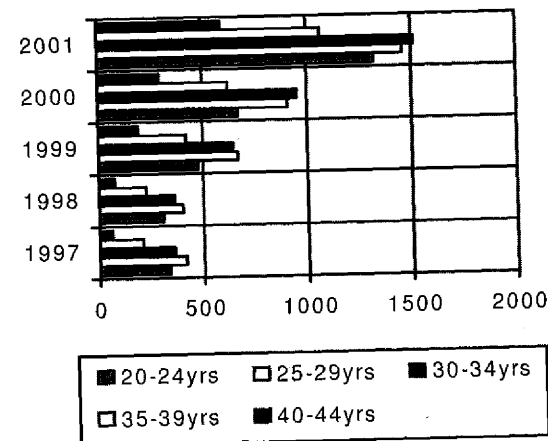
Source: Drug Abuse Monitoring System (DAMS)

#### 3.2 Socio-Demographic Characteristics

**Gender:** Of the persons reported to the DAMS 99 percent were males and 1 percent were females.

**Age:** The highest number of persons reported, 21.7 percent were aged between 30-34 years. This was followed by 21 percent between 25-29 years, 15 percent between 35-39 years, 19 percent between 20-24 years, 8 percent between 40-44 years and 7 percent above 50 years. The percentage of admissions in the age group of 15-19 was 2.5 percent.

**Exhibit 2: Age distribution of treatment admissions from 1997-2001**



Source: Drug Abuse Monitoring System (DAMS)

**Ethnicity:** The ethnicities of the persons reported during the year 2001-were Sinhalese 81 percent, Tamil 8 percent, Moor 7 percent, Malay and Burghers 1 percent.

**Religion:** Of reported persons during the year 70.6 percent were Buddhists, 12 percent Christian, 9 percent Islamic and 6 percent Hindus.

**Education:** Of the reported persons 24.5 percent up to G.C.E (Ordinary Level), 23 percent had studied between year 9-10, 22.6 percent between year 5-8, and 13 percent below year five, 9 percent had no schooling, 7 percent up to G.C.E (Advanced Level).

**Marital Status:** Among the persons reported 52 percent were single, while 46 percent were married.

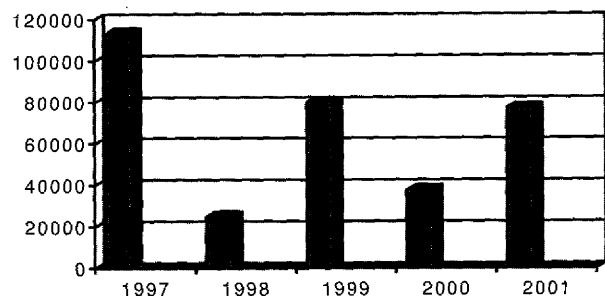
#### 3.3 Drug Abuse Trends

##### 3.3.1 Primary drug of abuse

**Cannabis (Ganja):** Cannabis is believed to be the most prevalently used illicit drug in 2001. Illegal cultivation of cannabis continued as in previous years in the jungle areas of Sri Lanka. Traditionally it is mostly grown in the Southeastern region in the country. Although no survey has been done in 2001 (or in the recent past) on the extent of illicit cultivation of the cannabis plant, some useful information is available. According to those reports, cannabis plantations are mostly confined to an average ¼ acre plots in

jungles and also grown as a 'side crop' by the cultivators of vegetables. Cannabis cultivators are mostly controlled by the local businessmen in their respective areas.

**Exhibit 3: Quantity of cannabis seized (in kg.) 1997- 2001**

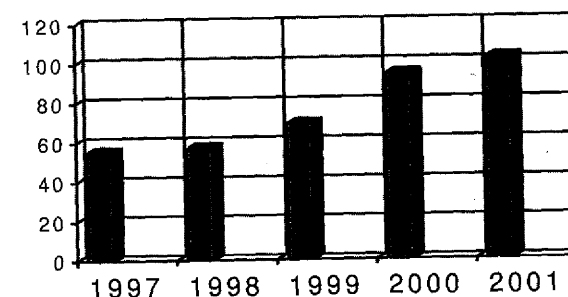


Source: Drug Abuse Monitoring System (DAMS)

The trafficking of locally produced cannabis is from outstations to Colombo. From the jungles it is first brought to villages, then to towns and via provincial capitals to Colombo, mostly along with vegetables and other consumer goods. During the period of January to December 2001, seized cannabis totalled 77,027.305 kg. Cannabis is inexpensive, compared to heroin or opium. Its value was Rs. 1,500 (approximately US\$ 1.5) a kilogramme at street level. Most of the cannabis offenders were young male adults. Whilst smoking of cannabis is confined mostly to low income groups of the city and villages some reports suggests that even affluent youth in the city engage in it regularly at 'parties'. Cannabis smoked at the 'parties' is of higher quality than that of the street level, prepared mostly from the inflorescence of the cannabis plant. Outreach staff of the NDDCB reported students (attending private tuition classes) in several cities, frequently smoke 'mal-packet' which is a preparation of packeted dried tender cannabis leaves and inflorescence.

**Heroin:** Heroin was the most frequent illicit opiate of abuse. 'Brown Sugar' (number 3 heroin) was available in most parts of the island as in the previous year. In 2001 the quantity of heroin seized was 102.216 kg by the drug law enforcement officers. Bults of it came from India and lesser quantities from Pakistan. The average purity of heroin seized in bulk was about 55 percent diacetylmorphine and that of street level heroin was around 52 percent. The average street price of number 3 heroin ranged between Rs. 10,500 to Rs. 20,000 per gramme (approximately US\$ 105-200).

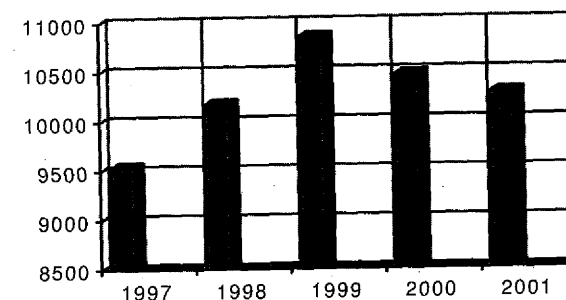
**Exhibit 4: Quantity of heroin seized (in kg) from 1997-2001**



Source: Drug Abuse Monitoring System (DAMS)

**Heroin market:** The heroin dealing in towns outside Colombo was apparently done by small-scale traffickers who travel between Colombo and outstation. They supply heroin mostly to local street pushers-cum-users who would generally resell the stock for a commission of 1-2 packets of heroin for every 25-30 packets sold. The traffickers use buses, night trains or sometimes 'three wheeler' taxis from Colombo to transport heroin with them.

**Exhibit 5: Number of persons arrested for heroin related offences from 1997-2001**



Source: Drug Abuse Monitoring System (DAMS)

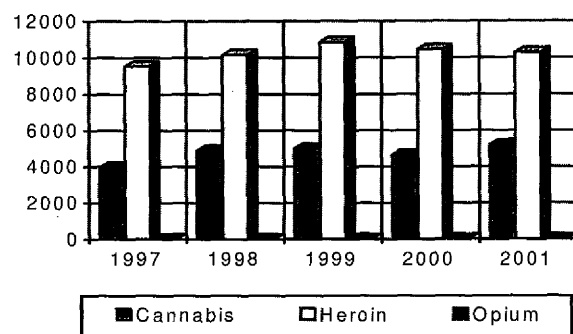
There appeared seasonal variations in heroin sales. Availability of heroin on the streets dropped suddenly to unprecedented levels during June 2001. This was mainly due to the seizure of heroin bound to Sri Lanka by Indian authorities and also several significant seizures done within the country. As a result the drug was not available in many areas in the island, some heroin dependents committed or attempted suicide, and some admitted to treatment programmes.

**Heroin use in Colombo:** Colombo city and its suburbs reported the highest number of heroin users. Many heroin users from Colombo come from 'gardens' (shanty/slum areas) and densely populated lanes generally considered as 'poor' by the mainstream of society. However, many of the users earned between Rs. 200-400 a day as wages during the period under review. Many worked in the informal sector of the city's work force and the employments were generally seasonal. The profile of heroin users in Colombo more or less fit that of their counterparts in other towns as well.

**Treatment:** Heroin dependents in the country sought a variety of treatments. They ranged from popular in-patient detoxification and rehabilitation at NDDCB treatment centres, out-patient treatment from allopathic medical practitioners, homeopathic treatment, Ayurvedic treatment, self medication by drugs obtained from pharmacies and other outlets, seeking spiritual help from deities, religion-based treatment, making vows at various places of worship, and changing their place of residence. Some heroin dependents underwent treatment at psychiatric wards without identifying themselves as heroin users.

**Opium:** Opium abuse has taken a downward trend with the dawn of the 1980s. However, opium continues to be available and abused in Sri Lanka for a long period of time. The abuser obtains his requirement from the stocks of opium, which are imported from India for medicinal purposes, or from the stocks which are illicitly brought into the country. The street level price of opium was around Rs. 450,000 per kilogramme in 2001.

**Exhibit 6: Number of persons arrested for drug related offences from 1997-2001**



Source: Drug Abuse Monitoring System (DAMS)

**Psychotropic Substances:** Flunitrazepam, Mandrax, Diazepam, Codeine, Methadone, Amphetamine, Valium, and Rohypnol were the widely abused psychotropic substances during the year. According to reports some pharmacies in Colombo and outstation sold most of those substances over the counter for drug dependents charging high prices. There were occasions that some tablets were given

free with heroin to enhance the effect of heroin. Further, unofficial reports confirmed the use of Ecstasy at nightclubs.

**Cocaine:** There were no arrests or official reports on cocaine related incidences in 2001 as in previous years. However, unofficial reports confirmed limited availability and use of cocaine by some foreign nationals (non tourists) in Colombo. The local price of cocaine is not known. The drug was not available in the open drug market.

### 3.3.2 Route of Drug Administration:

**Method of heroin administration:** Inhaling of heroin vapour or 'chasing the dragon' (locally known as 'Chinese method') was the much preferred method of use as in previous years. Very few injecting drug dependents were reported. However, the reported number of IV drug users was less than that of the previous year.

## 4. LAW ENFORCEMENT INDICATORS

### 4.1 Drug Seizures

In 2001 the Police Narcotics Bureau, local Police Stations, Customs and Narcotics Unit of the Department of Excise seized 102.216 kg of heroin. This is the highest ever amount of heroin seizure after its first appearance in Sri Lanka in 1981.

During the same period a total of 77,027.305 kg of cannabis was seized by the law enforcement agencies. A significant quantity of opium, 1.658 kg, was also seized during the year.

### 4.2 Drug Related Arrests

During the period under review 10,117 raids were conducted and 10,278 persons were arrested by the Police Narcotics Bureau, local police stations, and the Customs and Narcotics Unit of the Department of Excise on heroin-related offences. The number arrested for cannabis-related offences was 5,195.

## 5. HIV/AIDS

**Present status:** No drug-related HIV/AIDS cases were reported during the period under review. However, the current (end of 2nd quarter 2002) HIV/AIDS situation is shown below.

## DRUG ABUSE IN CHENNAI (MADRAS) CITY, INDIA

M.Suresh Kumar  
Punarjeevan Drug Treatment Centre  
Chennai (Madras), India

Cumulative HIV cases	425
Cumulative AIDS cases	134
Cumulative AIDS deaths (2001)	99
Male to female ratio of HIV cases	1.7:1
Number of HIV tests (2001)	209,870
HIV sero-positivity rate (2000)	0.022

**Estimates:** The estimate of National Working Group for adults (15-49 years) living with HIV/AIDS is 4,699-7,255 persons. The UNAIDS/WHO report on the global HIV/AIDS epidemic 2002 estimated that the country has 4,800 people living with HIV/AIDS.

### 6. CONCLUSION

The year 2001 could be a benchmark year in relation to drug abuse in Sri Lanka. As reported earlier the highest amount of heroin was seized during the year. The average purity of heroin at street level rose to an ever high of 52 percent. A recorded number of 57 injecting drug users were reported during the year. Informal reports confirmed at least two drug related HIV/AIDS cases for the first time. Also, the highest number of 10,000 drug dependents received treatment services during the year.

### ABSTRACT

*During the period of July 1999 to June 2002, the new admissions of drug dependents increased and this is mainly due to the establishment of two drug substitution programmes for opiate users established by two non-Governmental organizations at Madras. Alcohol, opiates (heroin, injectable buprenorphine) and cannabis are the primary drugs of abuse among the treatment seeking drug users. Polydrug use is common among drug users and cannabis is the commonly abused secondary drug of abuse. Drug users in the age group of 20 to 34 account for about a half of the total population in treatment. More than two thirds of the drug users in treatment have secondary level education. More than a half of the drug users are married. Injecting drug use is increasing among the opiate users. Transitions have occurred from chasing heroin to injecting heroin or other injectable opiates alone or in combination with other injectable pharmaceutical preparations. HIV prevalence among opiate users is the highest for any risk group at Madras. A fourth of drug users tested are HIV positive. Sharing of injection equipment as well as indirect sharing (sharing cookers, cotton, water) among IDUs is common. Apart from large seizures of cannabis and heroin, nine hundred and fifty-three drug related arrests have been made during the year 2000.*

### 1. MADRAS OR CHENNAI

The universe considered for this study is Madras (Chennai), a cosmopolitan City. It is the capital of the Tamil speaking region (Tamil Nadu) of the country-India and is situated on the northeast end of Tamil Nadu on the coast of Bay of Bengal. It stretches nearly 25.6 kms along the Bay coast and runs a semi-circular fashion and covers 172 square kilometres. The total population is about 6.5 millions.

### 2. DATA SOURCE

The current paper focuses on the data obtained from the major treatment centres offering inpatient treatment at Madras. The data is collected from both Government and non-Government centres and the data is collected biannually.

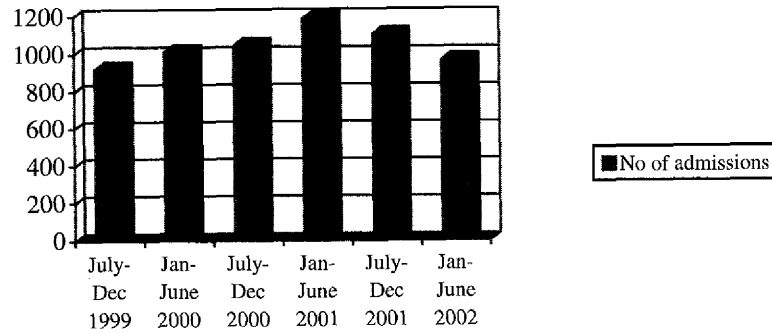
The reporting period is from July 1999 to June 2002.

### 3. TREATMENT INDICATORS

#### 3.1 Drug Abusers in Treatment

During the period July 1999 to June 2002 the treatment centres at Madras registered an increase in the number of admissions. The total admissions during July 1999 to Dec 1999 was 923 and peaked during Jan 2001 to June 2001 and July 2001 to Dec 2001 to 1187 and 1102 respectively. The increase could be attributed to the growing number of heroin dependents entering into substitution treatment programmes run by NGOs. The decrease in the first half-year of 2002 is due to the substitution treatment reducing the number of persons entering treatment due to costs and stopping of outside funds.

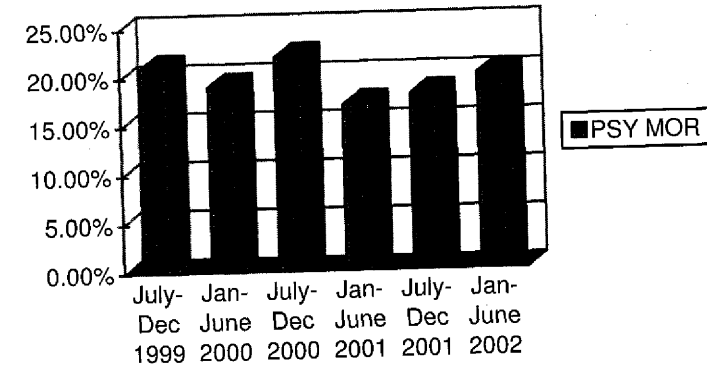
**Number of Admissions**



#### 3.2 Psychiatric Morbidity

DSM IV (American Psychiatric Association) based Axis I disorders were found among a fifth of the admissions at the Institute of Mental Health, Chennai. The common psychiatric diagnoses were drug induced psychosis and major depressive disorders. Axis II personality disorders were not included.

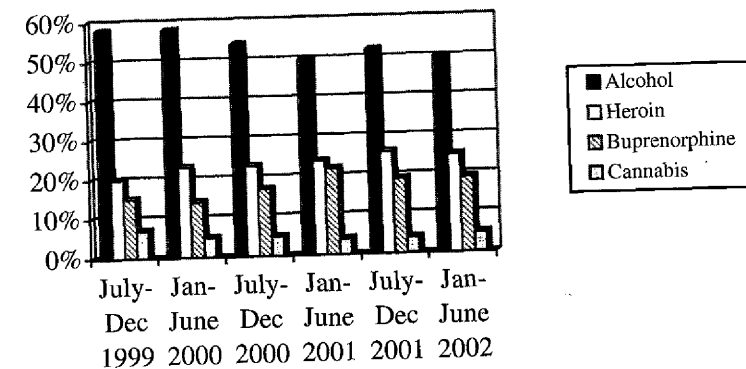
**Psychiatric Morbidity**



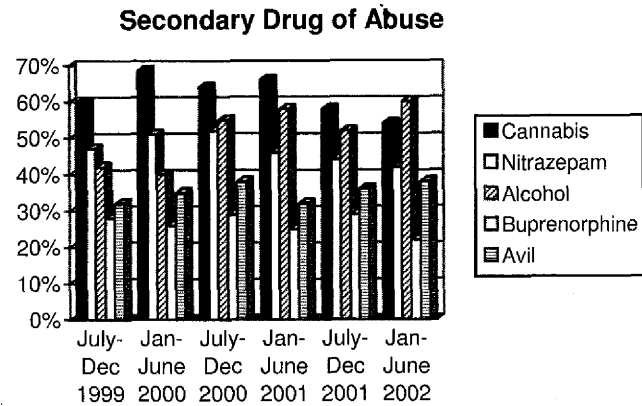
#### 3.3 Primary drug of abuse

Alcohol continues to be the primary drug abused in the persons seeking admission into the treatment facilities at Madras. Heroin ranks as the second primary drug and buprenorphine and cannabis are placed third and fourth respectively. Over time, the heroin and buprenorphine admissions increased and the total number of alcohol and cannabis related admissions remained the same.

**Primary Drug of Abuse**



### 3.4 Poly Drug Users

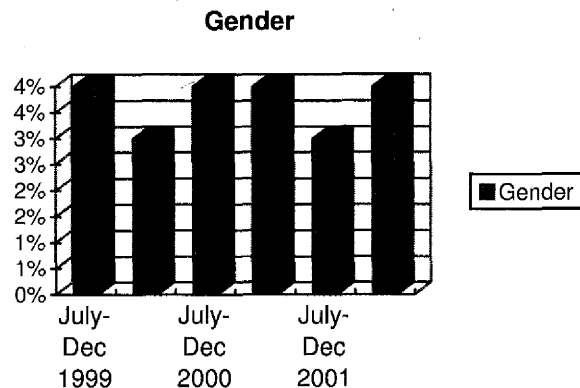


Poly drug use is relatively common and cannabis, alcohol, nitrazepam, avil and buprenorphine were the common secondary drugs of abuse. Alcohol use is escalating among injecting opiate users. Most opiate users are poly drug users and combinations and cocktails of drugs like Diazepam (Calmpose), Avil and Buprenorphine (Tidigesic) – popularly referred, as CAT is common.

### 3.5 Socio-demographic Characteristics

#### 3.5.1 Gender

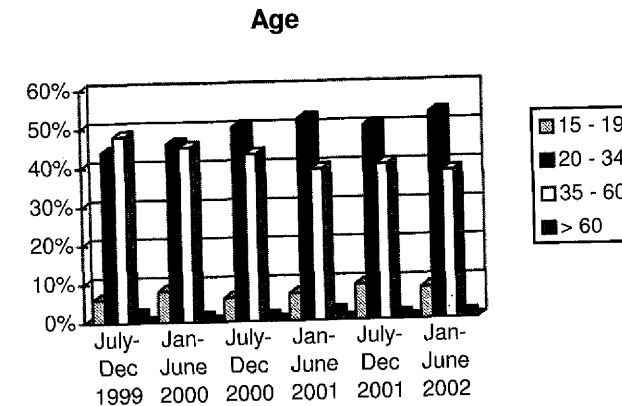
The number of women abusers in treatment facilities at Madras continues to be low.



The total number of women in treatment in the treatment facilities is low as they serve primarily male drug/alcohol users. There are no specialized treatment centres for women at Chennai.

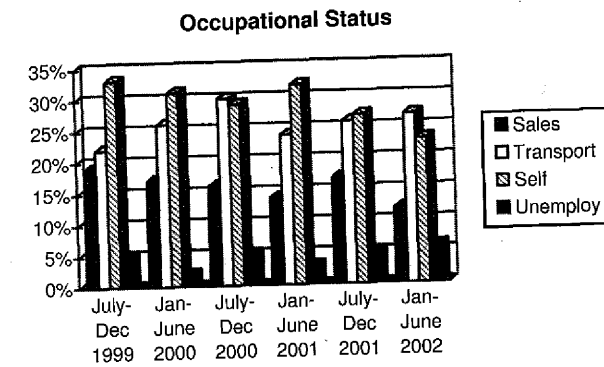
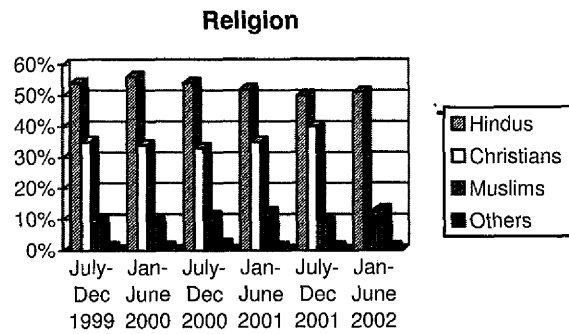
#### 3.5.2 Age

Most of the alcohol users are in the age range of 31-50 and a large proportion of other than alcohol users are in the age range of 18-30 years. About two-thirds of all drug/alcohol users in treatment are below the age of 40 years and this trend has been consistent over time. Drug users in the age group of 20-34 account for about a half of all the drug users in treatment.



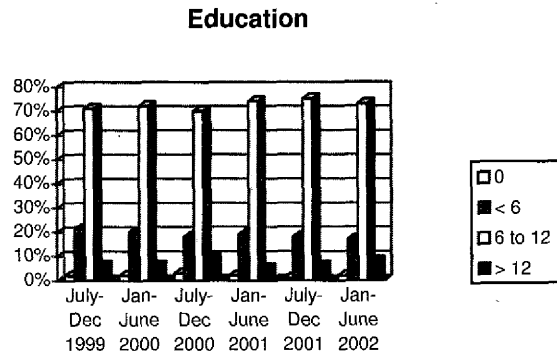
#### 3.5.3 Religion

As observed in the previous years, the proportion of Muslims in treatment seeking population is low and Christians high, compared to the general population demographics. Since a Christian NGO is offering drug treatment, this may be attracting Christian drug users in treatment.



### 3.5.4 Education

More than three-fourths of alcohol/drug users in treatment have secondary school level education. The proportion of illiterates and collegiate level educated continues to be low among the drug users in treatment. Since the private clinics are not included in treatment the collegiate level educated are less in this sample.

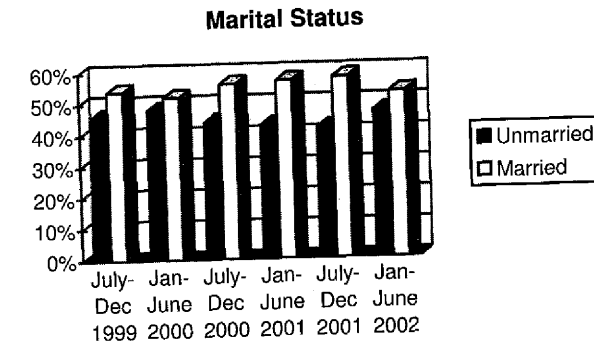


### 3.5.5 Occupational Status

The proportion of drug users who are unemployed are low and most of the drug/alcohol users in treatment are employed gainfully in some jobs. The treatment seekers were mostly from transport workers, salesmen and self employed. More than a fourth of the drug users in treatment are from transportation related jobs (auto driver, public transportation drivers, truck drivers). The other frequent job categories are: fishermen and casual labourers.

### 3.5.6 Marital Status

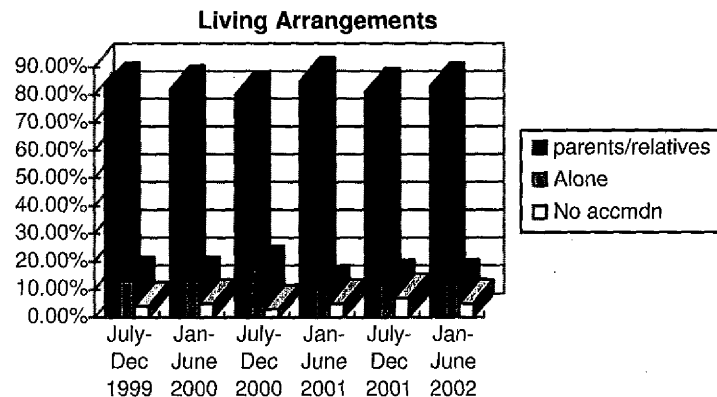
About a half of the alcohol/drug users in treatment are married. Most of the alcohol abusers are married.



Since a significant proportion of the drug/alcohol users in treatment are married, it is important to include them in treatment programmes.

### 3.5.7 Living Arrangements

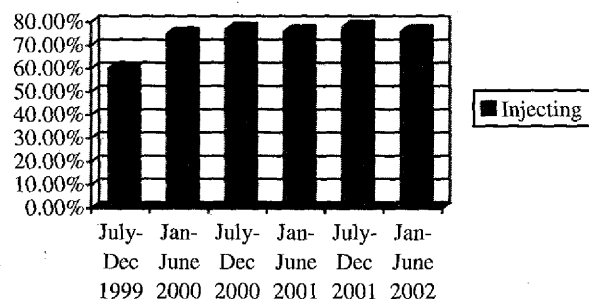
More than three fourths of the alcohol/drug abusers in treatment live with parents, spouse or a close relative signifying adequate social support.



#### 4. ROUTE OF ADMINISTRATION

Most of the opiate users inject drugs and the injectable preparations used include the following: heroin, buprenorphine, diazepam, chlorpheneramine maleate (Avil), promethazine (Phenargan) and pentazocine (Fortwin). Use of cocktails was very common and common cocktail referred to as "CAT" contains Calmpose (Diazepam), Avil and Tidigesic (Buprenorphine). Easy availability of pharmaceuticals, escalating cost of heroin and growing norms towards injecting has contributed to the shift from non-injecting to injecting.

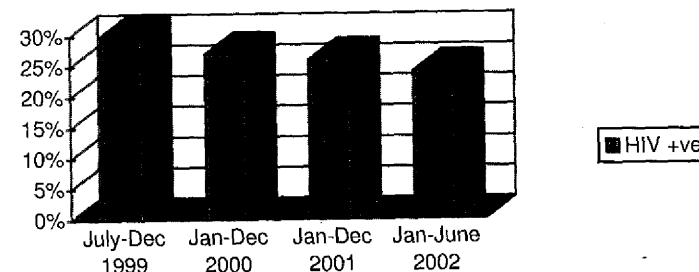
**Primary Route of Administration Among Other than Primary Alcohol Users**



#### 5. HIV and AIDS

Sharing is common among the injecting drug users. HIV antibody testing is being done for all the consenting injecting drug users with pre and post-test counselling. During the period July 1999 to June 2002 the HIV sero-positivity among injecting drug users was estimated between 20-25%.

**Seroprevalence of HIV**



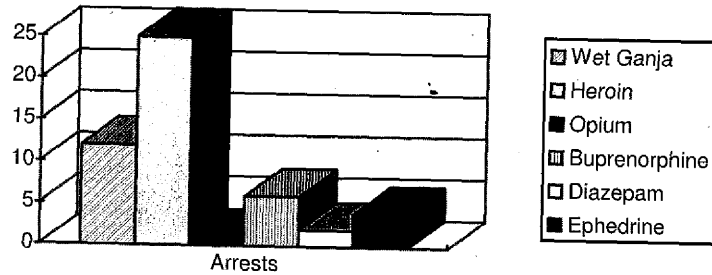
#### 6. LAW ENFORCEMENT INDICATORS

##### Drug Seizures, Police

<b>Dry Ganja</b>	<b>1100.727 kgs</b>
<b>Wet Ganja</b>	<b>51240 kgs</b>
<b>Heroin</b>	<b>14.36607 kgs</b>
<b>Opium</b>	<b>0.003 kgs</b>
<b>Buprenorphine</b>	<b>36 ampoules</b>
<b>Diazepam</b>	<b>1100 ampoules</b>
<b>Ephedrine</b>	<b>35.100 kgs</b>

There have been huge seizures of cannabis made during the year 2000. Also, seizure of heroin has also been significant. Interestingly, 35 kgs of ephedrine was seized.

Law Enforcement Indicator - Arrests



Arrests have been effected and most number of arrests were related to heroin followed by cannabis, injectable buprenorphine, ephedrine, injectable diazepam and opium.

## EXTENT AND NATURE OF ILLICIT DRUG USE IN CENTRAL ASIA

**Kamran Niaz**  
*Regional Epidemiology Adviser*  
**United Nations Office for Drug Control & Crime Prevention**  
**Ankara, Turkey**

### 1. INTRODUCTION

Central Asia comprises of former Soviet republics of Kyrgyzstan, Kazakhstan, Tajikistan, Turkmenistan, and Uzbekistan, which gained independence in 1991. Whereas the countries shared a common system of government, economics and social set up during the Soviet times as well as a common religion and history, there exists diversity in culture, climate, language, and the current economic, political and social development in each of the countries. For a comparison of some key demographic, health, and economic indicators for the countries see table 1.

Since the break up of the former Soviet Union the Central Asian States have been undergoing a difficult economic, social and political transition. No longer being integrated within the Soviet economy and having lost the subsidies from Moscow, the young states have been fighting with the severe consequences of the transition, such as budgetary deficits, high inflation, negative industrial growth and rising unemployment. Moreover, the nation-building process has been draining most of the resources, leaving little room for social intervention.

Also since the last one decade the Central Asian states have been affected by an increasing transit of drugs from neighboring Afghanistan on their way to the profitable Russian and Western European markets. Evidence from elsewhere in Asia has shown that when a country is on a trafficking route, a considerable potential exists for the development of local drug abuse problems. Until the middle of the 1990's the drug issue was perceived by the Central Asian states as a problem affecting other countries and the local authorities mainly relied on international assistance to address drug trafficking issues by law enforcement interceptions. Since 1995, when heroin started being processed within Afghanistan and shipped across Central Asia, the burgeoning local drug markets have brought a considerable change in the perceptions of drug problems in the regional countries prompting the states to address the issue of increasing drug problems among the local population as well as to combat drug trafficking within and across their territories.

## 2. NATIONAL ASSESSMENTS OF DRUG PROBLEMS IN CENTRAL ASIA

During 2000-1 UNDCP's regional office in Central Asia with the technical support from the Global Assessment Programme on Drug Abuse (GAP) implemented a regional project to assist the national counterparts in assessing the nature and extent of drug problems in each country and therefore develop evidence based policies and interventions to address growing illicit drug use in the region. The project also aimed at helping to set up a sustainable data collection and monitoring system at the national and regional levels.

### Methodology

The extensive national assessment studies conducted under the project utilized multi methods and data sources to build up a comprehensive picture of the nature and extent of problem drug use in each country. The data sources and methods used were,

- ✦ Analysis of existing data from treatment, health and law enforcement as part of an initial information needs and resource analysis was conducted with the aim of assessing the existing data bases and sources of information on drug abuse in the country and identify the needs for developing drug use information and monitoring system. The secondary data was also used as a proxy indicator for time series analysis of changing trends of drug use.
- ✦ Interviews with over 100 key informants e.g., doctors, NGO workers, law enforcement officials, local community leaders, teachers and ex- drug users were held in 5 urban and rural geographical locations in each country. The key informants were interviewed to present their perspective of the extent and nature of problem drug use in their area. These interviews with diverse occupational groups helped develop local and national profile of problem drug use in each country.
- ✦ Using snowball techniques, about 100 problem drug users were interviewed in the community settings in at least two locations in each country. The problem drug users were defined as persons who took drugs regularly and suffered from health and social consequences of drug use with drugs being the most significant element of their lifestyle.
- ✦ Interviews with drug users helped look at the current patterns and trends of drug use among active drug users and assess the health and social consequences of drug use from the respondents' perspective.

- ✦ Additional in-depth interviews were done with about 200 injecting drug users in the same locations, on their initiation of injecting drug use, current patterns, injection sharing and sexual risk behaviors.
- ✦ Interviews were also held with around 60 drug users in each country in the prison settings with the objective of assessing the drug use situation in the prisons and if the patterns of drug use in prisons differed in any way from the one in the community settings.
- ✦ As a final outcome of these studies prevalence of problem drug use in each country was estimated using Multiplier techniques. During the interviews with drug users they were asked questions to determine the proportion of interviewees, and through nominations proportion of their friends who had been in treatment or registered in the past 12 months. Based on these information proportional multipliers were calculated and applied to treatment and registered data for the year 2000 initially for the two main cities where interviews with drug users were conducted. Later a national level multiplier was worked out and national estimates of problem drug use were calculated. For prevalence estimates for each country see **Table 2**.

## 3. CURRENT PATTERNS AND TRENDS IN DRUG USE

Using information from the different sources and methodologies used in the assessment studies, a brief description of the current patterns and trends of drug use is given in the sections below for each country.

### 3.1 Kazakhstan

The prevalence estimate of problem drug users in Kazakhstan ranges between 1110 and 1255 per 100,000 of the population (see **table 2**). However, it has reportedly the highest rate of new drug users registered among all countries in the region. Whereas the rate of newly registered drug users was 5 per 100,000 of population in 1992 this has consistently increased, with a sharp increase in the year 1996, and was reported as 77 per 100,000 of population in 2000 (see **figure 1**). The rate of drug users treated each year has been increasing in a similar fashion from 3.88 in 1992 to 37.77 per 100,000 of population in 2000 (see **figure 2** for a comparison among the four countries). Heroin is ranked as the first drug of abuse, followed up cannabis and opium. Almost two third of the drug users registered in 2000 have been registered for opiates. In terms of age and gender, more than 20% of drug users are estimated to be under the age of 19 and about one third of drug users are estimated to be female. According to UNAIDS' sources, there has been a rapid and significant growth of HIV-infected persons in the country; with about 95% of HIV-infected persons are injecting drug users (see **table 3** for HIV/AIDS numbers in Central Asia). According to sources from 50% to 80% of all

drug injectors are also infected with either Hepatitis B or C viruses. While the opium seizures in the country have recorded a decline, there has been a sharp increase in the seizures of heroin (262 Kg. in 2000) and steady increase in cannabis (15,465 kg in 2000) seizures since 1997 (see **figure 3** for Drug Seizures in Kazakhstan). Similarly, the rate of drug related crimes, the highest in the region, has also increased more than three folds since 1993 where it was 45 per 100,000 in 1993 and 145 per 100,000 of population in 2000.

### 3.2 Kyrgyzstan

The estimated number of problem drug users in Kyrgyzstan ranges from 80,000 to 100,000 (see **table 2**) and is reportedly the highest of all the Central Asian countries. The rate of drug users registered for the first time has shown a five times increase since 1992 to 15 per 100,000 population in 2000, whereas the rate of drug users treated per 100,000 of population has increase from 2.6 to 7.7 in 2000 (see **figure 1 and 2** respectively). In 1992 opiate users accounted for 10 percent of the drug users registered while in 2000, these account for more than 80 percent of newly registered drug users. In 2000, more than 80 percent of drug users registered were for heroin and more than 65 percent are injecting drugs. Whereas the percentage of women among registered drug users is less than 5 percent, more than half of the drug users were estimated to be under the age of 35 and 15 percent being under 19 years. Among the reported HIV infection cases in the country 60 – 80 percent of the infection cases are among injecting drug users (see **table 3**). According to court data, the number of drug-related crimes has increased by 3.5 times over the decade. Not only the absolute number of such crimes increased, but also their share in the total number of criminal cases in the country. In 1990 the percent of drug related crimes amounted to 8 percent which in 2000 had risen to 15 percent. Drug-related crimes has thus become a significant component of overall criminality and has brought an additional burden for law enforcement agencies and, indirectly, for the whole society. While the prices of heroin (US\$ 10,500 per kg) and opium (US\$2000 per kg) have remained steady in the past few years there has been a sharp increase in the total number of opiates especially heroin seized in the country (see **figures 4 and 5**).

### 3.3 Tajikistan

The prevalence of problem drug users in Tajikistan is estimated to range from 734 to 897 per 100,000 of population (see **table 2**). The reported rate of newly registered drug users has increased from 2 per 100,000 of population in 1992 to 28 per 100,000 of population. This rate of increase in Tajikistan is the second highest in the region (see **figure 1** for comparison of rates among countries). The increase in the rates of drug users treated in 2000 has been 4 times the rate in 1992 (see **figure 2**). Heroin users account for two thirds of the registered drug users in 2000 with one third of these being

injecting drug users. The majority of drug users (more than 50 percent) are under the age of 30 years, whereas one quarter of the drug users are under 24 years of age. Women account for only 6 percent of the total registered drug users, however an alarming 120 times increase has been noted in the rate of newly registered women drug users in 2000. According to the statistical data provided by the Ministry of Justice the number of drug-related crimes has increased by more than 2 times in the period of 1996-2000. Not only have the absolute numbers of such crimes increased, but also their share in the total number of criminal cases in the country. In 1996 the percent of drug related crimes amounted to 13 percent while in 2000 this rose to 21 percent. Since 1998 the seizures of opiates (heroin and opium) have increased whereas the seizures of cannabis have recorded a decline. Conversely, the street prices of heroin and opium have been on decline during the same period with US\$ 4,000 per kilogram for heroin and US\$ 18 reported for opium in 2000 (see **figures 6 and 7**). The reported rate of drug related offences have remained stable since 1993.

### 3.4 Uzbekistan

The estimate prevalence of problem drug users in Uzbekistan ranges from 267 – 367 per 100,000 of population (see **Table 2**). With a seven times increase since 1992 the rate of new drug users registered is reported as 22 per 100,000 population in 2000 (**figure 1**). The rate of drug users treated per 100,000 of population has also shown a sharp increase since 1998 – from 1992 to 1998 this rate was around 2 per 100,000 of population, whereas this increased in 2000 to more than 24 per 100,000 of population treated for drug problems (see **figure 2**). Increasing number of these drug users are using opiates and especially heroin with injecting drug use reported as the method of use for up 60 percent of these drug users. Injecting drug use is also reported as the predominant mode of transmission for HIV infection in the country (see **table 3**). More than half of drug users are reportedly under the age of 30 years, one quarter being under 25 years of age. Males constitute the majority (80 percent) of drug users. While the drug seizures for cannabis have been on decline, the reported seizures of opiates especially of heroin have increased tremendously since 1997 (see **figure 8**). The wholesale prices of heroin and opium have also decreased considerably since 1998 (see **figure 9**). The rate of drug related crimes reported in the country has remained stable in the past eight years.

## 4. CONCLUSIONS

All the Central Asian countries are experiencing a rapidly increasing drug use problem in their countries. The main transition has been from traditional use of cannabis and opium to increasing use of Heroin and injecting drug use especially among the younger age groups. The majority of drug users are reported to be male, nevertheless a considerable proportion of drug users are also female. The situation is compounded by the lack of resources available within the countries to address health care and social

needs of the population. Therefore there is a strong need to build capacity among professionals to address the needs of this younger age group and females for treatment and prevention of drug use.

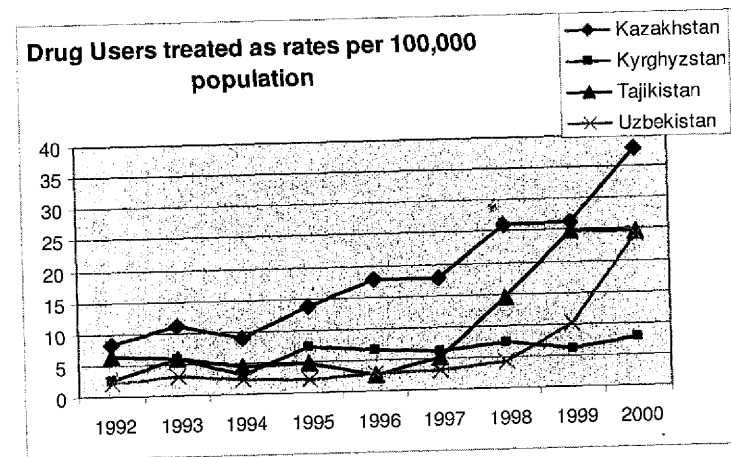
While a system to report drug use in each of the country exists there are some methodological issues that need to be addressed. One issue is of anonymity of drug users as all the information of registered drug users has to be reported to the police and therefore drug users feel hesitant in seeking help from the state-run narcology centers. The second major issue is reporting of the aggregate data. Depending upon the country, the aggregate data is not presented by gender, age, type of drug use and/or preferred method of drug use. Having this useful information would no doubt enable the policy makers and service providers monitor the patterns and trends of illicit drug use in their areas and design interventions accordingly. Finally, there is the issue of data management – its entry, analysis and sharing of information among stake holders in each of the country. The countries in the region have lacked the capacities to address these issues especially with regard to data analysis and its dissemination. The Global Assessment Programme on Drug Abuse aims at helping the member countries in the region to adequately address these shortcomings.

	Kazakhstan	Kyrgyzstan	Tajikistan	Turkmenistan	Uzbekistan
<b>Size</b> (thousand square kilometers)	2717	198.5	143.1	488.1	447.4
<b>Population</b> (million)	15.4	4.7	6.2	4.8	24.4
<b>Population density</b> (per square km)	5.9	24.2	42.8	9.9	57.1
<b>Rural Population</b> (as percentage of total)	44	65	73	55	63
<b>Annual population growth rate</b>	-1	1	1.7	1.3	1.8
<b>Life expectancy at birth</b>	65	67	68	66	70
<b>GDP per capita (US\$)</b> <b>1988</b>	2310	1240	910	1490	1000
<b>1999</b>	1290	300	290	660	720
<b>UNDP HDI Rank</b>	73	97	110	100	106
World Development Indicators Database. 2000 Washington: World Bank: 2000					

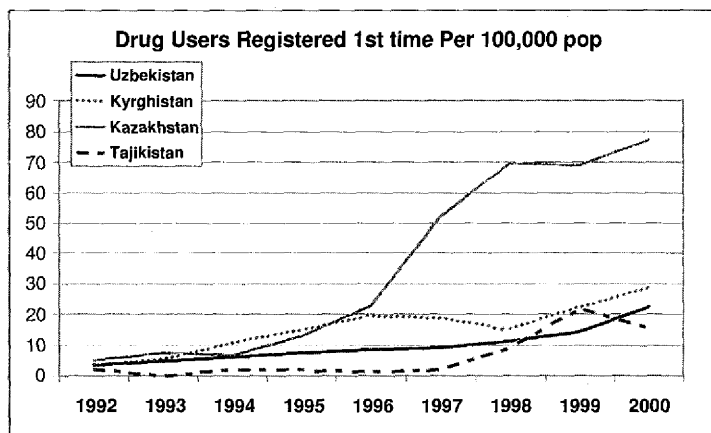
**Table 1: Health and Social Indicators**

	Estimated number	Population	Rate per 100,000 population
<b>Kazakhstan</b>	165,000-186,000	14,869,021	1,110-1,255
<b>Kyrgyzstan</b>	80,000-100,000	4,867,481	1,644-2,054
<b>Tajikistan</b>	45,000 - 55,000	6,131,000	734 - 897
<b>Uzbekistan</b>	65,000-91,000	24,813,109	262-367

**Table 2: Prevalence estimates for Central Asian countries**



**Figure 2: Drug users treated**



**Figure 1: Drug Users Registered 1st time per 100,000 population**

Country	Year of first HIV case	Cumulative HIV cases to date	Cumulative AIDS cases to date	Predominant mode of transmission
Kazakhstan	1989	1300	34	IDU
Kyrgyzstan	1987	53	1	IDU/ heterosexual
Tajikistan	1991	11		Heterosexual
Turkmenistan	1997	4		Heterosexual
Uzbekistan	1992	228	10	

**Table 3: HIV/AIDS IN Central Asia**

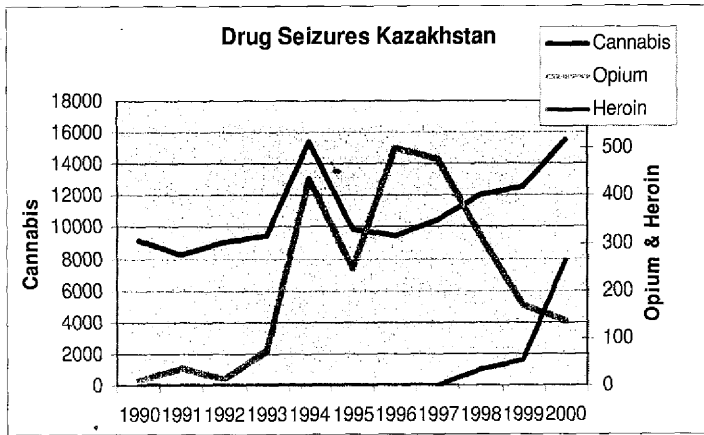


Figure 3: Drug Seizures in Kazakhstan

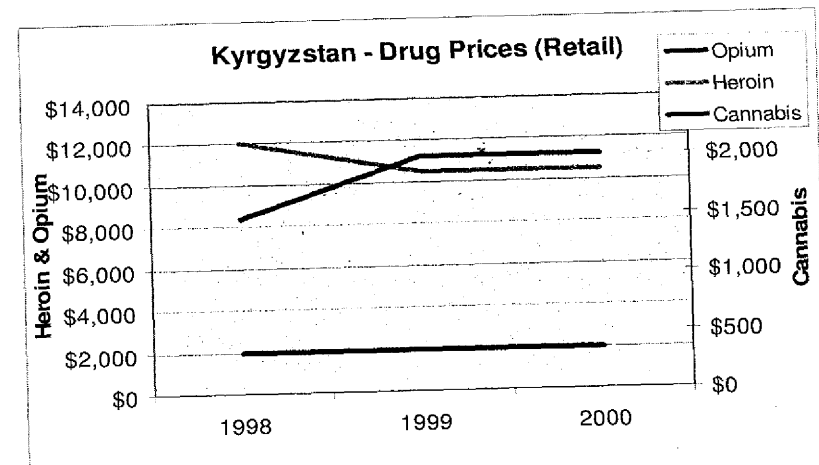


Figure 5: Retail prices of drugs in Kyrgyzstan

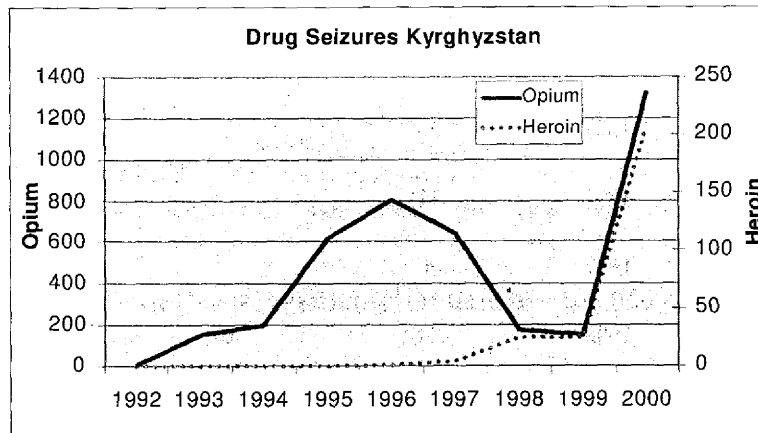


Figure 4: Drug Seizures in Kyrgyzstan (In Kgs.)

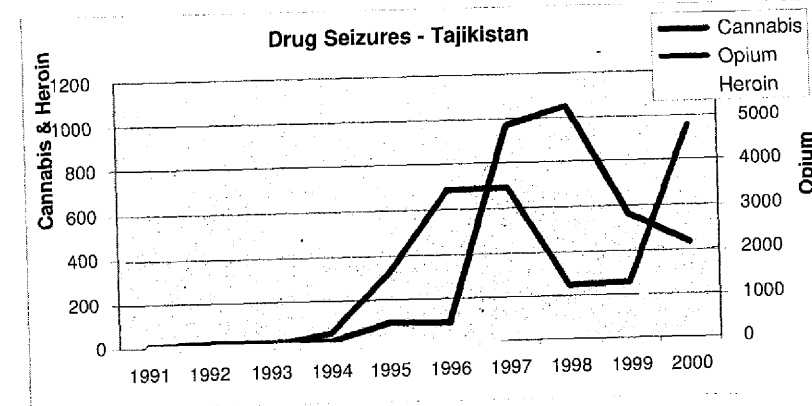


Figure 6: Drug Seizures in Tajikistan (In Kgs.)

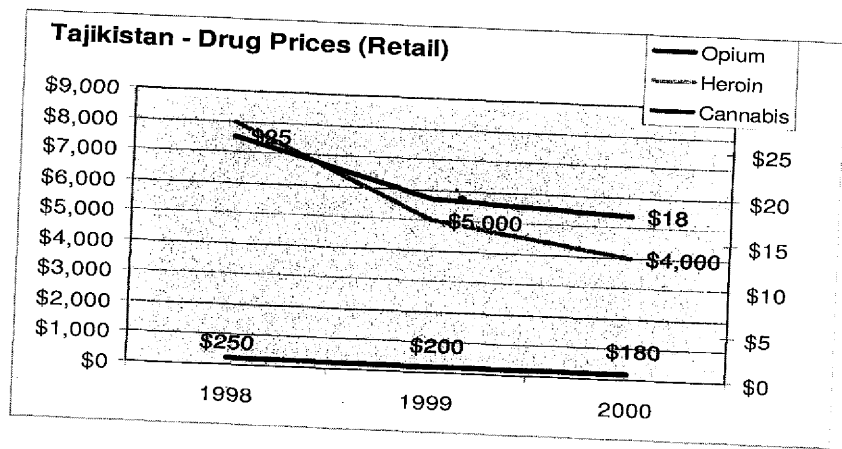


Figure 7: Retail prices of drugs in US \$ - Tajikistan

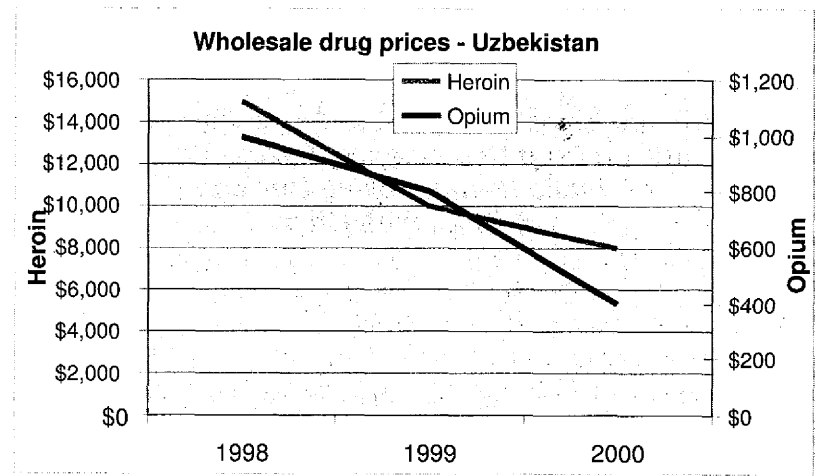


Figure 9: Wholesale prices of drugs - Uzbekistan

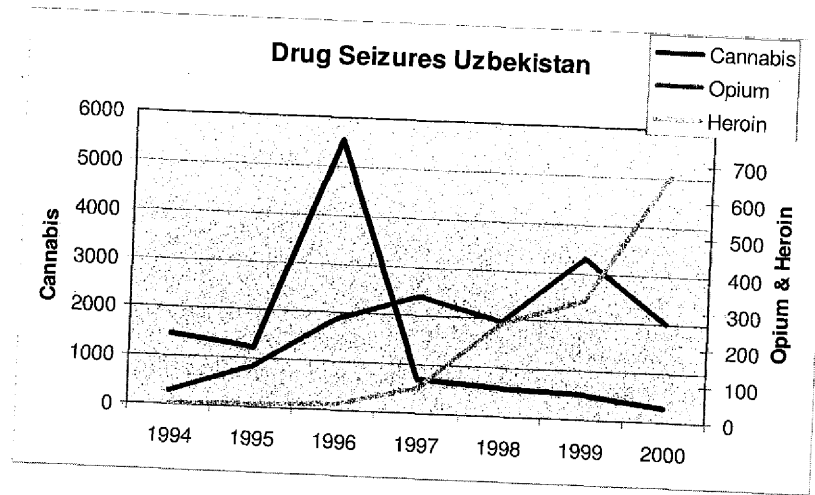


Figure 8: Drug Seizures in Uzbekistan (in Kgs.)

# CHARACTERISTICS AND CONSEQUENCES OF AMPHETAMINE-TYPE STIMULANTS ABUSE IN CHINA

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## ABSTRACT

**Aim.** To survey characteristics and consequences of amphetamine-type stimulants (ATS) abuse in 15 areas from seven provinces, one autonomous region and two municipalities in nationwide China from February 2001 to January 2002. **Design.** A structured questionnaire that includes the drug history, patterns, reasons and consequences of using ATS was used in this study. All interviews and assessments were conducted by trained clinicians. **Setting.** All surveys were carried out in drug dependent treatment units or treatment centres. **Participants.** A total of 1404 urine testing positive subjects participated in this study. **Findings.** The results suggested that most ATS users (65.2 percent) were male, did not attend college and typically were unemployed or self-employed. Subjects' mean age was 28.2±6.3 years. The categories of abused ATS included MDMA (ecstasy), methamphetamine (ice) and ephedrine. The main reason for initial ATS use was 'satisfaction of curiosity' and the main reason for continued use was 'enjoyment of effects'. 'Chasing the dragon' and swallowing were the two most common initial routes of administration, and the injecting route was increasingly popular after the initial phase. The main location of ATS use was at a recreational setting. Irritability, depression, hallucinations, mania, aggression and delusions have been found to be common ATS intoxication symptoms among some subjects. **Conclusions.** ATS abuse produced multiple social, public health and individual consequences. Comprehensive control programmes at the primary, secondary and tertiary levels such as prevention and effective intervention should be implemented immediately.

## INTRODUCTION

Epidemiological data show that the increase of ATS abuse is challenging worldwide, not only in developed countries, but also in many developing countries, particularly among young people. According to the data published by the United Nations International Drug Control Programme (UNDCP) in 1999, 30 million people worldwide abused amphetamine-type stimulants (ATS). High prevalence rates of ATS use were found in Western Europe, Australia and North America.<sup>1-2</sup> The abuse of MDMA and methamphetamine is also spreading quickly across the regions of east and Southeast Asia. The Golden Triangle, one of the largest sources of drugs in the world,

engages not only in traditional opiate, but also in processing ATS now. In some countries of east and Southeast Asia, illicit manufacture trafficking and abuse of ATS appears to have become matters of greater concern than illicit activities related to opiates. A number of countries in the region have reported that the abuse of opiates has declined while the abuse of ATS has increased.<sup>3-9</sup>

Heroin continues to be the most commonly abused drug in China. However, polydrug abuse is increasing among heroin addicts in recent years. The patterns of polydrug abuse are a combination of heroin with sedatives/hypnotics (such as benzodiazepines), or narcotics drugs (such as pethidine, dihydroetorphine, which is a shortacting and high abuse potential narcotic), or other kinds of prescription drugs (such as tramadol).<sup>10-12</sup> Besides the above-mentioned drugs, 'new' types of drugs including MDMA and methamphetamine have penetrated China through various channels in recent years.<sup>13</sup> For example, after the appearance of MDMA in 1997, the drug is found in most of the provinces, autonomous regions and municipalities in China. The aim of this survey is to study the characteristics and consequences of ATS abuse.

## METHOD

Based on the result of urine testing, a nationwide survey on ATS abuse was carried out in 14 areas from seven provinces, one autonomous region and two municipalities from February 2001 to January 2002. In order to check the validity of the research instrument concerning ATS use, a pilot study of ATS users was conducted prior to this study.<sup>14</sup> A revised version of the structured questionnaire was used in this study.

All subjects who were tested positive to MDMA and methamphetamine provided basic demographic data and were administered the structured questionnaire that included the drug history, patterns, reasons and consequences with using ATS. The adverse effects of ATS were assessed using the ATS intoxication questionnaire (AIQ) which composed of 23 symptoms/signs/behaviours. The withdrawal of ATS was assessed using the ATS withdrawal questionnaire (AWQ) which composed of eight major symptoms/signs. The interview was structured to obtain the data on current (prior to the study) and past ATS use in the subject's life.

All interviews and assessments were conducted by trained clinicians (psychiatrists or medical doctors). They were instructed to ensure that all the answers/results as well as the identities of the subjects would remain strictly confidential. All subjects' answers were required to be clear. Unanswered questions were allowed in case the subjects forgot the answers or were uncertain. Original data were double-input and data were analysed by EPI-INFO.<sup>15</sup>

## RESULTS

A total of 1404 urine testing positive subjects participated in this survey. They were from Shanghai (a municipality located east of China), Wuhan (the capital city of Hubei province), Kunming (the capital city of Yunnan province), Xishuangbanna and Simao (two counties located on the south border area of Yunnan province), Nanning (the capital city of Guangxi Autonomous Region), Guangzhou (the capital city of Guangdong province), Shenzhen (a city of Guangdong province near Hongkong), Zhuhai (a city of Guangdong province near Macao), Hangzhou (the capital city of Zhejiang province), Wenzhou (a southeast coastal city of Zhejiang province), Chongqing (a municipality located southwest of China), Haerbin (the capital city of Heilongjiang province), Xian (the capital city of Shanxi province) and Taicang (a city of Jiangsu province).

Demographic information for 1404 subjects is provided in **Table 1**.

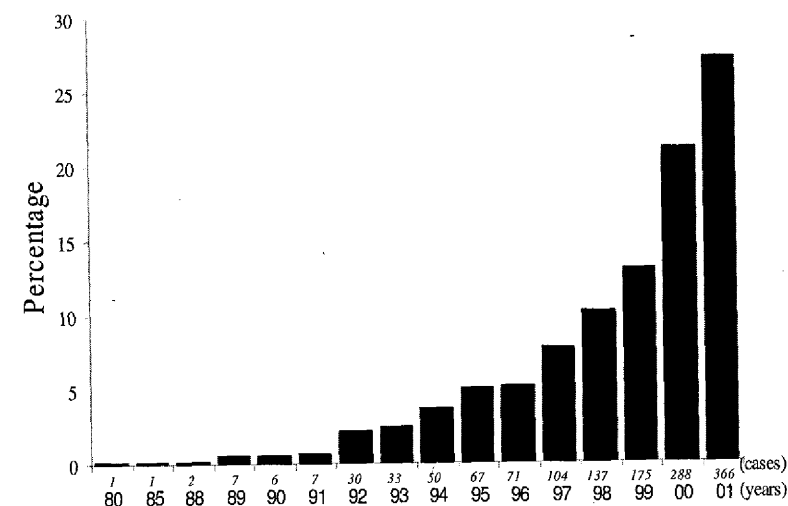
**Table 1: Demographic Characteristics of ATS Users**

Items	No. of cases	Percentage
<u>Age (years)* (Respondents=1404)</u>		
≤20	146	10.4
21-30	822	58.5
31-40	381	27.1
41-50	54	3.8
≥51	1	0.07
<u>Sex (Respondents=1404)</u>		
Male	916	65.2
Female	488	34.8
<u>Ethnic (Respondents=1404)</u>		
Han	1284	91.5
Other	120	8.5
<u>Occupational status (Respondents=1404)</u>		
Blue-collar workers	144	10.3
Agro-based workers (Farmers)	88	6.3
Self-employed	255	18.2
Managers/Administrators	106	7.5
Service industry	83	5.9
Unemployed	541	38.5
Student	10	0.7
Drivers/Transport	58	4.1
Housewife	10	0.7
Others	109	7.8
<u>Marital status (Respondents=1401)</u>		
Single, never married	779	55.6
Married	304	21.7
Divorced	167	11.9

Separated	30	2.1
Widowed	6	0.4
Cohabiting	115	8.2
<u>Educational attainment (Respondents=1401)</u>		
1-6 years	173	12.3
7-9 years	775	55.3
10-12 years	385	27.5
>12 years	68	4.9

\*mean age was 28.2±6.3 years

Most abused ATS were MDMA or 'ecstasy' (known in China by the street name of 'shake-head pill') and others included 'ice' (methamphetamine), ephedrine as well as alcohol (mixed with ATS). According to the report of 1345 respondents in the question of 'the time when first used ATS', 17 cases (1.3 percent) first used ATS before 1990, 187 cases (13.9 percent) first used ATS between 1991 to 1995, 775 (57.6 percent) consumed their first ATS between 1996 to 2000, and 366 cases (27.2 percent) used ATS in 2001. Detailed information of the time of first ATS use is provided in **Figure 1**.



**Figure 1. Detailed information of first time usage of ATS (N=1345)**

According to the report of 1329 respondents in the question of 'frequency of ATS abuse' showed that 286 cases (21.5 percent) used ATS 1-2 times, 133 cases (10.0 percent) used ATS 3-5 times, 108 cases (8.1 percent) used ATS 6-10 times, 190 cases (14.3 percent) used ATS 11-49 times, 178 cases (13.4 percent) used ATS 50-99 times, 142 cases (10.7 percent) used ATS 100-199 times and 292 cases (22.0 percent) used ATS more than 200 times. There were several different routes of ATS abuse. 'Chasing the dragon' and swallowing were the two most common initial routes of administration,

but injecting was increasing significantly after the initial phase. Table 2 shows the changes of ATS administration between the phases of initial and current use prior to the survey.

**Table 2: Comparison between the phases of initial and current route of administration**

Route of administration	Initial phase		Current Phase		Increasing range between current and initial use
	N cases	Percentage	N cases	Percentage	
	"Chasing dragon"	372	27.9	229	
Swallowing	384	28.8	305	23.1	-5.7
Injected	42	3.1	227	17.2	14.1
Snorting	96	7.2	96	7.3	0.1
Mixed in cigarette	57	4.3	22	1.7	-2.6
Mixed in alcohol	323	24.2	383	29.0	4.8
Mixed with other drugs	60	4.5	57	4.3	-0.2
	N=1334		N=1319		

The question of main sources of ATS purchased (multiple-choice answer) showed that 55.0 percent (772/1404) was obtained from public entertainment places, 42.1 percent (591/1404) from the black market, and 16.4 percent (230/1404) was obtained from friends and acquaintances.

According to the report of 1392 respondents in the question of 'common places of ATS abuse', most subjects (66.5 percent) abused ATS at public entertainment places, but evidence from this survey indicated that ATS abuse was spreading beyond the club scene. Places where ATS abuse commonly occur are provided in Table 3.

**Table 3: Common places of ATS abuse (multiple-choice answer) (respondents=1392)**

Places of ATS abuse	No. of cases	Percentage
At home	436	31.3
At school	5	0.4
At workplace	52	3.7
At hotel	77	5.5
At public entertainment places	925	66.5
At drive	9	0.6
At other places	76	5.5

Tablets were the most common form of ATS available. The mean price of a tablet in the black market was 98.6±56.1 Chinese RMB Yuan (equals 11.5 US dollars).

The doses of ATS use differ from 1/4 tablet once to 4 tablets once. Chronic ATS users reported that they had to increase dosage in order to obtain the effect of the drug. The administration of initial dose and current dose are provided in Table 4.

**Table 4: The doses of the phases of initial and current use**

Initial		Current	
A single dose (tablet)	Frequency (times/day)	A single dose (tablet)	Frequency (times/day)
1.55±1.15	1.80±1.48	2.38±2.25	2.51±2.31

The main reason for the initial trying ATS was 'curiosity' and the main reason for continued use was 'enjoyment of effect'. The main reasons for initial and continued use are provided in Table 5.

**Table 5: Reasons given for initial trying and continued use of ATS**

Initial trying/experience (N=1311)	N cases	%	Continued use (N=1287)	N cases	%
Satisfaction of curiosity	704	53.7	Avoidance of physical discomfort of withdrawal	119	9.2
Acceptance by others	216	16.5	Relief from fatigue or to stay awake	24	1.9
Peer pressure	146	11.1	Peer pressure	247	19.2
Relief from fatigue or to stay awake	92	7.0	Enjoyment of effects	580	45.1

ATS as substitute for other drugs	56	4.3	Relaxation	120	9.3
To take other drugs in combination with ATS (to increase novel experience)	6	0.5	To take other drugs in combination with ATS	29	2.3
To have a belief that the ATS is able to increase sexual activity	17	1.3	To increase sexual activity under the influence of ATS	21	1.6
Weight loss as anorectics	33	2.5	Weight loss as anorectics	67	5.2
Other reasons	41	3.1	Other reasons	80	6.2

Acute intoxication of ATS was measured using the ATS intoxication questionnaire (AIQ). All subjects were asked to indicate signs/symptoms/behaviours of acute intoxication experienced. The signs/symptoms/behaviours of 23 items of AIQ are provided in **Table 6**.

**Table 6: Experienced signs, symptoms or behaviours of ATS intoxication**

Signs/symptoms	Respondents	Never experienced		Have experienced	
		N cases	%	N cases	%
Agitation	1329	280	11.1	1049	78.9
Dry mouth	1327	323	24.3	1004	75.7
Mechanical hyper-activities	1313	352	26.8	961	73.2
Increased heart rate	1324	361	27.3	963	72.7
Increased sweat	1317	382	29.0	935	71.0
Bouts of insomnia	1332	409	30.7	923	69.3
Decreased appetite	1338	452	33.8	886	66.2
Nausea/vomiting	1333	594	44.6	739	55.4
Headache	1315	598	45.5	717	54.5
Visual hallucinating	1312	600	45.7	712	54.3
Irritability	1318	623	47.3	695	52.7
Auditory hallucinating	1308	622	47.6	686	52.4
Restlessness	1327	650	49.0	677	51.0
Arrhythmia	1309	678	51.8	631	48.2
Abdominal cramps	1302	720	55.3	582	44.7
Mania	1308	743	56.8	565	43.2
Delusions	1299	785	60.4	514	39.6
Tremors	1290	797	61.8	493	38.2
Teeth grinding	1258	791	62.9	467	37.1
Aggressive behaviour	1298	980	75.5	318	24.5
Delirium	1297	1000	77.1	297	22.9
Coma	1305	1040	79.7	265	20.3
Sexual violence	1345	1273	94.6	72	5.4

The withdrawal symptoms according to the 8 times ATS withdrawal questionnaire (AWQ) is provided in **Table 7**.

**Table 7: AST withdrawal symptoms**

Symptoms	Respondents	Never experienced		Have experienced	
		N cases	%	N cases	%
Fatigue/tiredness	1348	530	39.3	818	60.7
Drug craving	1346	577	42.9	769	57.1
Drowsiness	1335	600	44.9	735	55.1
Depression	1311	717	54.7	594	45.3
Hypersomnolence	1326	735	55.4	591	44.6
Difficulty in working/studying	1327	775	58.4	552	41.6
Hunger	1319	833	63.2	486	36.8
Suicide ideation	1307	1029	78.7	278	21.3

## DISCUSSION

ATS abuse is a relatively new problem in China. The findings of the study provided a profile of the characteristics and consequences of ATS abuse.

Historically, China has suffered from the scourge of opium for almost 200 years; however, only one case of stimulant abuse was discovered before the 1980s. In the early 50s, an event of manufacturing and abuse of 'anti-fatigue pills' (analysis showed that the main component of this pill was methamphetamine) was discovered in a Chongqing factory, which is a city located in southwest China. The pharmaceutical factory was then ordered to stop producing the pills immediately and drug use was controlled.<sup>17</sup> Since then, the Chinese government has exercised strict control over amphetamines and other psychotropic substances. Until the end of the 1980s, there was no report of illegal amphetamine manufacturing. However, criminal activities involving smuggling, manufacturing, and trafficking of ATS have become increasingly rampant in the last decade worldwide, both in developed and developing countries.<sup>1-9</sup> Influenced by this situation, ATS including MDMA and methamphetamine abuse emerged in China.

At present, China has a low prevalence rate of ATS use. ATS abuse is principally an urban phenomenon, confined to large cities and the southeast coastal areas in the country. The demographic data of ATS abusers in this survey indicated that approximately two-thirds of users were male, 968 cases or 68.9 percent were under 30 years of age. Most users were unemployed and self-employed, with middle school education. Most farmers in this survey were from the borders of Xishuangbanna and Simao, which are two counties located on south border of Yunnan province. The

chemical analysis of drugs sold as 'shake-head pill' (MDMA) in the illegal market showed that there were a number of other substances including methamphetamine, ephedrine and antihistamines.

The results indicated that most subjects used ATS for recreational purposes. However, we also noted that the subjects appeared to have a number of different forms of ATS use, ranging from the phases of experimentation, occasional use (once a week or less) to the serious form of habitual or regular use. For instance, some individuals have turned to daily use as described for heroin from just trying or recreational use. The frequency of ATS use showed that there were 292 cases or 22.0 percent of subjects using ATS more than 200 times. This suggests that some of the subjects had become chronic ATS abusers.

The reasons of ATS abuse were complex and multifactorial. The main initial reason in this group was 'the satisfaction of curiosity'. The main factor to the continued use after the phase of initial was that the users wanted to enjoy the euphoric effects of ATS. Pharmacologically, ATS produce the acute reinforcing actions (such as release of dopamine), resulting in euphoria; and increase energy and social interaction even after the first single dose.<sup>18</sup> This hypothesis can interpret the reason why a number of ATS users seem likely to escalate into habitual or regular use from the initial experimental use.

The standards and attitudes about a particular drug provide an important determinant of the proportion of the population using that drug on an initial, periodic or continuous basis.<sup>19</sup> Some individuals in this study stated that the main reasons for ATS use were 'weight loss as anorectics' and 'to have a belief that the ATS is able to increase sexual activity'. Undoubtedly, these attitudes about ATS will induce not only abusing drug behaviour but harm to health as well as social consequences. In order to avoid possible abuse of these substances, cognitive behavioural interventions that modify subjects' attitudes and harmful behaviours as well as the measures of monitoring of ATS use as anorectics should be adopted in the addict population. A special finding in this study was the route of administration of ATS. 27.9 percent and 17.4 percent of subjects reported that they took ATS by 'chasing the dragon' in the initial and current phases respectively. This phenomenon should be further studied.

Another finding was that the injecting route of administration was significantly increasing in those who were chronic ATS abusers. A previous study showed that ATS abuse by injecting would increase the risk of the transmission of HIV and other blood-borne viruses (hepatitis B and C), not only through the sharing of needles but also through the increased possibility of unsafe sexual activities due to increased sex drive from effects of the drug, in contrast to opiates which actually decrease the libido in users.<sup>20,21</sup> Although presently HIV/AIDS in China is not as prevalent as in some American, European or African countries, there are risk factors that may contribute to a potential large-scale HIV transmission. In recent years, drug abuse has been the most threatening factor of HIV transmission. According to the report of the National Network

of AIDS Monitoring Centre, a majority of HIV cases (about two thirds of total cases) were infected through intravenous drug abuse.<sup>22</sup> Our previous study showed that most of the heroin abusers have different high-risk behaviours (such as sharing needles, unsafe sexual activities) associated with HIV infection. Knowledge about HIV/AIDS was also poor.<sup>23</sup> In order to reduce harmful consequences, effective strategies to prevent HIV/AIDS should also be adopted in the ATS abuse group.

The symptoms of irritability, depression, hallucinations, mania, aggression and delusions have been discovered within this group. Theoretically, both MDMA and methamphetamine can induce different types of mental disorders and abnormal behaviours. There are evidences that schizophrenia and other mental disorders in human are associated with dopaminergic hyperactivity. However, it appeared that the ATS-related mental symptoms depended on the frequency of use, route and doses of administration.<sup>24-28</sup>

The physical withdrawal of amphetamines and other ATS such as MDMA is a debatable issue. There are no clear-cut physical withdrawal syndromes such as occur with heroin.<sup>29</sup> In this study, 119 case or 9.2 percent reported that the main reason for continued ATS use was 'avoidance of physical discomfort of withdrawal'. Withdrawal symptoms characterized by fatigue and some affective disorders such as behavioural depression as well as hypersomnia were found in this group.

The findings of this study suggested that the characteristics, patterns and consequences of ATS abuse, like those of other abused drugs, are dependent on the individual, the environment, the dose of ATS, the route of administration, types of abused ATS, and concurrent drug or alcohol use. The study also indicated that ATS abuse produced multiple social, public health and individual consequences.

In order to prevent the spread of ATS abuse, comprehensive and integrated control programmes at the primary (reducing incidence), secondary (reducing prevalence), and tertiary (treatment) levels should be implemented.

**Limitation of this study:** The present study did not distinguish between methamphetamine and MDMA separately owing to the ATS testing method used.

## ACKNOWLEDGMENT

The authors would like to thank Dr. Xue Liyan, Shanghai Mental Health Centre; Dr. Liu Juxiang, Second Compulsory Detoxification Hospital of Wuhan Public Security Bureau; Professor Dr. Li Jianhua, Dr. Zhang Ruimin, Yunnan Province Institute on Drug Dependence Prevention And Treatment Centre; Mr. Zhang Yuzu, Kunming Compulsory Detoxification Centre; Dr. Liu Yuzhang, Guangxi Nanning Maoqiao Voluntary Detoxification Centre; Ms. Zhang Yaxing, Guangzhou Sanatorium of PLA;

Dr. Zhang Jianjun, Detoxification Hospital of Shenzhen Public Security Bureau; Dr. Li Xiaodong, Zhuhai Ruihua Detoxification Centre; Mr. Zhou Jiwen, Zhejiang Wenzhou Justice Bureau; Dr. Chen Shanmei, Chongqing Yuzhong Mental Health Centre; Ms. Teng Yingqun, Haerbin Detoxification Centre; Dr. Wang Xiaoping, Xian Beilin Detoxification Centre; Dr. Sun Buqing, Zhejiang Wenzhou Detoxification Centre; Dr. Zhu Yuezheng, Jiangsu Taicang Third People Hospital; and Dr. Peng Fenyong, Zhengjiang Province Drug Abuse Surveillance Station for their contributions.

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## NEEDLE SHARING BEHAVIOR AND HIV INFECTION AMONG MALE IDUs IN THE KATHMANDU VALLEY

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### Background

Nepal is emerging as a high-risk country for HIV infection. Sub-groups which include female sex workers (FSWs), injection drug users (IDUs), truckers with sexually transmitted infections (STIs) and labor migrants, particularly to Indian cities and towns, fall in high-risk categories for HIV infection. For instance, HIV prevalence in the Kathmandu Valley among IDUs was shown to be 50% in 1999 (NCASC, 1999) and among FSWs, HIV prevalence was 17% in 2000 (SACTS, 2000). Similarly, among STI patients HIV prevalence was about 2.7% in 2001 (NCASC, 2001). Clearly HIV prevalence is high and increasing in the country.

Kathmandu Valley has a typical scenario of HIV infection among IDUs that is not uncommon in South Asia: recent introduction of drug injection and explosive rates of HIV infection (Sarkar et al., 1994; Stimson and Choopanya, 1998). Until 1995 HIV prevalence among IDUs was negligible at less than 2% (NCASC, 1995). It suddenly increased to 50% of IDUs HIV-positive in 1999 (NCASC, 1999), and rates of HIV infection continued to grow to 68% among injectors in 2002 (New ERA, 2002). However, little has been known about the number of IDUs in the valley or about their sexual and needle sharing risk behavior. In this context a behavioral surveillance survey (BSS) and sero-study was undertaken among IDUs in the Kathmandu Valley.

### Objectives of the Study

The main objective of this paper is to examine the social characteristics of male IDUs in the Kathmandu Valley and their risk behaviors associated with HIV infection.<sup>1</sup> The analysis has covered three districts Kathmandu, Bhaktapur and Lalitpur, in the

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<sup>1</sup> The main reason for analyzing the behaviors of only male IDUs is the small sample of female IDUs identified in the study (see section 3).

Kathmandu Valley. These districts comprise the most densely populated urban and periurban centers of Nepal. They also differ in their social characteristics. The specific objectives of this paper are:

- (i) to discuss the background characteristics of IDUs by districts
- (ii) to analyze drug using and sexual behavior of IDUs by districts
- (iii) to analyze the association between needle sharing behaviors and HIV infection among male IDUs.

Rates of drug use and risk behavior differ among these districts and are important to observe given their socio-cultural differences and the need to identify factors affecting risk behavior for targeting interventions.

## Research Setting

Nepal is a multi-ethnic and multi-lingual country. It is also one of the poorest countries of Asia. It had an annual per capita income of \$190 USD in 1993 (CBS 1996). The country's total population is 23.15 million people (CBS, 2001). Of the total population about 7.1 percent live in the three districts of the Kathmandu Valley (Kathmandu, Bhaktapur and Lalitpur). About 61 percent of the population in the Valley live in the concentrated urban centers of its main districts which have the relatively highest population density of urban centers in Nepal.

Ethnic communities in Nepal divide broadly by linguistic affiliation. Nepali is a sanskritic, Indo-European language and lingua franca of the country, and it is spoken officially and by many Hindu caste and ethnic communities. There are also several Tibeto-Burmese language and ethnic groups in Nepal. Kathmandu, Bhaktapur and Lalitpur represent the original city states of the kingdom, and are still largely inhabited by Newar groups who were the early settlers of these communities. The city states evolved into the distinct contemporary urban centers of the Kathmandu Valley, although for over 200 years a high caste Hindu polity has ruled the country from these centers.

Kathmandu District is the home of Nepal's capital and is the most ethnically diverse of the three districts. It has the most extensive educational and economic opportunities, and the highest literacy rate at 87%. Its members work in public administration, social organizations, business, tourism and industrial manufacturing. It has been largely made up of Hindu Newar communities with some Buddhist Newars, although it also has the widest range of diverse Tibeto-Burmese speaking ethnic groups and Hindu caste groups. Kathmandu also has the most affluent community members of the three districts.

Lalitpur District is contiguous to Kathmandu and is largely comprised of Buddhist Newars who are famous for their traditional socio-ritual communities, and their fine metal and wood craftsmanship. The literacy rate in Lalitpur is 85%. Bhaktapur District is over half an hour away from Kathmandu by bus and has been the most distant from

the country's modernizing influences among these urban centers. Social transformations greatly increased in Bhaktapur when a paved road connected it to the seat of the capital over 30 years ago. It is largely made up of Hindu Newar communities and is the most agriculturally-oriented of the districts. It is also known for its traditional crafts and active socio-ritual life. It has the lowest rate of literacy among the three districts at 76% of the population.

## Methods and Materials

This paper is based on data collected in collaboration with New ERA, a research NGO that received technical and financial support from Family Health International (FHI, Nepal) for conducting the study. New ERA collected these data in the months of February and March in 2002. A sample of 303 male and 57 female IDUs was drawn from the three districts of the Kathmandu Valley. The main sample points were concentrated in the three municipalities in the valley. The study was granted ethical and technical approval by FHI's Protection of Human Subject Committee (PHSC) and Nepal Health Research Council (NHRC). The study clients were granted anonymity in their participation in the study, and pre and post-test counseling were conducted for all participants. STD/AIDS Counseling and Training Services (SACTS) was involved in blood sample collection & testing and post test counseling.

Respondent driven sampling (RDS) a form of chain referral network sampling was used to study the social characteristics of IDUs, and their HIV risk behavior and sero-status. Only those IDUs who had ever injected drugs in the last three months preceding the date of the interview were eligible to take part in the study. A structured questionnaire was used to collect the demographic and behavioral characteristics of the respondents. Laboratory tests of blood samples were performed for detecting HIV infection. Blood samples were collected using the finger prick method with capillary tubes. Trained laboratory technicians conducted two rapid tests, Capilus and Determine.

Respondent driven sampling (RDS), which is a form of chain referral network sampling, was used to access and recruit IDUs, and draw the sample for the study. A detail of the sampling methodology is available in the main report of the survey (New ERA, 2002).

In this article the estimated size of the population of IDUs in the Kathmandu Valley was taken from joint exercises in IDU enumeration conducted by New ERA and Center for Research on Environment Health and Population Activities (CREHPA), another NGO research participant funded by FHI (see New ERA & CREHPA, 2002). The following analysis of the data is based on simple cross tables and chi square analysis of significance.

## Estimated Size of IDUs in Kathmandu

New ERA and CREHPA independently carried out size estimations of IDUs in the Kathmandu Valley. New ERA conducted their size estimation as part of a quantitative behavioral surveillance and sero-prevalence survey of IDUs. CREHPA's objective was to conduct a qualitative, focused ethnographic study and IDU size estimation as a part of the study. There were close similarities in the methodologies for the size estimations of IDUs in the two studies, though also some differences in their mapping exercises which resulted in slightly differing size estimations that were accounted for when their data was merged.

Their enumeration of IDUs consisted of contacting relevant IDU social organizations for information on congregation sites and time periods to contact IDUs. They employed ex-IDUs and community representative IDUs to access and recruit cases. They also interviewed key informants (e.g. shop-keepers, etc.), as well as IDUs to draw maps of congregation sites. They then enumerated the number of IDUs that frequent sites and made up IDU networks. They then cross-checked their population numbers and networks across different sources of information.

Combined lists of the sites common to New ERA and CREHPA were prepared, as well as lists of sites covered only by New ERA and only by CREHPA. Finally, the greatest number of IDUs estimated by either New ERA or CREHPA in each site was taken as the final number. The two data sets were then merged to arrive at a final estimated number of IDUs in the Valley.

In total 291 locations and a total of 4399 IDUs (Male: 4261 and female: 138) were estimated (Table 1).

**Table 1: Total Number of IDUs as estimated by New ERA and CREHPA**

District	Sited Visited	Estimated Number of IDUs		
		Male	Female	Total
Kathmandu	171	2726	113	2839
Lalitpur	83	1189	3	1192
Bhaktapur	37	346	22	368
Kathmandu Valley	291	4261	138	4399

These estimations are the first systematic enumeration of IDUs in the Kathmandu Valley in Nepal. However, they should be seen as minimum estimates of IDUs, since those IDUs that inject alone and engage in more 'hidden' practices of drug procurement and use were not as accessible to the enumerators.

## Socio- Demographic Characteristics of IDUs

A large proportion of the male IDUs in Kathmandu Valley are relatively young. For example, almost 44% of IDUs are less than 25 years old, with about 28% of IDUs belonging to the 25-29 age group and another 28% are 30+ years of age. The age composition of IDUs varies by the districts. Bhaktapur has 60% of IDUs younger than 25 years compared to Lalitpur with only 30% of IDUs in this age group. This suggests that injecting drugs is a newly emerging problem among adolescents and youth in Bhaktapur. Variation in the age structure of male IDUs by districts is statistically significant at the one percent significance level.

**Table 2: Distribution of IDUs by Demographic Characteristics and District**

Demographic Characteristics	Districts			All districts
	Kathmandu	Bhaktapur	Lalitpur	
<b>Current Age**</b>				
< 25 years	44.9	63.0	32.2	43.9 (133)
25-29 years	24.6	26.1	34.4	27.7 (84)
30 + years	30.5	10.9	33.9	28.4 (86)
<b>Age at First Marriage</b>				
Never Married	55.7	58.7	62.2	59.7 (181)
< 20 years	11.4	10.9	5.6	9.6 (29)
20 – 24 years	19.1	26.1	22.2	21.1 (64)
25+ years	10.8	4.3	10.0	9.6 (29)
<b>Currently Living With</b>				
Wife	28.7	39.1	26.7	29.7 (90)
Own family	58.7	58.7	63.3	60.1(182)
Friends, relatives and others	12.6	2.2	10.0	10.2 (31)
All	55.1 (167)	15.2 (46)	29.7 (90)	100 (303)

Figures in the parenthesis are the number of cases

Note: \*\* = significant at 1%

About 60% of IDUs in the sample were never married and about 10% were married before the age of 20 years. There is no statistically significance variation between the districts by marital status. The three districts, also, do not differ significantly with respect to the current living arrangements of IDUs. Sixty percent of IDUs reported that they were living with their own family. About 30 percent IDUs were living with their wives. Although a six-fold higher rate (12.6%) of IDUs in Kathmandu live with their friends and relatives compared to much lower rates among IDUs in Bhaktapur (2.2%), the association between districts and marital status is not statistically significant (Table 2).

Among the three districts covered by the study Bhaktapur and Lalitpur have a higher proportion of members of the Newar ethnic group. This is reflected in the sample of IDUs, also. In Bhaktapur almost 65 percent IDUs were Newar and in Lalitpur, they constitute nearly 50% of the population. However, the ethnic composition of IDUs in the sample does not differ significantly by districts. Kathmandu has a slightly higher percentage of IDUs from high caste Brahmin/Chhetri compared to others (Table 3). It also has more IDUs from diverse Tibeto-Burmese speaking groups (e.g. Tamang and Magar).

**Table 3: Distribution of IDUs by Socio-cultural Characteristics and District**

Socio-cultural Characteristics	Districts			All Districts
	Kathmandu	Bhaktapur	Lalitpur	
<b>Schooling Years*</b>				
< 4 yrs	8.4	14.8	17.8	11.2 (34)
4-8 yrs	41.9	77.8	27.8	38.3 (116)
9+ yrs	49.7	7.4	54.4	50.5 (153)
<b>Ethnicity</b>				
Brahmin/Chhetry	37.7	23.9	36.7	35.3 (107)
Newars	34.7	65.2	48.9	43.6 (132)
Tamang/Lama/Magar/Gurung/Rai	22.2	8.7	12.2	17.2 (52)
Occupational + others	5.4	2.2	2.2	4.0 (12)
<b>All</b>	<b>55.1 (167)</b>	<b>15.2 (46)</b>	<b>29.7 (90)</b>	<b>303</b>

Figures in the parenthesis are the number of cases

Note: \* = significant at 10%

In Kathmandu and Lalitpur almost half of the IDUs in the sample reported at least 9 years schooling. In contrast, in Bhaktapur the percentage of IDUs with 9+ years of schooling is very low (7.4%). The three districts, thus, have statistically significant different educational levels among IDUs.

An attempt was made to classify IDUs by their lifetime migration status. Those IDUs who reported that they were living in the district since birth were classified as lifetime non-migrants. However, almost one third of IDUs were lifetime migrants to the valley. Lifetime migration status differs significantly by districts. Kathmandu has the highest rate (42%) of migrant IDUs, with Bhaktapur having the lowest rate (13%). This scenario reflects the situation observed in the general population with Kathmandu District having a higher influx of migrants and more ethnic diversity than the other districts.

**Table 4: Distribution of IDUs by Other Characteristics and District**

Other Characteristics	Districts			All Districts
	Kathmandu	Bhaktapur	Lalitpur	
<b>Lifetime Migration Status**</b>				
Non-migrant	58.1	87.0	76.7	68.0 (206)
Migrants	41.9	13.0	23.3	32.0 (97)
<b>Alcohol Consumption in the last 30 days**</b>				
Never	24.6	32.6	7.8	20.8 (63)
Less than once a week	27.5	26.1	34.4	29.4 (89)
At least once a week	21.6	19.6	28.9	23.4 (71)
Every day	26.3	21.7	28.9	26.4 (80)
<b>All</b>	<b>55.1 (167)</b>	<b>15.2 (46)</b>	<b>29.7 (90)</b>	<b>303</b>

Figures in the parenthesis are the number of cases

Note: \*\* = significant at 1%

IDUs in the sample also differed significantly by districts in alcohol consumption. Almost 20% of IDUs reported that they did not consume alcohol in the last 30 days before the date of interview. Non-use was as high as 33% in Bhaktapur compared to only 8% in Lalitpur (Table 4). In the context of common alcohol consumption among Newar communities and the dominance of Newars among the IDUs in Bhaktapur such difference seems to be anticipated. However, it is significant that between 20% and 30% of IDUs drink alcohol everyday, indicating potential problems with alcohol in addition to opiate dependence.

### Needle Sharing Behavior of IDUs

Needle sharing behavior of IDUs is often connected to their history of injecting drugs with longer term injectors engaging in more frequent drug injection (Chitwood et al. 2000). Table 5 provides the distribution of IDUs by number of years of injecting, primary drug of abuse and frequency of injecting drug in the last week.

**Table 5: Distribution of IDUs by history of drug injection and District**

History of Injecting Drugs	Districts			All Districts
	Kathmandu	Bhaktapur	Lalitpur	
Number of years of injecting				
<=Less than 12 months	15.6	15.2	11.1	14.2 (43)
13- 60 12-59 months	48.5	34.8	55.6	48.5 (147)
More than 60 + months	35.9	50.0	33.3	37.3 (113)
Primary drug of abuse **				
Tidigesic	74.9	89.1	55.6	217 (71.6)
Brown Sugar	14.4	6.5	56.7	37 (12.2)
Others	10.8	4.3	11.1	49 (16.2)
Frequency of injecting in the last week				
≤ 7 times	29.3	32.6	24.4	86 (28.4)
2-3 times a day	56.9	56.5	64.4	179 (59.1)
Four or more times a day	13.8	10.9	11.2	38 (12.5)
All	55.1 (167)	15.2 (46)	29.7 (90)	303

Figures in the parenthesis are the number of cases

Note: \*\* = significant at 1%

In the sample of 303 male IDUs almost half had a history of injecting drugs for more than five years. Tidigesic was the primary drug of abuse among 72% of respondents and about 60% injected drugs 2-3 times a day during the last week. Distribution of IDUs by districts differs significantly with respect to primary drug of abuse only. For instance, in Bhaktapur almost 89% IDUs have reported that their primary drug of abuse was Tidigesic, but in Lalitpur it was reported at only 56% (Table 5) with brown sugar (i.e., heroin) slightly more prevalent (57%). There is no significant association among districts in the duration of injection and frequency of injection in the last week.

In relation to the last time drugs were injected almost 84% of IDUs in the sample reported that they did not use needles that had been used by others. However, IDUs from the three districts differ significantly with respect to needle sharing behavior. For instance, in Bhaktapur about 7% IDUs reported the use of used needles/syringe during the last injection event while the percentage was high at 20% of IDUs sharing needles/syringes in Kathmandu (Table 6).

Similarly, about 78% of IDUs had not used needles that were left in public places during their last injection. Yet, nearly two-thirds of IDUs in the sample said that they injected in a group. Although use of left needles is not a dominant behavior among IDUs, over one-fifth had used stored needles in their last injection event. The high rates of group-injecting behavior in the valley are of concern since this is the context for transmitting the virus from an infected to an uninfected person and across social groups.

**Table 6: Distribution of IDUs by Needle Sharing Behavior in Last Injection and District**

Needle/syringe Sharing in the Last Injection	Districts			All Districts
	Kathmandu	Bhaktapur	Lalitpur	
Used needle/syringe used by others*				
No	79.6	93.5	86.7	83.8 (254)
Yes	20.4	6.5	13.3	16.2 (49)
Used needle/syringe left in public places				
No	74.9	78.3	83.3	77.9 (236)
Yes	25.1	21.7	16.7	22.1 (67)
Injected in a group				
No	62.3	78.3	68.9	66.7 (202)
Yes	37.7	21.7	31.1	33.3 (101)
All	55.1 (167)	15.2 (46)	29.7 (90)	303

Figures in the parenthesis are the number of cases

Note: \* = significant at 10%

Evaluation and comparison of needle sharing behavior of IDUs based on the experience of the last injection may not be as informative as other temporal assessments because needle-sharing is a widely-varied and constrained behavior that is subject to multiple influences. A comparison of needle/syringe behavior in the last week may present a more accurate range of needle risk. Almost 46% IDUs in the sample stated that they had shared needles/syringes that were used by others in the last week. Similarly, nearly a third of all IDUs reported the use of needles/syringes left in public places. These percentages are much higher compared to percentages based on the last injection event. However, the percentage of IDUs reporting group-injecting behavior in the last week is slightly lower compared to the percentages based on the last injection event (Table 6 and Table 7). Nevertheless, it is important to note that IDUs from the three districts do not differ significantly with respect to needle-sharing behavior in the last week.

**Table 7: Distribution of IDUs by needle sharing behavior in last the last week and District, 2001, 2002**

Needle/syringe Sharing in the Last Week	Districts			All Districts
	Kathmandu	Bhaktapur	Lalitpur	
Used needle/syringe used by others				
No	52.7	56.5	56.7	54.5 (165)
Yes	47.3	43.5	43.3	45.5 (138)
Used needle/syringe left in public places				
No	66.5	67.4	72.2	68.3 (207)
Yes	33.5	32.6	27.8	31.7 (96)
Injected in a group				
No	41.9	37.0	42.2	41.3 (125)
Yes	58.1	63.0	57.8	58.7 (178)
All	55.1 (167)	15.2 (46)	29.7 (90)	303

Figures in the parenthesis are the number of cases

### Needle Sharing Behavior and HIV Infection

Needle sharing behavior is the most important, direct source of HIV risk and transmission of HIV infection for IDUs (Des Jarlais, 1993). In this section a crude association between selected needle sharing behaviors and HIV status is analyzed. It should be noted that crude associations between the two variables might be influenced by intervening variables and, therefore, may show only a modest association between the variables.

Table 8 presents the results of Chi Square tests. The number of years of injection, frequency of injection in the last week, use of needles/syringes left in public places in the last injection and in the last week all have statistically significant associations with HIV infection. For instance, about 78% of IDUs who had been injecting for more than five years are HIV-infected compared to only 37% who have been injecting since the last 12 months only. Similarly, rates of HIV infection among IDUs who inject three or more times a week are 82%. While HIV positive rates among those IDUs who do not inject daily are 50%. Similarly, HIV infection is found to be much higher (over 80%) among IDUs who reported the use of needles/syringes left in public places in the last injection event, as well as in the last week of injection, compared to those who did not use needles left in public places in either time period (60%). These drug use and needle risk correlates of HIV infection are well documented in a wide range of research (Van Ameijden et al. 1999) and are important targets of interventions.

**Table 8: Needle Sharing and HIV Infection, 2001, 2002**

History of Injecting Drugs	HIV Infection (%)	N
Number of years of injecting**		
<= Less than 12 months	37.2	43
13-60 12-59 months	66.4	113
More than 60 + months	78.2	147
Primary drug of abuse		
Tidigesic	66.2	216
Combination	78.4	37
Brown Sugar	69.4	49
Frequency of injecting in the last week**		
≤ 7 times	50	86
Two times a day	73.7	179
Three or more times a day	81.6	38
<b>Needle/syringe Sharing in the Last Injection</b>		
Used needle/syringe used by others		
No	69.3	254
Yes	61.2	49
Used needle/syringe left in public places**		
No	63.1	236
Yes	85.1	67
Injected in a group		
No	70.8	202
Yes	62.4	101
<b>Needle/syringe Sharing in the Last Week</b>		
Used needle/syringe used by others		
No	67.3	165
Yes	68.8	138
Used needle/syringe left in public places**		
No	60.9	207
Yes	83.3	96
Injected in a group		
No	70.4	125
Yes	66.3	178
All	68.0	303

Note: \*\* = significant at 1%

## Discussion

The rates of HIV infection among IDUs in Nepal are now comparable with rates in Asian countries with the highest prevalence of HIV (Stimson 1997). This study and other research in Nepal suggest that the rapid diffusion of HIV among injecting drug users is related to an interaction of various factors, including the recent nature of drug injection and risk prevention services (Shrestha and Lohani 1995; Peak et al. 1995), the mobility and mixing of drug user networks (CREPHA 2002), and, as shown above, the widespread regularity of risky injection practices. These conditions create the dynamics and context for the rapid spread of HIV infection. The high rate of HIV prevalence in the Kathmandu Valley (68%) and the commonality of needle sharing make it likely that whether through direct sharing or the mediated sharing of publicly-stored syringes, new, uninfected injectors are likely to share contaminated syringes with an HIV-positive injector early in their injection career (Chitwood et al. 2000; Neagius et al. 1996).

The large number of injectors and high rates of HIV infection found in the three municipality districts indicate that these sites comprise one of the focal areas of drug injection and HIV transmission in the country. They also reflect the ethnic and social diversity of Nepal, and the effects of population migration due to economic pressures on rural, agrarian communities and the dislocation of community members due to the six year insurgency that has affected many regions of the country (Beine 2003).

The younger age structure, lower number of years injecting and lower education levels of IDUs in Bhaktapur suggest that IDUs in this district are more recent users and may be from a lower socio-economic class than IDUs in Kathmandu and Lalitpur. These differences are important considerations for planning risk interventions and treatment programs for these sites. Similarly, the greater use of heroin (i.e. brown sugar) in Lalitpur, compared to the dominance of buprenorphine use in Kathmandu and Bhaktapur, are factors that must be considered in implementing substitution therapy programs in these sites.

This paper shows the importance of exploring differences in drug use and needle risk behavior in diverse ethnic and social communities, as well as the impact of social dislocation on risky drug use (Jutkowitz et al. 1997; Seddon 1995). The significant differences among the three districts in rates of in-migration, the use of buprenorphine and heroin, levels of alcohol consumption, and risky needle-sharing during the last injection event indicate the importance of considering the social context in understanding and tracking the spread of HIV infection among IDUs. These findings also point to the need for additional research to more fully understand the nature of these factors and their relation to HIV risk behavior and transmission.

The results of this study show the critical need for drug demand reduction programs (e.g. drug treatment), and harm and risk reduction interventions. Issues surrounding the availability and storage of syringes, that were significantly related to higher sero-

positive rates, need to be addressed to protect IDUs against HIV infection. Furthermore, the high prevalence of HIV infection among IDUs, and the important differences in HIV status between longterm users and more recent users, indicate the importance of interventions with new drug injectors and the sexual partners of IDUs to prevent the spread of HIV in the Kathmandu Valley and beyond (Saidel, et al. 2003).

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## THE ASIAN MULTICITY EPIDEMIOLOGY STUDY

### Questionnaire

City/Metropolitan Name : \_\_\_\_\_  
Period of Reporting : \_\_\_\_\_  
Compiled by : \_\_\_\_\_  
Name of Agency : \_\_\_\_\_

Please return the completed questionnaire to:

The Director  
Centre for Drug Research  
Universiti Sains Malaysia  
11800 Minden  
Penang  
MALAYSIA

Telephone : 604-653 2144 / 655 2829/ 657 9022  
Fascimile : 604-6577 957  
Telex : MA-40254  
Cable : UNISAINS

# ASIAN MULTICITY EPIDEMIOLOGY STUDY

## A. GENERAL POPULATION DEMOGRAPHIC INDICATORS \*

\* Data from most recent Census. State year \_\_\_\_\_  
(to be completed once a year)

1. Total population of City/Metropolitan  
\_\_\_\_\_

N %

2. Sex: Male \_\_\_\_\_  
Female \_\_\_\_\_

3. Age\*\* Under 15 years old \_\_\_\_\_  
15 - 19 years \_\_\_\_\_  
20 - 34 years \_\_\_\_\_  
35 - 44 years \_\_\_\_\_  
45+ years \_\_\_\_\_

(\*\* or specify other similar age brackets)

4. Ethnic groups  
(specific for major groups)

Ethnic 'A' \_\_\_\_\_  
Ethnic 'B' \_\_\_\_\_  
Ethnic 'C' \_\_\_\_\_  
Other (specify: \_\_\_\_\_)

5. Religion  
(specific for major groups)

Religion 'A' \_\_\_\_\_  
Religion 'B' \_\_\_\_\_  
Religion 'C' \_\_\_\_\_  
Other (specify: \_\_\_\_\_)

## A. GENERAL POPULATION DEMOGRAPHIC INDICATORS

N %

6. Marital Status

Single, never married \_\_\_\_\_  
Separated/Divorced \_\_\_\_\_  
Married \_\_\_\_\_  
Widowed \_\_\_\_\_  
Other \_\_\_\_\_

7. Occupational Categories (List according to Census)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

8. Number of Years of Education

Zero \_\_\_\_\_  
1 - 6 \_\_\_\_\_  
7 - 12 \_\_\_\_\_  
13 + \_\_\_\_\_

9. Annual Per Capita Income (in local currency)  
\_\_\_\_\_ (please define it as in the Census report)

10. Other comments:  
\_\_\_\_\_  
\_\_\_\_\_

**B. DRUG TREATMENT INDICATORS**

		TYPE OF TREATMENT FACILITY			
		Prison	Specialized Drug Treatment	Primary/General Health Care	Others
1a.	Total number of available treatment facilities in the city	_____	_____	_____	_____
1b.	Total number of treatment facilities from which information is collected	_____	_____	_____	_____
2.	Total number in drug treatment facilities in the city	_____	_____	_____	_____
3a.i	Number of Institutional Admissions (In-patient)				
	- New Admissions	_____	_____	_____	_____
	- Readmissions	_____	_____	_____	_____
	- Total Admissions	_____	_____	_____	_____
3a.ii	Number of Non-Institutional Admissions (Out-patient)				
	- New Admissions	_____	_____	_____	_____
	- Readmissions	_____	_____	_____	_____
	- Total Admissions	_____	_____	_____	_____
3b.	Number of Patients by <u>Primary</u> Drug of Abuse				
	Opium type				
	Opium	_____	_____	_____	_____
	Morphine	_____	_____	_____	_____
	Heroin	_____	_____	_____	_____

**B. DRUG TREATMENT INDICATORS**

		TYPE OF TREATMENT FACILITY			
		Prison	Specialized Drug Treatment	Primary/General Health Care	Others
	Codeine	_____	_____	_____	_____
	Pethedine	_____	_____	_____	_____
	Pentazocine	_____	_____	_____	_____
	Buprenorphine	_____	_____	_____	_____
	Others (specify: _____)	_____	_____	_____	_____
	Cannabis type	_____	_____	_____	_____
	Cocaine type	_____	_____	_____	_____
	Hallucinogens (e.g. LSD)	_____	_____	_____	_____
	Amphetamine	_____	_____	_____	_____
	Sedative hypnotics (e.g. barbiturates, methaqualone, etc.)	_____	_____	_____	_____
	Tranquilisers (e.g. benzodiazepines, etc.)	_____	_____	_____	_____
	Solvent/Inhalant	_____	_____	_____	_____
	Alcohol	_____	_____	_____	_____
	Others (specify: _____)	_____	_____	_____	_____
3b.i	Number of Polydrug Users	_____	_____	_____	_____
3b.ii	Number of patients by <u>secondary</u> drug of abuse (specify type)				
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____
	_____	_____	_____	_____	_____

**B. DRUG TREATMENT INDICATORS**

		TYPE OF TREATMENT FACILITY			
		Prison	Specialized Drug Treatment	Primary/General Health Care	Others
3c.	Sex of Patients				
	Male	_____	_____	_____	_____
	Female	_____	_____	_____	_____
3d.	Patient Age				
	Under 15 years	_____	_____	_____	_____
	15 – 19 years	_____	_____	_____	_____
	20 – 34 years	_____	_____	_____	_____
	35 – 44 years	_____	_____	_____	_____
	45+ years	_____	_____	_____	_____
3e.	Patient Ethnicity (specify)				
	a. _____	_____	_____	_____	_____
	b. _____	_____	_____	_____	_____
	c. _____	_____	_____	_____	_____
	d. _____	_____	_____	_____	_____
3f.	Patient Religion (specify)				
	a. _____	_____	_____	_____	_____
	b. _____	_____	_____	_____	_____
	c. _____	_____	_____	_____	_____
	d. _____	_____	_____	_____	_____
3g.	Patient Marital Status				
	Single, never married	_____	_____	_____	_____
	Separated/Divorced	_____	_____	_____	_____
	Married	_____	_____	_____	_____
	Widowed	_____	_____	_____	_____
	Others	_____	_____	_____	_____

**B. DRUG TREATMENT INDICATORS**

		TYPE OF TREATMENT FACILITY			
		Prison	Specialized Drug Treatment	Primary/General Health Care	Others
3h.	Patient Current Occupation				
	Professionals	_____	_____	_____	_____
	Managers/ Administrators	_____	_____	_____	_____
	Sales workers	_____	_____	_____	_____
	Clerical workers	_____	_____	_____	_____
	Drivers/Transport workers	_____	_____	_____	_____
	Agro-based workers	_____	_____	_____	_____
	Self-employed	_____	_____	_____	_____
	Unemployed	_____	_____	_____	_____
	Student	_____	_____	_____	_____
	Others (specify: _____)	_____	_____	_____	_____
3i.1	Routes of Administration and Drug Sources by Drug Type				
	<b>Type of Drug</b>	<b>Route of Administration</b>	<b>Source of Drug</b>		
	Opium type	_____	_____		
	Opium	_____	_____		
	Morphine	_____	_____		
	Heroin	_____	_____		
	Codeine	_____	_____		
	Pethedine	_____	_____		
	Pentazocine	_____	_____		
	Buprenorphine	_____	_____		
	Others (specify: _____)	_____	_____		
	Cannabis type	_____	_____		
	Cocaine type	_____	_____		
	Hallucinogens (e.g. LSD)	_____	_____		
	Amphetamine	_____	_____		

Sedative hypnotics (e.g. barbiturates, methaqualone, etc.) \_\_\_\_\_  
 Tranquilisers (e.g. benzodiazepines) \_\_\_\_\_  
 Solvent/Inhalant \_\_\_\_\_  
 Alcohol \_\_\_\_\_  
 Others (specify: \_\_\_\_\_)

	Prison	Specialized Drug Treatment	Primary/General Health Care	Others
3i.2 Number of Patients using multiple routes	_____	_____	_____	_____
3k. Living Arrangements				
Alone	_____	_____	_____	_____
Living with family/other relative	_____	_____	_____	_____
Living with friends/colleagues	_____	_____	_____	_____
Others (specify: _____)	_____	_____	_____	_____
3l. Number of years of Education				
Zero	_____	_____	_____	_____
1 - 6 years	_____	_____	_____	_____
7 - 12 years	_____	_____	_____	_____
> 12 years	_____	_____	_____	_____

4. Other comments/observations:  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**C. LAW ENFORCEMENT INDICATORS**

1. Total Number of Persons Arrested for Criminal Offences \_\_\_\_\_
2. Number of Persons Arrested for Drug-related Offences
  - a. Arrests for use/consumption \_\_\_\_\_
  - b. Arrests for possession \_\_\_\_\_
  - c. Arrests for sales \_\_\_\_\_
  - d. Arrests for trafficking \_\_\_\_\_
  - e. Arrests for conspiracy \_\_\_\_\_
  - f. Other drug-related offences \_\_\_\_\_  
 (Please specify: \_\_\_\_\_)

3. Number and Quantity of Drugs Seized by Drug Type

	No. of Seizures	Quantity (kg/# of pills/vol.)
<b>Opiate Type</b>		
Opium	_____	_____
Morphine	_____	_____
Heroin	_____	_____
Codeine	_____	_____
Pethedine	_____	_____
Pentazocine	_____	_____
Buprenorphine	_____	_____
<b>Cannabis Type</b>		
Cocaine type	_____	_____
Hallucinogens (e.g. LSD)	_____	_____
Amphetamines	_____	_____
Sedative/hypnotics (e.g. barbiturates, methaqualone, etc.)	_____	_____
Tranquilisers (e.g. benzodiazepines)	_____	_____

Solvents/Inhalants \_\_\_\_\_  
 Alcohol \_\_\_\_\_  
 Others (specify: \_\_\_\_\_) \_\_\_\_\_

4. Drug Production Crimes

	a	b	c	d	e
Amount of drug seized in a manufacturing facility (kg/pills/volume)	_____	_____	_____	_____	_____
Number of labs destroyed	_____	_____	_____	_____	_____
Amount Destroyed (kg/#/vol. acreage)	_____	_____	_____	_____	_____
Arrest for cultivation (person)	_____	_____	_____	_____	_____
Arrest for manufacture (person)	_____	_____	_____	_____	_____

Note:

- a - Opium
- b - Heroin
- c - Marijuana
- d - Amphetamines
- e - Other drugs, specify as many as applicable: \_\_\_\_\_

5. Traffic Accidents

	Source(s) of Information
a. Total Number of Traffic Accidents	_____
b. Number of Crashes Caused by Drivers under the Influence of:	
Alcohol	_____
Narcotic drugs	_____
Psychotropic substances	_____

6. Other comments:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

D. HEALTH INDICATORS

	N	Source(s) of Information
1a. Number of HIV positive cases/ AIDS cases	_____	_____
1b. Number of Drug-related HIV positive cases/ AIDS cases	_____	_____
2a. Number of Psychological Cases	_____	_____
2b. Number of Drug-Associated Psychological Cases	_____	_____
3a. Total Number of Emergency Room Cases	_____	_____
3b. Number of Drug-related Emergency Room Cases	_____	_____
4. Number of Drug-related Deaths	_____	_____
5. Other Health Indicators (specify: _____)	_____	_____

6. Other comments:

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

**E. SOCIAL INDICATORS E.G. DATA FROM FAMILY, WORKPLACE, SCHOOL, ETC.**

(Attach as Annexe, data from qualitative research studies/exploratory studies or surveys)

**F. OTHER COMMENTS:** (e.g. description of changing conditions or shifting patterns, e.g. populations shifts, economic/environmental conditions that are likely to have an impact on drug abuse trends)

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**NOTE: PLEASE FILL OUT ANNEXE**

**Profile of Addicts by Primary Drug of Abuse (Age and Route)  
(Male Addicts)**

Primary Drug	Age (years)					Route of Administration						
	<15	15-19	20-34	35-44	>45	Inh	Inj	Oral	Smoke	Smoke/Chase	Sniff/Snort	Other/Multiple
1.												
2.												
3.												
Emerging drug, if any 1. _____												

**Profile of Addicts by Primary Drug of Abuse (Age and Route)  
(Male Addicts)**

Primary Drug	Age (years)					Route of Administration						
	<15	15-19	20-34	35-44	>45	Inh	Inj	Oral	Smoke	Smoke/Chase	Sniff/Snort	Other/Multiple
1.												
2.												
3.												
Emerging drug, if any 1. _____												

Profile of Addicts by Primary Drug of Abuse (Education and Occupation)  
(Male Addicts)

Primary Drug	Education (years)				Occupation							Others, specify		
	Zero	1-6	7-12	>12	Prof.	Mgmt/Adm	Sales	Clerical	Drivers	Agro	Unemp.		Self-emp.	Student
1.														
2.														
3.														
Emerging drug, if any														
1.														

Profile of Addicts by Primary Drug of Abuse (Education and Occupation)  
(Female Addicts)

Primary Drug	Education (years)				Occupation							Others, specify		
	Zero	1-6	7-12	>12	Prof.	Mgmt/Adm	Sales	Clerical	Drivers	Agro	Unemp.		Self-emp.	Student
1														
2.														
3.														
Emerging drug, if any														
1.														

ASIAN MULTICITY EPIDEMIOLOGY STUDY

INSTRUCTIONS FOR COMPLETING THE REPORTING FORMS

GENERAL

1. City/Metropolitan Name: Each reporting City is identified by this item. If data available to you covers a larger area than the city limits then, please report data for the metropolitan area. Specify whether report is on city or metropolitan area.
2. Period of reporting: This refers to the period when information is collected.
3. Where no information is available, use NA, if not applicable use NP, if not known use DK (don't know).
4. Where information is available but not accessible or not collected use NC.
5. When reporting numbers, do not use (-) for missing data. If missing indicate NA and if no cases are reported, use 0 (zero).
6. Please ensure all items in the reporting forms are completed to the best of your ability. Where gaps occur please send other sources of information which may include a small area survey or survey among students, etc.
7. Please provide all sources of information.

REPORT FORM INDICATORS

Item	Explanation
A. GENERAL POPULATION DEMOGRAPHICS	All the data referred to under this section (A1-A10) is <u>City/Metropolitan</u> data and not <u>national</u> data and needs to be provided only once a year. Bear in mind this is a city epidemiology study and all the relevant demographic variables reported should be for the city. This data should be available from the <u>census</u> , and where information is outdated, please provide the latest estimates if available. Please give the numbers and percentage for all items.

1. Total population of City/Metropolitan      This refers to the residential population. Please give latest year of census or estimate.
2. Sex      Please indicate as required.
3. Age      Please use categories provided as far as possible. If it is not similar to your city's census, please specify age brackets according to your census data.
4. Ethnic Groups      This refers to race and not religion. Nationals are citizens of the country and should be specified according to the major ethnic groups/races.
5. Religious Groups      Please indicate as required.
6. Marital Status      Provide data according to given categories.
7. Occupational Categories      List categories as used in your census.
8. Number of Years of Education      Please indicate accordingly.
9. Annual Per Capita Income      Please provide per capita Income data. If this is not available please provide alternately household income or personal income figures and this has to be clearly stated.
10. Other comments/problems      Please specify source of and give details of problems encountered in data collection. If you need to provide clarification on any of the items in this section, please indicate.

**B. DRUG TREATMENT INDICATORS**

Should try to include all forms of drug treatment facilities; private or government. Specialized drug treatment centres are facilities solely for drug treatment. Primary health/General health care refers to medical facilities which provide some treatment for drug-related cases.

- 1a. Total Number of available facilities in the city      Please indicate according to prison, specialized drug treatment centres, primary/general health care, or other.
- 1b. Total Number of treatment facilities from which information is collected.      Specify as in 1a above.
2. Total Number in treatment      Please indicate total number of clients treated in treatment facilities, etc. over the whole period reporting.
- 3a(i). Number of Institutional Admissions (in-patient)      This is the total for the whole period. If possible, indicate if they are new or readmissions. New admissions are persons admitted for the first time to that facility and not to other (not ever).
- 3a(ii). Number of Non-institutional Admissions (out-patients)      This is the total for the whole reporting period. If possible, indicate if they are new or readmissions. New admissions are persons admitted for the first time to that facility.
- 3b. Number of Patients by Primary Drug of Abuse      To indicate only primary drug of abuse. If patients are poly-users indicate under 3b(i)
- 3b(i). Polydrug Users      Indicate number of patients who used more than one drug during the 30 days prior to admission.
- 3b(ii). Number of patients by secondary drug of abuse      This is an optional item. If information is available indicate types of secondary drugs that are abused by patients.

**ALL INFORMATION FOR ITEMS 3c TO 3k TO BE COLLECTED FOR ALL ADMISSIONS (NEW AND OLD)**

- 3c. Sex of Patients      Please indicate as required.
- 3d. Patient Age      Please use categories provided.
- 3e. Patient Ethnicity      This refers to race and not religion. There are two groups under ethnicity. Nationals are citizens of the country and foreigners are non-citizens residing in the country. For

- nationals specify to major ethnic group/races.
- 3f. Patient Religion Please indicate as required.
- 3g. Patient Marital Status Please indicate according to categories provided.
- 3h. Patient Current Occupation Current is defined as employment status as of date of treatment admission. Please indicate according to categories provided. Sales refers to in-house and fieldwork, nature of job involves convincing power. Clerical are office jobs. Agro-based workers refer to people involved in either cultivation or farming or fishing. The unemployed includes student dropouts. Self-employed refers to those who run their own business. Student category refers to active students only and does not include dropouts. 'Others' category includes housewives and other category of workers not specified above. Seasonal workers consistently doing the same job should be classed in the specific categories, while those doing odd jobs should be classed in the 'others' category.
- 3i. Route of Administration Please provide according to categories provided.
- Inhalation Refers to inhalation of gases/volatile substance e.g. glue.
- Injection Refers to all types of injections, i.e. i.v., intramuscular, under the skin, etc.
- Oral Refers to chewing or swallowing.
- Smoking Refers to the consumption of drugs, e.g., heroin, methamphetamines, and cannabis in a combination form, e.g. with tobacco.
- Smoking/Chasing Refers to 'chasing the dragon' including a vaporized form of a drug that includes methamphetamine.

### Sniffing/Snorting

Sniffing refers to nasal route of drug use. Snorting is mainly used for cocaine or methamphetamines.

- 3j. Drug sources Please specify primary source of drugs for patients.
- 3k. Living arrangement Refers to whom patient is living with at time of treatment admission. For the homeless, specify on 'others' category.
- 3l. Number of years of education Please indicate accordingly.
- C. LAW ENFORCEMENT INDICATORS This set of indicators refers to drug-related police activities and other information on sales, production and trafficking of drugs.
1. Total no. of persons arrested for criminal offences. Please provide information if available. Data can be reported for the reporting period. If this is not available, total cumulative figure for the year could be reported.
2. Number of Drug-related Arrests Please provide information according to types of arrests.
3. Number and Quantity of Drugs Seized by Drug Type Please provide data according to drug type and indicate the measure for quantity, i.e. kg or number or litres. For 'other drug', please specify each type in columns provided.
4. Drug Production Crimes
- a. Amount of drug seized in a manufacturing factory Please provide data accordingly to drug type and indicate the measure for quantity, i.e. kg. or number or litres.
- b. Number of laboratories destroyed Please indicate the number of laboratories destroyed for the reporting period.
- c. Amount Destroyed Please state the amount destroyed and indicate the measure per quantity.
- d. Arrest for Cultivation Please state the number of persons arrested for cultivation for the reporting period.

e. Arrest for Manufacture Please state the number of persons arrested for manufacture for the reporting period.

5. Traffic Accidents

a. Total no. of traffic accidents If available, please provide data on total number of traffic accidents.

b. No. of crashes caused by drivers Please provide data for the number of accidents caused by drivers under the influence of drugs according to the categories provided.

D. HEALTH INDICATORS

If information on these items is not systematically collected, please report on any information available and source of information.

1a. Number of HIV Positive/AIDS cases Number of new cases who have been found to be HIV positive or having AIDS during the reporting period.

1b. Drug-related HIV positive/AIDS Number of new drug-related cases who have been found to be HIV positive or having AIDS during the reporting period.

2a. Number of psychological cases This refers to total psychological cases/mental disorders.

2b. Drug associated psychological cases Drug associated mental disorders such as drug psychoses, depressions, etc. (Please exclude drug withdrawal or intoxication cases).

3a. Total number of emergency room cases Total number of emergency room cases reported at a facility.

3b. Drug-related emergency room cases Cases related to drug overdose and as well as other drug-related medical complications.

4. Number of drug-related deaths Deaths related to the above.

5. Other health indicators If information on other indicators is available (e.g. hepatitis, TB) indicate here.

E. SOCIAL INDICATORS

These are optional items. If information from family, workplace, schools, etc. is available, please indicate.

F. OTHER COMMENTS

Please provide any other comments concerning data collection, data sources, and data items.

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UNIVERSITI SAINS MALAYSIA  
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