

Epidemiologic Trends in Drug Abuse

Advance Report, December 2000

Community Epidemiology Work Group

National Institutes of Health
National Institute on Drug Abuse

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Introduction

This Advance Report is a synthesis of findings presented at the 49th meeting of the Community Epidemiology Work Group (CEWG) held in San Francisco, California, on December 12-15, 2000. Sponsored by the National Institutes of Health, National Institute on Drug Abuse (NIDA), the CEWG is a network of epidemiologists and researchers in the United States that meets biannually to review current and emerging substance abuse problems. The members present drug abuse indicator data, survey findings, and other quantitative information compiled from local, city, State, and Federal sources. To assess drug abuse patterns and trends, data from a variety of health and other drug abuse indicator sources are accessed and analyzed. Sources include public health agencies, medical and treatment facilities, medical examiners' and coroners' offices, criminal justice and correctional offices, law enforcement agencies, and sources unique to local areas. National data are used to enhance what is presented by CEWG members. Large-scale Federal and other databases used in analyses include the Treatment Episode Data Set (TEDS) maintained by the Substance Abuse and Mental Health Services Administration (SAMHSA); the Drug Abuse Warning Network (DAWN) data on emergency department (ED) drug-related mentions and medical examiner (ME) drug-related deaths (SAMHSA); the Arrestee Drug Abuse Monitoring (ADAM) program funded by the National Institute of Justice (NIJ); information on drug seizures, price, and purity from the Drug Enforcement Administration (DEA); the Uniform Crime Reports maintained by the Federal Bureau of Investigation (FBI); and poison control centers. These data are enhanced with qualitative information obtained from ethnographic research, focus groups, and other community-based sources.

The CEWG areas include:

Atlanta	Los Angeles	Phoenix
Baltimore	Miami	St. Louis
Boston	Mpls./St. Paul	San Diego
Chicago	Newark	San Francisco
Denver	New Orleans	Seattle
Detroit	New York	Texas*
Honolulu	Philadelphia	Washington, D.C.

* Includes Dallas and other areas in Texas

Information reported at each CEWG meeting is distributed to drug abuse prevention and treatment agencies, public health officials, researchers, and policymakers. The information is intended to alert authorities at the local, State, regional, and national levels, and the general public, to the current conditions and potential problems so appropriate, timely action can be taken. Researchers also use this information to develop research hypotheses that might explain social, behavioral, and biological issues related to drug abuse.

In addition to ongoing assessment of drug patterns and trends in the United States, the CEWG provides a forum for the discussion of drug patterns and trends in other areas and regions of the world. This meeting included presentations on drug abuse surveillance and other research in Canada, Malaysia, Mexico, and Thailand.

Reports were presented by representatives of the United Nations Drug Control Programme (UNDCP) and the National Drug Intelligence Center (NDIC), Johnstown, Pennsylvania.

In addition, preliminary research findings were presented by NIDA grantees conducting studies in the San Francisco area.

Drug Abuse Highlights for the United States

Data from the 49th meeting of the CEWG portrayed the diversity of drug abuse patterns within and across CEWG areas, as well as changes in trends over time. Findings presented at the meeting are based primarily on 1998 and 1999 data and on comparisons of these data with those from earlier time periods. The major findings are highlighted below.

COCAINE/CRACK indicators continue to decline, a trend reported in 18 of the 21 CEWG areas. The downward trend is particularly striking in areas where abuse of these drugs has been most concentrated, especially in areas of the northeast, mid-Atlantic, and northern Midwest region of the Nation. The aging-out of crack abusers appears to be a major factor in the downward trend. Nevertheless, cocaine/crack indicators remain elevated in most CEWG areas, and cocaine ranked first in DAWN ME drug-related deaths in nine CEWG sites. Indicator data show that cocaine is frequently used concurrently or sequentially with other substances.

HEROIN indicators are trending upward in 15 CEWG sites located across the Nation. Heroin/morphine ranked first in DAWN ME drug-related mentions in eight CEWG areas. As in the past, CEWG members continued to report increases in heroin indicators among young populations. Indicator data also show that heroin is often used in combination with cocaine (either concurrently or sequentially).

MARIJUANA indicators were mixed across CEWG areas, but there were signs that abuse of the drug is stabilizing in some areas after the dramatic upsurge from 1990-98. While decreases or stabilization were characteristic of such indicators as ED mentions, CEWG members reported increases in primary marijuana treatment admissions. Recent indicator data also show that marijuana is more likely than other illicit drugs to be used in combination with other substances, including hydrocodone and MDMA (methylenedioxymethamphetamine, or ecstasy).

METHAMPHETAMINE indicators, which appeared to be trending downward from 1997 through the first half of 1999, showed signs of increasing again during the last half of 1999. Reports from 11 CEWG areas indicate that methamphetamine is being used along with other drugs at dance venues such as raves. There are signs also that methamphetamine activity is increasing in areas where it has not been a major problem in the past. Ethnographers report that the use of Viagra with methamphetamine and other substances may cause serious health problems.

MDMA (ecstasy) is being closely monitored in CEWG areas. CEWG members from 17 areas report that ecstasy use has become more widespread. Members also report that ecstasy is now being used in a variety of settings, including house parties, by different age groups. DAWN ED mentions show that MDMA use, in combination with marijuana/hashish increased from 8 in 1990 to 796 in 1999.

Among the **EMERGING DRUGS** of abuse are several licit substances: clonazepam (a benzodiazepine) and hydrocodone, hydromorphone, and oxycodone (controlled substances). Hydrocodone (e.g., Lorect, Lortab) appears to be the most widely abused. From 1993 to 1999, DAWN ED hydrocodone mentions increased 139 percent (from 6,115 to 14,639). Among marijuana/hashish ED mentions, use of hydrocodone increased from 8 in 1990 to 840 in 1999.

Monitoring of major drug abuse patterns and trends will continue in all CEWG areas. In addition, members will examine questions raised during the meeting proceedings, including the following:

- Are amphetamine indicators rising (apart from methamphetamine indicators)?
- Why are treatment admissions for primary abuse of marijuana increasing so dramatically? Is the increase in admissions related to increased referrals from the criminal justice system?
- To what extent is hepatitis C increasing among different injection drug-using populations?
- What are the health risks associated with different combinations of drugs used concurrently and sequentially?

Cocaine/Crack

Members in 18 of the 21 CEWG areas reported a downward trend in cocaine/crack indicators, a trend attributed in part to the aging-out of crack abusers and the unpopularity of the drug among new and younger drug abusers.

The downward trend in cocaine/crack indicators is most apparent in regions of the Nation where abuse has been most concentrated. New York is a case in point. While cocaine indicators in New York were high from 1996-99, the trend downward is striking, as indicated in the chart below.

Decreases in Cocaine Indicators in New York				
Indicator	1996	1997	1998	1999
ED Mentions Rates*	21,542 408	20,202 749	19,549 557	14,799 515
ME Rates*	749	557	515	N/A
Male Arrestees †	56.0	57.6	47.1	44.2
* Per 100,000 population. † Percent testing cocaine-positive in ADAM. N/A = Not Available.				

The variability of cocaine/crack indicators across CEWG sites is best illustrated by the [map below](#). As shown, the highest rates (per 100,000 population) of cocaine ED mentions are more concentrated in northeast, mid-Atlantic, and (northern) Midwest regions of the Nation. These same areas tend to be those where cocaine ED mentions have decreased most dramatically.

Findings on the downward trend in cocaine/crack indicators reported for CEWG areas included the following:

Atlanta All indicators suggest that the prevalence of cocaine/crack use is declining.

Baltimore The crack epidemic continues to wane. Smoked cocaine (primary drug) treatment admissions have aged: 55 percent were over age 35 in 1999.

Boston Cocaine/crack indicators continue a decline that first became apparent in 1995.

Chicago Cocaine/crack indicators have declined from peak usage level in the mid-1990s.

Los Angeles Except for ED mentions, all cocaine/crack indicators are lower.

New Orleans Cocaine/crack indicators including ED mentions, arrests, and treatment admissions are trending down.

Newark In Newark, cocaine/crack treatment admissions have declined 70 percent since 1992.

New York Primary cocaine treatment admissions declined 9 percent from 1998 to 1999.

Philadelphia Between 1994 and 1999 cocaine/ crack (primary drug) treatment admissions decreased by 77 percent. Focus groups reported that the crack-using population is aging and there are fewer new users.

Changes in ED Cocaine Mentions: 1998-1999



Comparisons of peak year versus 1999 rates of cocaine ED mentions show a decrease of between 13 and 41 percent in the CEWG areas listed below. (Peak years are outlined in black and all occurred before 1997.)

Percentage Decrease in Rates* of Cocaine ED Mentions from Peak Year to 1999 in CEWG Areas: DAWN ED					
CEWG Area	1994	1995	1996	1999	% Decrease
Atlanta	234	245	202	189	22.9
Baltimore	400	384	376	296	26.0

Boston	133	147	114	96	34.7
Detroit	195	212	250	178	28.8
Newark	246	268	253	172	35.8
New Orleans	164	174	203	176	13.3
New York	252	244	264	175	33.7
San Francisco	205	166	149	120	41.5
Seattle	157	116	114	130	17.2
Washington D.C.	132	96	104	81	38.6
* Per 100,000 population.					

Decreases between peak years and 1999 in rates of cocaine ED mentions were relatively small in other CEWG areas: Chicago (8.9 percent, 1997 vs. 1999); Dallas (18.9 percent, 1998 vs. 1999); Philadelphia (5.5 percent, 1998 vs. 1999), St. Louis (4.9 percent, 1994 vs. 1999); and San Diego (13.7 percent, 1996 vs. 1999).

From 1998 to 1999, estimated cocaine ED mentions decreased in 10 CEWG areas, increased in 7, and remained relatively stable in 3. The decreases were statistically significant in six CEWG areas: New York (24.3 percent), Boston (21.3 percent), Dallas (18.5 percent), Newark (16.5 percent), Washington, D.C. (15.3 percent), and New Orleans (10.7 percent). Mentions also decreased in Atlanta, Chicago, Detroit, and Philadelphia.

At the same time rates of cocaine ED mentions were decreasing in some areas, they were increasing in others. The 1999 rates, per 100,000 population, of cocaine ED mentions reached their highest level in 4 years in five CEWG areas: Denver (87), Los Angeles (79), Miami (210), Minneapolis/St. Paul (34), and Phoenix (91).

Estimated cocaine ED mentions across DAWN areas in 1999 decreased in two age categories: the 12-17 year-olds (25.4 percent) and the 26-34 year-olds (8.4 percent). Slight increases in mentions occurred in the 18-25 year-old age category (3.1 percent) and the 35 and older age category (2.6 percent). Of note is the fact that 71 percent of the 1999 cocaine ED mentions involved more than one drug, indicating that cocaine was typically used either sequentially or concurrently with other substances.

The 1998 DAWN medical examiner data also point to a downward trend in cocaine abuse; this occurred in 15 CEWG areas. Nevertheless, cocaine was the drug most frequently reported by MEs in 1998, and was mentioned in 45 percent of the drug-related death cases.

In the nine CEWG areas listed below, cocaine ranked first as a cause or contributor in drug-related deaths reported by MEs.

CEWG Areas Where Cocaine* Ranked First in Drug-Related Deaths: DAWN ME	
Area	Percent
Miami	82
Atlanta	68
Newark	60
Chicago	58
New York	55
Washington D.C.	43
New Orleans	41

St. Louis	37
Denver	37
* Detected in the percentages of decedents shown.	

In another seven CEWG areas, cocaine ranked second as a cause or contributor in drug-related deaths: Baltimore (59 percent), Philadelphia (52 percent), San Francisco (49 percent), Phoenix (45 percent), Dallas (39 percent), Boston (39 percent), and Los Angeles (37 percent).

In the 1999 ADAM data, the percentages of adult male arrestees testing positive for cocaine trended downward in 7 of the 16 sites where this population was tested: Chicago, Los Angeles, New Orleans, New York, Philadelphia, San Diego, and Seattle. The chart below illustrates the three areas with the largest percentage point decreases from 1997-99.

CEWG Areas with the Largest Decreases in Percentages of Adult Males Testing* Cocaine-Positive: ADAM			
CEWG Area	Percent Testing Positive		
	1997	1998	1999
New York	57.6	47.1	44.2
Chicago	49.0	44.9	41.7
San Diego	21.4	19.1	16.5
* Based on the Enzyme Multiplied Immunoassay Technology (EMIT).			

The percentages of adult male arrestees testing cocaine-positive increased in four CEWG areas (Dallas, Minneapolis, Philadelphia, and Washington, D.C.), and remained stable in the remaining five areas (Atlanta, Denver, Detroit, Miami, and Phoenix).

In the 13 ADAM sites where adult females were tested in 1999 (N = 5,150 in CEWG sites), the percentages testing cocaine-positive showed a different trend from that of male arrestees (N = 15,748 across CEWG sites). While the number of females tested in each site were relatively small compared with the number of males tested, the percentages of females testing cocaine-positive actually increased in six sites. The following chart shows the four sites with the largest increases.

CEWG Areas with the Largest Increases in Percentages of Adult Females Testing Cocaine-Positive: ADAM			
CEWG Area	Percent Testing Positive		
	1997	1998	1999
Dallas	34.0	29.5	40.1
Chicago	*	55.5	64.3
Phoenix	33.3	39.6	43.2
Minneapolis	*	28.6	35.8
* Females were not tested in 1997.			

Increases in the other two sites were small (2.7 and 4.6 percentage points in New Orleans and Seattle, respectively).

The percentages of adult females testing cocaine-positive remained relatively stable in five CEWG areas (Atlanta,

Denver, Detroit, Philadelphia, and San Diego) and decreased in two. The decrease was substantial in Los Angeles (12 percentage points), but relatively small in New York (3.2 percentage points).

In 13 ADAM sites where both males and females were tested in 1999, the percentages of females testing cocaine-positive exceeded those for males in all but one site (New Orleans, 2.4 percentage point difference). In four sites, the percentage point difference between females and males was small, ranging from 1 to 6.5 (Los Angeles, Dallas, San Diego, and Minneapolis). In another five sites, cocaine-positive females exceeded males by 10.4 to 18.9 percentage points (Denver, Atlanta, Phoenix, Seattle, and Detroit). The three sites with the largest percentage point differences between men and women are shown in the chart that follows.

CEWG Areas with the Largest Difference Between Female and Male Adult Arrestees Testing Cocaine-Positive: ADAM		
Area	Females	Males
Chicago	64.3	41.7
New York	65.1	44.2
Philadelphia	59.8	39.3

An increase in the availability and use of cocaine hydrochloride (HCl) was reported in 6 CEWG areas: Denver, Detroit/Wayne County, New York, New Orleans, Philadelphia, and Seattle. A slight increase in cocaine indicators was reported for Los Angeles. Seattle reported a more substantial increase in cocaine indicators after several years of decline. Indicators stabilized in St. Louis.

Cocaine is emerging as a significant problem along the Texas-Mexico border with high use seen in ADAM and school survey data. In addition, crack use in Atlanta is moving to rural areas outside the city. Indicators will continue to be closely monitored across CEWG areas for a possible resurgence of cocaine/crack abuse.

Heroin

Although heroin indicators vary across CEWG areas, they increased in 15 CEWG areas. Increases were reported in areas located in all regions of the Nation, as indicated in the examples below.

Atlanta *Heroin continues to gain in popularity.*

Baltimore *Heroin use has increased and the price of heroin has plummeted.*

Boston *After a brief period of stabilization, heroin indicators continue to rise. Primary heroin abusers now constitute the highest percentages of illicit drug treatment admissions to public programs.*

Chicago *All heroin indicators continue to increase. Publicly supported heroin treatment admissions are at the highest level in 11 years.*

Detroit *In the year 2000, there will likely be twice as many heroin-related deaths as in 1996. By year end, it is expected that there may be as many as 475 heroin deaths. The price of heroin (\$.62 per milligram in 1999) is the lowest ever.*

Miami *Heroin consequences continue a decade long increase, reaching record levels in Miami-Dade.*

Minneapolis/St. Paul *There has been an influx of low priced, high quality heroin: ED mentions and mortality rates increased in 2000.*

Newark *Heroin use is increasing in suburban areas, as is the proportion of heroin injectors (although indicators are stabilizing overall).*

New Orleans *Heroin indicators have been increasing steadily since 1995.*

Philadelphia *Heroin abuse is increasing; 280 heroin-related deaths have been reported so far in 2000. The price of heroin per milligram is only \$.31.*

Seattle *Indicators suggest a new level of endemic heroin abuse.*

St. Louis *Most heroin indicators are increasing. A steady supply of Mexican heroin is available.*

From 1998 to 1999, estimated heroin/morphine ED mentions increased overall by 4 percent across the 20 CEWG areas included in DAWN. The increases from 1998 to 1999 were statistically significant in five CEWG areas: Denver, Miami, New Orleans, St. Louis, and San Francisco. The greatest increase in heroin/morphine ED mentions occurred in the second half of 1999 when there was a 12 percent increase in heroin/morphine mentions compared with the first half of 1999.

DAWN ED data suggest-as CEWG members have reported for several years-that heroin abuse is increasing among young populations. Of particular concern are the increases in heroin/morphine ED mentions in the 18-25 year-old population. The number of ED mentions in this young adult population steadily increased across DAWN areas from 1992 (5,860) to 1999 (15,132)-an increase of 158 percent. The estimated number of heroin/morphine ED mentions in the 18-25 year old age category increased 51.4 percent from 1997 to 1999, compared with a 20.5 percent increase in the number of heroin/morphine ED mentions in the 35 and older age category.

The trend of increases in heroin abuse among younger populations continued to be reported by most CEWG members, as in the following examples:

Atlanta *The emergence of a younger cohort of heroin abusers continues to be supported by all indicators.*

Baltimore *The proportion of suburban treatment admissions age 18 to 25 for injected heroin has increased substantially, from 18 percent in 1995 to 33 percent in 1999.*

Dallas *In 1999, there were 444 heroin/morphine ED mentions; 51 percent were between the ages of 18 and 34. The price per milligram is only \$.59.*

Miami *Increases in heroin abuse among young adults are revealed in medical emergencies.*

Philadelphia *New cohorts of heroin abusers are in their early-to mid-teens.*

St. Louis *Thirty-five percent of the primary heroin treatment admissions are less than 24 years of age.*

Rates of heroin/morphine mentions per 100,000 population increased from 1998 to 1999 in 13 of the 20 CEWG areas; rates were stable in 4 areas and decreased in 3 areas. The rates of heroin/morphine ED mentions, per 100,000 population, were very high in 6 CEWG areas, ranging from 110 to 299 as shown in the table to the right:

Baltimore	299
Newark	260
San Francisco	191
Chicago	164
Seattle	128
New York	110

Heroin use indicators were stable in several areas, some with the high rates of ED mentions:

Los Angeles *Heroin use indicators are stabilizing.*

Newark *In 1999, heroin treatment admissions (N = 3,744) only varied slightly from 1998.*

New York *Heroin trends may have stabilized; heroin-involved deaths and ED emergencies have declined; however, primary heroin treatment admissions have increased over the past 8 years. The price of a milligram of heroin is relatively low (\$.52).*

San Francisco *Heroin indicators are steady at a high level. The price of a milligram is low (\$.30).*

Decreases in heroin indicators were reported from only three CEWG areas: Dallas, Honolulu, and San Diego.

Trend data from 1992 through 1999 show that the numbers and rates of heroin/morphine ED mentions stabilized in 8 CEWG areas, declined slightly in 2, and increased in 10. The chart below shows the increase in heroin/morphine mention rates for selected years in five CEWG areas with the most substantial increases.

Rates* of Heroin/Morphine ED Mentions in Five CEWG Areas by Selected Year: DAWN ED					
Area	1992	1994	1996	1998	1999
Chicago	53	85	109	159	164

Denver	8	33	22	32	41
Miami	10	15	21	41	48
New Orleans	13	17	26	44	55
St. Louis	9	18	22	27	37
* Per 100,000 population.					

The greatest increases in both the numbers and rates of heroin/morphine ED mentions were in Chicago and Miami, as shown in the chart that follows.

Numbers and Rates* of Heroin/Morphine ED Mentions in Chicago and Miami in Selected Years: DAWN ED					
Area	1992	1994	1996	1998	1999
Chicago					
Number	2,958	4,787	6,282	9,383	9,725
Rate	53	85	109	159	164
Miami					
Number	181	264	391	772	921
Rate	10	15	21	41	48
* Per 100,000 population.					

From 1992 to 1999 primary heroin treatment admissions in Chicago increased by 156 percent. Many varieties of heroin are available in Chicago, including South American, Southeast Asian, Southwest Asian, and Mexican.

The 1998 DAWN data from medical examiners show that heroin/morphine accounted for the largest percentages of drug-related mentions in eight CEWG areas:

CEWG Areas Where Heroin/Morphine* Ranked First in Drug-Related Deaths: DAWN ME	
Area	Percent
Baltimore	75
Seattle	62
Boston	55
Philadelphia	54
San Francisco	52
San Diego	49
Phoenix	45
Los Angeles	39
* Detected in the percentages of decedents shown.	

Areas with the highest number of heroin/ morphine-related deaths in 1998 were as follows:

New York	448
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Chicago	404
Philadelphia	413
Baltimore	394
Detroit	232

Trend data from the DAWN ME system from 1995-98 show substantial increases over time in the number of heroin/morphine-related deaths in the five CEWG areas listed in the chart below.

Increases in Heroin/Morphine-Related Deaths in Five CEWG Areas: DAWN ED DAWN, 1996-1H-1999				
Area	1995	1996	1997	1998
Atlanta	16	18	30	46
Detroit	107	158	224	232
Miami	24	30	38	50
New Orleans	26	38	45	62
Washington D.C.	91	93	107	117

The 1999 ADAM data show relatively high percentages of adult males and females testing positive for opiates, based on the EMIT test.

The following chart shows the eight CEWG areas in which at least 10 percent of the adult male or female arrestees tested positive for opiates (i.e., heroin, morphine, codeine, and/or a semi-synthetic narcotic), indicating they had used opiates within at least the 3 days prior to testing.

Percentage of Male and Female Adult Arrestees Testing Opiate-Positive: ADAM 1999		
Area	Females	Males
Chicago	32.4	20.1
New York	21.1	15.2
Seattle	20.3	13.9
Detroit	16.4	8.6
Philadelphia	14.2	14.8
Phoenix	11.6	7.6
New Orleans	7.0	13.5
Washington D.C.	*	16.0
* Females were not tested.		

From 1998 to 1999, opiate-positive rates for adult males remained relatively stable in 9 of the 16 areas where adult males were tested; the percentages increased in 4 and decreased in 3 areas. The percentages of opiate-positive tests increased in two areas where they had previously been very low: Atlanta (1.3 to 4.3) and Dallas (2.3 to 4.5). Comparable data from the 13 CEWG areas in which adult female arrestees were tested show a different pattern: the percentages of opiate-positives among women increased in eight CEWG areas, remained stable in three, and

decreased in two. The largest increase was in Dallas (from 2.3 to 6.7 percent).

Based on DEA's Drug Monitor Program data for January-March 2000, the purity of heroin tends to be higher in the northeast as indicated in the following chart.

CEWG Areas Where Heroin Purity is Highest	
Area	Percent Purity
Newark	76.7
Philadelphia	72.8
Boston	65.6
New York	60.2

Data sources show that heroin and cocaine are often used in combination (concurrently or sequentially). For example, it was reported that 60 percent of the heroin injectors who were admitted to treatment in Baltimore (1999) also injected cocaine. Heroin/morphine was present in 37 percent of the cocaine-positive toxicology reports (first half of 2000) in Philadelphia. In Washington, D.C. in 1999-2000, nearly three-fifths of primary heroin addicts in treatment reported cocaine/crack as a secondary drug.

Marijuana

Between 1990 and 1998, marijuana indicators increased dramatically in all CEWG areas for such reasons as the following:

- Increased availability of the drug
- Increased concentration of tetrahydrocannabinol (THC) in commercial street marijuana (from 3.7 percent in 1996 to 7 percent in 1999), as well as in sinsemilla (from 10.1 percent in 1990 to 13.1 percent in 1999), based on a DEA report (May 2000)
- Increased use of other substances in combination with marijuana, with indicators showing high proportions of marijuana abusers using at least one other drug
- Packaging forms that permit use of large quantities of marijuana at one time, e.g., in blunts (marijuana packed in cigar wrappers), a practice common in most CEWG areas

From 1990 to 1998, estimated marijuana/hashish ED mentions increased steadily across all CEWG areas, with an overall increase of 328 percent. Marijuana/hashish ED mentions across CEWG areas increased only slightly from 1998 to 1999 (2.1 percent) but the increases were significant in both the 18-25 and 35 and older age categories.

In 1999, marijuana/hashish ED mentions increased in 9 CEWG areas, decreased in 10, and remained stable in 1 (Newark). The increases were significant in three CEWG areas (Baltimore, Minneapolis/St. Paul, and Phoenix), whereas decreases were significant in three areas (Boston, New Orleans, and San Diego).

The highest rates of marijuana/hashish ED mentions, per 100,000 population, in 10 years (to 1999) occurred in 8 CEWG areas: Baltimore (72 per 100,000), Denver (43), Los Angeles (64), Miami (67), Phoenix (50), and Washington, D.C. (65). However, the highest rates of marijuana/hashish ED mentions, per 100,000 population, were in 5 different CEWG areas:

Philadelphia	114
Detroit	95
Atlanta	91
New Orleans	86

Chicago

77

The lowest rates of marijuana/hashish ED mentions in 1999 were in Minneapolis/St. Paul (26), San Francisco (29), and San Diego (38).

The DAWN ED data show that marijuana/ hashish is more likely than other illicit drugs to be used either sequentially or concurrently with other drugs. Seventy-eight percent of the 1999 marijuana/hashish ED mentions involved other drugs. The drug groups mentioned most often with marijuana/hashish are shown below.

Drug Groups Most Frequently Mentioned in Combination with Marijuana/Hashish: 1999 DAWN ED	
Drug	Number of Mentions
Alcohol-in-Combination	38,015
Cocaine	30,693
Unspecified Benzodiazepines	7,143
Amphetamines	3,325
LSD*	2,009
Methamphetamine/Speed	1,685
PCP/PCP** Combinations	1,640
* Lysergic acid diethylamide ** Phencyclidine	

All of the above drug mentions represent increases from 1990 to 1999. However, during this time period, the two drugs that increased most in combination with marijuana/hashish were hydrocodone (from 8 in 1990 to 840 in 1999) and MDMA (from 8 to 796).

In 1998, there were only 487 marijuana ME mentions in the 20 CEWG areas included in DAWN. As in the DAWN ED data, marijuana was frequently mentioned in combination with other substances. These included alcohol (36 percent of the ME marijuana mentions), cocaine (25.9 percent), and heroin/morphine (19.4 percent). The highest number of marijuana ME mentions were in Dallas (92), Detroit (61), New York (53), Philadelphia (47), and St. Louis (47).

In the 1999 ADAM data on adult males, marijuana was the drug most frequently detected in 9 of the 16 CEWG sites reporting to ADAM. The percentages of males testing positive for marijuana ranged from 32.3 percent in Los Angeles to 47.9 percent in Detroit. Female adult arrestees were less likely to test positive for marijuana; the percentages ranged from 21 percent in Los Angeles to 34.1 percent in Denver.

From 1998 to 1999, the two CEWG areas with the largest increases in marijuana-positives among adult male arrestees were Atlanta (18.4 percentage points) and Miami (7 percentage points).

Among juvenile arrestees in 1999, marijuana was the most commonly used drug by both males and females in all ADAM sites. In the CEWG sites reporting to ADAM, more than half the juvenile males and almost 40 percent of juvenile females tested positive for marijuana.

One issue raised by CEWG members is why primary marijuana treatment admissions are increasing while other marijuana indicators are decreasing or stabilizing. It was recommended that CEWG members examine this issue to determine whether referrals from drug courts and other criminal justice agencies account for treatment admission increases. It was also suggested that CEWG members determine the nature and extent of multiple drug use among primary marijuana treatment admissions. For example, in Dallas, some young marijuana abusers dip joints in embalming fluid containing phencyclidine (PCP) or in codeine cough syrup.

Methamphetamine

There are indications that methamphetamine abuse is rising after a 2-year decline, and that use of the drug continues to spread to areas outside the west coast and southeast where abuse is most concentrated:

Atlanta *Methamphetamine is becoming increasingly popular and is on the rise.*

Honolulu *Demand for methamphetamine (ice) is high and growing in Hawaii. Preliminary ADAM urinalysis results show that 40 percent of arrestees in Hawaii test positive for methamphetamine.*

Seattle *There is considerable abuse of methamphetamine outside the city.*

Other indicator data support the potential increase in and spread of methamphetamine abuse, as in the ED data cited below.

Between 1997 and 1998, the number of methamphetamine ED mentions dropped dramatically in CEWG areas, from 5,536 to 3,627. The last half of 1998 represented a 30 percent decrease compared with the first half of 1998. The first half of 1999 differed very little from the last half of 1998 (1,504 vs. 1,490), suggesting a decline in methamphetamine abuse. However, in the last half of 1999, there was an upsurge in methamphetamine ED mentions (n = 1,902) in CEWG areas, a 26.5 percent increase over the first half of 1999.

Increases in methamphetamine ED mentions in the second half of 1999 were significant in nine CEWG areas, including four on the west coast that have the highest rates of methamphetamine ED mentions (San Diego, San Francisco, Los Angeles, and Seattle). The increase also was significant in two southwest areas with high methamphetamine ED rates (Denver and Phoenix).

DAWN ME methamphetamine mentions in 1999 were concentrated in the CEWG areas with the highest rates of ED mentions (per 100,000 population): Los Angeles (111), San Diego (84), Phoenix (60), and San Francisco (45).

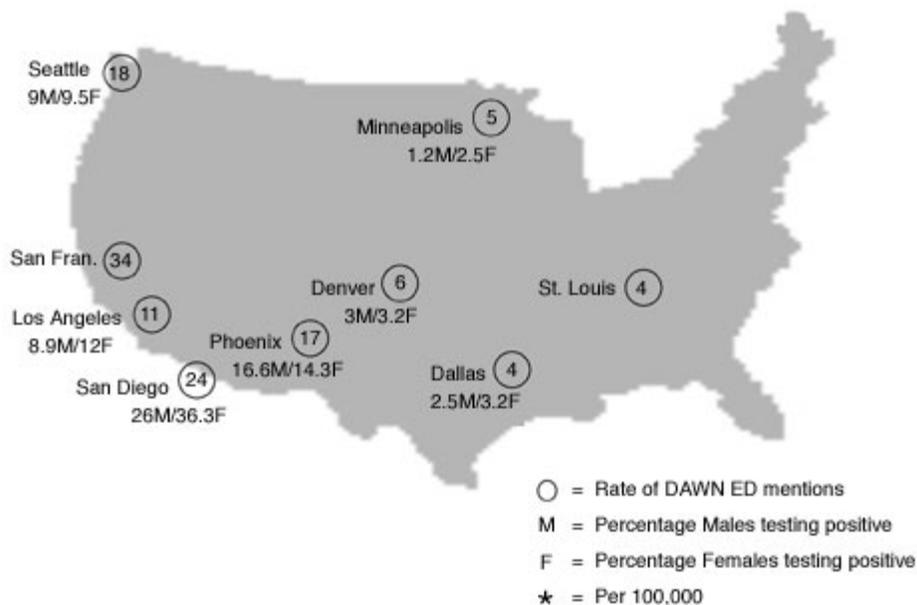
Of the CEWG areas included in ADAM, San Diego reported the highest percentage of adult male (26 percent) and female (36.3 percent) arrestees testing positive for methamphetamine in 1999 ([see map below](#)). Of even greater concern is that 15.8 percent of juvenile male and 18.2 percent of juvenile female arrestees tested positive for methamphetamine in San Diego. Among the arrestees in San Diego, 22 percent of the Hispanic juvenile males and 16.7 percent of Hispanic adult females tested positive for methamphetamine in 1999.

In 1999, only four CEWG areas reported methamphetamine rates above 3 percent for male or female arrestees, respectively: San Diego (as noted above), Phoenix (16.6 and 14.3 percent), Los Angeles (8.9 and 12 percent), and Seattle (9 and 9.5 percent).

It was reported in 11 CEWG areas that methamphetamine is used together with other drugs at raves. Ethnographers reported that Viagra is being used with methamphetamine and other drugs, sometimes with fatal consequences.

Methamphetamine indicators continue to be closely monitored in areas that have not reported serious methamphetamine use problems in the past. It was estimated that as many as 50 methamphetamine labs will be seized in Michigan in the year 2000. In the Minneapolis/St. Paul CEWG area, 119 methamphetamine labs were reportedly dismantled in the year 2000 through October.

Estimated Rates* of DAWN ED Methamphetamine Mentions and Percentages of Adult Arrestees Testing Methamphetamine-Positive by Area: 1999



MDMA (Ecstasy)

Information from a variety of sources indicates that MDMA (ecstasy) has become more available, and that use has been increasing in most CEWG areas. The price per pill or dosage unit varies slightly across CEWG sites, as in the examples below:

Dallas	\$10 - \$20 per dosage unit
Denver	\$15 - \$20 per dosage unit
New York	\$20 - \$25 per pill
Phoenix	\$20 - \$40 per pill
Seattle	\$15 - \$30 per tablet

Recent surveys conducted in Massachusetts and Seattle shows that lifetime ecstasy use is increasing in young populations. The Massachusetts school survey shows that ecstasy use increased sharply among high school students, from 6 percent in 1996 to 15 percent in 1999.

A survey of patients in the Stonewall Recovery Services Program in Seattle, conducted from February to July 2000, showed that 44 percent of the younger patients (age 14 to 24) and 43 percent of the patients age 25 and older had used ecstasy at some point in their lives.

It was reported in 17 CEWG areas that ecstasy use has become more widespread, and that the drug is being used in settings other than night-clubs and rave dance parties.

Atlanta *Ethnographic studies point to the popularity of MDMA among a wide variety of age groups and in a number of social settings. Ecstasy use is hidden in suburban areas.*

Baltimore *Ecstasy use emerged in mid-1999 and has increased dramatically. At \$25-\$30 a pill, use is reported at dance clubs, raves, and by individuals 'just hanging out.' It is used to relieve depression and to enhance sexual feelings. It is widely believed by users that ecstasy pills contain drugs such as heroin, cocaine, or speed*

Boston *Ecstasy use has moved outside the rave, dance, and club scenes and is used by adolescents in other settings. In 1999, the Drug Analysis Lab reported 342 MDMA submissions in Massachusetts, compared with only 20 in 1997. In the first 3 quarters of 2000, MDMA was the most frequently mentioned drug in telephone calls to the Poison Control Center in Boston.*

Chicago Ecstasy is the most prominent stimulant used in Chicago. It is now more available in mainstream dance clubs and house parties.

Denver In addition to being readily available in the rave scene, ecstasy is being sold in many singles bars in the Denver metropolitan area.

Detroit Use of MDMA (and MDA) is diffusing outside the rave scene.

Miami Ecstasy use has increased dramatically, particularly among teenagers and young adults. In 1999, there were eight MDMA-related deaths in Miami/Dade County.

Minneapolis/St. Paul Five recent deaths were associated with ecstasy use.

New Orleans Substantial quantities of ecstasy have been confiscated by police narcotics units in two nearby Parishes-East Baton Rouge and Lafayette. Three rave bars have been opened near Louisiana State University.

New York Most ecstasy dealing and use takes place in nightclubs, but use also is being reported in locations throughout the city. Use is increasing: the Street Studies Unit continues to report ecstasy use in several areas of the city.

Philadelphia Feedback from focus groups indicates that ecstasy is used by white college-age young adults and typical club-goers in their 20s.

San Diego Use of ecstasy has increased in San Diego.

San Francisco According to street observers, MDMA use is increasing, especially among young people between 15 and 25 years of age.

Seattle The use of club drugs such as ecstasy appears to be widespread in normal recreational and social settings.

St. Louis Ecstasy is freely available in the rave scene. There is sporadic use of ecstasy in urban areas and use is increasing in rural areas. Ecstasy is now more available in high schools.

Texas Ecstasy is more prevalent and treatment admissions have increased.

Washington D.C. MDMA has become a 'drug of choice' among white middle class young adults in the District and surrounding areas. There is a wide range of users including high school and college students and adults. MDMA is used in combination with a variety of other drugs. Recently, 8,000 ecstasy pills were confiscated in nearby Prince Georges County, Maryland.

DAWN 1999 data show that MDMA is used by many marijuana users. ED mentions of MDMA in combination with marijuana/hashish increased from 8 in 1990 to 796 in 1999.

Emerging Drugs

Indicator data show that several controlled narcotics are being abused by greater numbers of people in CEWG areas. These include hydrocodone (e.g., Lorcet, Lortab, Vicodin), hydromorphone (e.g., Dilaudid), and oxycodone (e.g., Percodan, Percocet). Abuse of clonazepam, a benzodiazepine, is increasing also.

Increases in three emerging drugs are revealed in the DAWN ED data, as shown below. The largest increase from 1993-99 is for hydrocodone (189 percent).

Increases in ED Mentions of Hydrocodone, Oxycodone, and Clonazepam: DAWN ED				
Drug	1993	1995	1997	1999
Oxycodone	3,395	3,393	4,857	6,429
Clonazepam	10,175	12,802	14,597	16,584

These drugs are among those increasingly used in combination with marijuana/hashish; the percentage increase from 1990 to 1999 is presented in the following chart.

Increases Between 1990 and 1999 in Selected Drugs Used in Combination with Marijuana/Hashish: DAWN ED		
Drug	Mentions 1990	Mentions 1999
Hydrocodone	8	840
Oxycodone	12	435
Hydromorphone	12	212
Clonazepam	78	407

Abuse of one or more of these drugs was reported in five CEWG areas:

New Orleans *Hydromorphone continues to be widely abused in New Orleans. Hydromorphone ED mentions increased from 97 in 1997 to 122 in 1998 to 137 in 1999. The DEA also reports that hydrocodone (Vicodin), oxycodone (Percodan), and propoxyphene (Darvon) remain drugs of choice among heroin abusers.*

Phoenix *Hydrocodone deaths continue an upward trend.*

St. Louis *Hydromorphone use is common among a small, chronic population of white addicts. It costs \$45 to \$75 per 4 milligram pill. Abuse of oxycodone by prescription (Percodan, Percocet) is popular also.*

Texas *According to the DEA, hydrocodone and hydromorphone were commonly abused controlled substances in Dallas. Commonly abused drugs in Houston include hydrocodone, promethazine with codeine, and carisoprodol.*

Washington D.C. *Hydromorphone and oxycodone pills are substituted for heroin by heroin abusers. Hydromorphone pills sell for \$20 each. Oxycodone pills are available near methadone clinics and sell for \$5 each.*

International Highlights

Canada

The Canadian Community Epidemiology Network on Drug Use (CCENDU), established in 1995 and modeled on the CEWG, continues to coordinate and facilitate the collection, organization, and dissemination of quantitative and qualitative information on substance abuse. Currently, 11 sites participate in the CCENDU and 3 others are in development. In recent years, funding limitations have hindered the conduct of surveys and accessing and reporting data.

Findings from a sample of CCENDU sites show that alcohol continues to be the major substance abuse problem in Canada. However, use of illicit drugs has been increasing. Cocaine/crack use is one-third lower than in the United States. Increases in numbers of AIDS (acquired immunodeficiency syndrome) cases and cases of other communicable diseases associated with injection drug use have decreased in Canada. At the same time, cases of hepatitis C are rising, raising in-creased concern because of the long latency period of the disease.

Ecstasy is a recurring theme in all CCENDU sites, and reportedly is increasing in Calgary where the economy is "booming." Children as young as 12 are said to be using ecstasy. Cocaine/crack indicators also have been increasing in Calgary. Ecstasy use is reportedly increasing in Winnipeg also, where alcohol is the most commonly abused substance and marijuana is the major drug of concern. Alcohol and marijuana use (particularly among youth) are also a major concern in St. Johns.

In Vancouver, drug abuse continues to be a major public health problem. The drug epidemic is centered in the city's downtown Eastside area where there are high rates of overdose deaths and HIV (human immunodeficiency virus)

associated with injection of heroin and cocaine. Over the past several years, about 2,000 cases of hepatitis C have been reported each year in Vancouver and Richmond. Currently, 3,403 patients are in treatment in methadone clinics in Vancouver, and 2,160 patients are being treated by private practitioners. Between 1995 and 1999, the number of cocaine offenses in Vancouver increased from 746 to 1,044, and heroin offenses increased from 201 to 302. However, marijuana offenses decreased from 503 in 1995 to 262 in 1999. The Royal Canadian Mounted Police have increased efforts to "crack down" on the 8,000 marijuana-growing operations in British Columbia.

In Toronto, cocaine use among the adult population remains low but is increasing among youth, based on 1999 surveys. In 1999, 6.4 percent of students reported use of cocaine, compared with 2.7 percent in 1997. Injection of cocaine/crack has become a major problem in Toronto and rates of hepatitis C have been soaring. In the 1999 Toronto adult household survey, about 10 percent of the respondents said they had used marijuana during the past year. The school surveys show that marijuana use among students increased from 9 percent in 1993 to 19 percent in 1997 and to 26 percent in 1999. Requests for treatment of marijuana abuse rose dramatically in the late 1990s and have remained high.

Seven percent of the Toronto students in 1999 reported using (lifetime) methamphetamine, and there were 30 methamphetamine seizures in the area. Increases in methamphetamine-related treatment requests also occurred in 1999.

The Toronto school survey also shows an increase in ecstasy use—from 3 percent in 1995 to 9 percent in 1999. In 1999, there were 99 ecstasy admissions to the city's (St. Michael's) ER, another 10 just outside the city, and 27 in suburban areas. Steps are being taken to increase awareness of problems associated with ecstasy use and to prevent use of the drug.

Malaysia

Abuse of amphetamine-type substances (ATS), especially methamphetamine, is increasing in Malaysia, as in other parts of the world. In a study of methamphetamine users in Penang, Malaysia, researchers from the Universiti Sains Malaysia and the National Narcotics Agency interviewed a sample of 70 ATS-positive arrestees using a questionnaire developed by NIDA. Most (92.9 percent) of the study subjects were male and Chinese (87.1 percent). Almost 29 percent were between the ages of 12 and 20 and nearly three-quarters were employed. Close to 60 percent had been using ATS during the 2 months prior to interview. Slightly more than three-quarters used ATS two to three times a day and most (85.7 percent) had a friend who used ATS. Reportedly ATS is popular in the "night scene." Arrestees reported that ATS made them feel happy, relaxed, and full of energy, and able to temporarily forget their problems. The ATS pill is typically mixed in a drink. ATS is reportedly easy to purchase. The average quality pill costs between RM30 to RM40 (U.S. \$1 is RM 3.80). Subjects claim that quality is lower than when ATS was first introduced.

Mexico

Data from a series of studies conducted in El Paso and Juarez, Mexico are being analyzed to produce information needed to develop more appropriate prevention and treatment interventions relevant to heroin abuse.

The data were collected from April to November 2000 through surveys, surveillance information systems, ethnographic interviews, and focus groups. Interviews with heroin abusers were conducted in jails (n = 1,158), arrest facilities (n = 1,235), and treatment centers (n = 979). In addition, interviews with heroin abusers were conducted in communities (n = 75) and with key informants (n = 54). Thirty-two in depth interviews were also completed.

Preliminary findings show that relatively high proportions of jail inmates (25.1 percent), arrestees (30.7 percent) and treatment patients (34.4 percent) were daily abusers of heroin. More than 30 percent of the inmates, 49 percent of the arrestees, and 45 percent of the treatment patients had survived at least one heroin overdose. Multiple drug use was common. Substances used most often in combination with heroin were "pills" (e.g., Rohypnol), alcohol, and both pills and alcohol together.

Thailand

Trend data show dramatic increases in the abuse of amphetamine-type stimulants in Thailand. Manufacturing of ATS and retail markets have expanded extensively. Most illicit ATS tablets contain a combination of ephedrine, caffeine, and methamphetamine.

In 1999, 64,232 clients were enrolled in drug abuse treatment programs in Thailand; 42.2 percent were new clients. Trend data on new treatment clients show that only 2.6 percent of the new clients in 1990 reported an ATS as their principal drug compared with 57.4 percent in 1999. The proportion of new ATS female clients increased from 1.9 percent in 1990 to 7.3 percent in 1999, and the mean age of these clients dropped from about 28 to 20. Most clients (96.9 percent) inhaled the drug.

Law enforcement statistics show a similar trend. The percentages of drug-offense indictments related to ATS increased from 14.1 percent in 1995 to 73.9 percent in 1999. Indictments for ATS distribution were increasing dramatically among women age 40 and older.

Data from a random sample of secondary school students in 1999 show that 6.5 percent had ever used an ATS and another 0.6 percent had only sold ATS. Among the ATS student users, 53 percent had used an ATS during the 6 months prior to the survey and 21.9 percent had used an ATS 20 or more days during the 30 days prior to survey.

As ATS abuse indicators have been increasing in Thailand, heroin, opium, and other narcotics indicators have been decreasing. For example, among new treatment clients, those reporting heroin/opiates as their principal drug decreased from 90.8 percent in 1995 to 55.8 percent in 1999. Indictments for heroin/opium decreased from 30.8 percent of drug offenses in 1995 to 5.3 percent in 1999.

United Nations Drug Control Programme

Through its "Subregional Development of Institutional Capacity for Demand Reduction Among High Risk Groups" project, the UNDCP is helping six East Asian countries (Cambodia, China, Laos, Myanmar (Burma), Thailand, and Vietnam) better identify and assess risks for drug abuse in their populations, and develop model interventions. Activities in 1999-2000 in 30 cities included development and training on assessment methods and tools. Assessments are well underway and model interventions are being prepared. Observed drug abuse trends include the expanding use of amphetamine-type stimulants, increasing use of heroin in China, Myanmar, and Vietnam, declining opium use, and country-specific increases in drug related transmission of HIV.

National Drug Intelligence Center

A report (National Drug Threat Assessment 2001) on current and emerging drug trends includes data collected from 950 law enforcement sources at the State and local levels. Concern about MDMA was raised by law enforcement officials in the following areas:

Los Angeles Police Dept. *MDMA and GHB have moved to open air street sales.*

Phoenix Police Dept. *MDMA trafficking organizations are becoming more sophisticated and more organized.*

Fairfax Co. Virginia Police Dept. *MDMA seizures increased from 200 dosage units in 1998 to over 30,000 in 1999.*

DEA Field Division *The availability of tablets containing both heroin and MDMA was reported in Chicago, Miami, New Orleans, and Philadelphia.*

NIDA Grantee Research

Cost Effectiveness of Maintenance Therapies

A dynamic epidemic model developed by researchers at Palo Alto Veterans Affairs Health System and Stanford University, was used to determine the cost-effectiveness of methadone maintenance (MM), and buprenorphine treatment. Both studies considered the effects of the specific treatment on health care costs and survival, measured as quality adjusted life years (QALYs), and communities with HIV prevalence among injection drug users (IDUs) of 5 to 40 percent. The results showed that additional MM capacity would be cost-effective even if it were twice as expensive and half as effective as current MM slots. The model results for buprenorphine showed that this maintenance therapy for opiate addiction is cost-effective at \$5 or less per dose, and would be cost-effective at \$15

per dose if its adoption did not lead to a net decline in methadone use, or if a medium to high value were assigned to life lived by IDUs and those in maintenance therapy.

Cost Effectiveness of HIV Vaccines

Researchers from the Veterans Affairs Health Care System, Stanford University, and Sandia National Laboratories, Livermore, California, used mathematical and economic modeling to evaluate the benefits and costs of potential preventive and therapeutic HIV vaccines. Injection drug users would be one of the populations targeted. Vaccines were evaluated with a wide range of efficacy and duration of action. The research showed that vaccines of even limited efficacy (less than 50 percent) can provide enormous health benefits, and are likely to result in cost savings.

Ethnographic Studies (San Francisco)

Preliminary findings were presented from four NIDA-supported qualitative studies:

- An observational case study of 25 homeless male heroin injectors, 40 to 50 years of age, and their associates. The research shows differences by racial/ethnic group in hustling methods, the substances/combinations used, reasons for using drugs, how drugs are administered, and health consequences (i.e., abscesses).
- An ethnographic study of 120 heroin abusers age 18 to 25, focused on their beliefs, behaviors (including substances used), and other factors associated with overdosing. The research shows that abusers who tend to use combinations of substances are generally misinformed about the reasons for over-dosing, what they can do to lower their risk of overdosing, and actions to take if they do overdose.
- A study (interviews and observations) of injection drug users designed to identify risk factors associated with soft tissue infections (a "hidden epidemic"). Information will be used to develop primary and secondary pre-vention measures, and improve acceptance of and access to appropriate treatment services.
- A study (75 in depth interviews) of gay Hispanic men to assess their HIV risk behaviors. A variety of drugs are used in combination by these men including methamphetamine and other stimulants (for sex with strangers), Viagra (to improve sex performance), marijuana (to take the edge off), and depressants (to sleep).

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