# Decline in the Use of Illicit Drugs by High School Students in New York State: A Comparison with National Data

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## ABSTRACT

A school-based epidemiological survey of the use of drugs was carried out in Spring 1988 among 7,611 adolescents representative of students in grades 7 through 12 in New York State public and private schools. This survey provides the most recent data on the use of crack in that population. Comparison with a statewide survey carried out five years earlier reveals a large decline in the use of illicit drugs in that period. This decline appears to be stronger than the decline reported for national samples. (*Am J Public Health.* 1991;81:1064–1067)

## Introduction

National epidemiological surveys[1,2] document a decrease in the use of illicit drugs starting in 1980 for marijuana and in the mid-1980s for cocaine. We report results from a 1988 survey of high school students in New York State (NYS) which reveals large declines in the use of illicit drugs over five years. The decline appears to be stronger in the Northeast than in the United States as a whole and sharper in NYS than in the entire Northeast.

## Methods

A statewide epidemiological survey of the use of alcoholic beverages, cigarettes, marijuana, cocaine, crack, and other illicit drugs was conducted among 7,611 students in grades 7 through 12 in NYS in Spring 1988.

The two-stage random sample represents junior and senior high school students attending NYS public and private schools. A stratified sample of 54 schools and two homerooms from each grade per school was selected. The four stratification criteria for school selection were: 1) geographical area; 2) proportion White enrollment; 3) public versus private; 4) size of enrollment. Active or passive parental consent for the child's participation was obtained, as required by individual schools. A school in New York City was dropped because only 10 percent of parental consent forms were returned. Students answered anonymous self-administered structured questionnaires in classrooms (84 percent completion rate). The sample was weighted to reflect the variable probabilities of selection of schools and homerooms and the grade-specific absentee rate in each school; 95 percent confidence intervals were calculated using empirical standard errors from 10 random subsamples drawn from the total sample. For grade-specific rates, the standard error was estimated by multiplying the standard error, assuming simple random sampling, by the average design effect (1.53).

## Results

### Prevalence of Student Drug Use

The rates of use follow patterns reported by others,[4,5] but probably underestimate drug use among adolescents in the population, since school absentees and dropouts were not included (Table 1).[6–9]

### Trends Over Time

In 1983, the NYS Division of Substance Abuse Services (DSAS) surveyed a representative sample of students in grades 7 to 12 from 206 public and private schools selected from a stratified sample of health service areas.[3] Structured self-administered questionnaires were given in classrooms. (Completion rates are not provided.).

Comparison of rates in 1983 and 1988 reveals sizable declines of at least 50 percent over five years in the use of almost every illicit drug, but no change in alcohol use (Table 1).

### Comparison with National Data

The declines in NYS schools are striking and parallel those reported nationally for high school seniors in the Monitoring the Future (MF) study by Johnston, et al.[1] and for adolescents ages 12 to 17 in the population reported in the National Household Survey (NHS)[2] (Table 2). [Lower rates are reported in the household (NHS) than the school (NYS) survey,[10] and may reflect in part differences in mode of survey administration.] This decline may be greater in NYS and the Northeast than nationally. Over two years, the prevalence of cocaine use reported by high school seniors declined by 43 percent in the Northeast (23 percent in

**TABLE 1—Lifetime Prevalence Rates of the Use of Various Drugs among 7th through 12th Grade Students in New York State in 1988 and 1983 and by Grade in 1988 (95% Confidence Intervals)**

| | Alcohol % (CI) | Cigarettes % (CI) | Marijuana % (CI) | Stimulants % (CI) | Inhalants % (CI) | Any Cocaine % (CI) | Crack % (CI) | Psyche-delics % (CI) | Sedatives % (CI) | Tranquiliz-ers % (CI) | Heroin % (CI) | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **All 7th–12th Graders** | | | | | | | |
| NYS 1988 | 84.4 (1.5) | 57.7 (2.2) | 27.5 (1.3) | 11.1 (0.8) | 6.3 (0.6) | 5.9 (0.5) | 1.9 (0.4) | 4.8 (0.7) | 4.1 (0.7) | 3.6 (0.4) | 1.4 (0.4) | (7,611) |
| NYS 1983[a] | 83 | N/A | 46 | 25 | 22 | 14 | N/A | 10 | 12 | 12 | 3 | (27,414) |
| | | | | | **Grade-Specific NYS 1988** | | | | | | | |
| 7th grade | 66.1 (4.2) | 36.0 (4.2) | 3.7 (1.7) | 1.7 (1.1) | 2.8 (1.5) | 1.5 (1.1) | .8 (0.8) | 1.1 (0.9) | .9 (0.8) | 1.0 (0.9) | 1.1 (0.9) | (1,210) |
| 8th grade | 78.2 (3.7) | 51.9 (4.5) | 12.2 (3.0) | 2.8 (1.5) | 4.4 (1.9) | 1.8 (1.2) | .7 (0.8) | 2.2 (1.3) | 1.6 (1.1) | 2.0 (1.3) | .6 (0.7) | (1,149) |
| 9th grade | 84.5 (3.0) | 58.6 (4.0) | 24.3 (3.5) | 11.2 (2.6) | 6.0 (2.0) | 4.2 (1.6) | 2.3 (1.2) | 4.6 (1.7) | 4.4 (1.7) | 4.8 (1.8) | 2.2 (1.2) | (1,387) |
| 10th grade | 88.7 (2.6) | 61.1 (4.0) | 30.1 (3.8) | 14.1 (2.9) | 6.7 (2.1) | 5.4 (1.9) | 1.9 (1.1) | 5.4 (1.9) | 4.7 (1.8) | 3.8 (1.6) | 1.1 (0.9) | (1,361) |
| 11th grade | 93.0 (2.1) | 66.4 (3.9) | 42.8 (4.1) | 16.8 (3.1) | 8.1 (2.3) | 8.5 (2.3) | 2.1 (1.2) | 5.7 (1.9) | 5.6 (1.9) | 4.2 (1.7) | 1.6 (1.0) | (1,348) |
| 12th grade | 94.7 (2.0) | 70.9 (4.1) | 50.9 (4.5) | 18.8 (3.5) | 9.7 (2.7) | 14.0 (3.1) | 3.3 (1.6) | 9.6 (2.7) | 7.4 (2.4) | 5.5 (2.1) | 1.8 (1.2) | (1,156) |

N/A = Not ascertained. Cigarettes use ascertained for last month not lifetime.
[a]Source: DSAS, 1984.[3] Confidence intervals not available.

1986 versus 13 percent in 1988[1,11]), compared to 28 percent nationally (17 percent versus 12 percent). We compared the changes in rates in NYS over comparable periods in MF (1983–1988) and NHS (1982–88) (Table 3). For NYS, we calculated odds ratios for 11th–12th graders, since separate 1983 data for the 12th grade were not available.

The odds ratios are consistently and significantly higher in NYS than in the na-tion, except for sedatives and tranquilizers. In MF, the ratios are slightly higher in the Northeast than in the total sample and significantly different for marijuana, co-caine and stimulants.

## Discussion and Conclusion

The decline in drug use appears to be sharper in areas where rates were initially the highest. This differential decline may be explained by changes in the age struc-ture of the US population, peer influence processes, and the relative commitment of youth to substance use in areas with high compared to low use prevalence. Sub-stance use is most prevalent in the late teens and early twenties.[2,5] The down-ward trend in illicit drug use prevalence from 1980 to 1988 parallels the decline in the ratio of youths (aged 15–24) to the pa-rental generation (aged 34–44) between

**TABLE 2—Comparisons of Prevalence Rates of Lifetime Drug Use among High School Seniors in Monitoring the Future in 1988 and 1983 Nationally and in the Northeast and among 12- to 17-Year-Olds in 1988 and 1982 in the National Household Survey**

| | Alcohol % (CI) | Cigarettes % (CI) | Marijuana % (CI) | Stimulants % (CI) | Inhalants % (CI) | Any Cocaine % (CI) | Crack % (CI) | Psyche-delics % (CI) | Sedatives % (CI) | Tranquiliz-ers % (CI) | Heroin % (CI) | N |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | **Monitoring the Future** | | | | | | | |
| 12th Grade | | | | | | | | | | | | |
| 88 National[a] | 92.0 (1.5) | 66.4 (1.7) | 47.2 (2.1) | 19.8 (1.5) | 16.7 (1.3) | 12.1 (1.2) | 4.8 (0.7) | 8.9 (1.0) | 7.8 (1.0) | 9.4 (1.1) | 1.1 (0.3) | (16,796) |
| 83 National[b] | 92.6 (1.3) | 70.6 (1.5) | 57.0 (2.1) | 26.9 (1.5) | 18.2 (1.2) | 16.2 (1.4) | N/A | 11.9 (1.0) | 14.4 (1.3) | 13.3 (1.3) | 1.2 (0.3) | (16,300) |
| 88 North-east[a] | 93.9 | 66.6 | 49.6 | 16.5 | 15.3 | 13.2 | 3.8 | 9.3 | 7.7 | 6.1 | 1.0 | (3,348) |
| 83 North-east[b] | 95.4 | 72.9 | 63.7 | 26.9 | 13.0 | 20.5 | N/A | 14.0 | 12.4 | 12.3 | 1.1 | (4,056) |
| | | | | | **National Household Survey** | | | | | | | |
| 12–17 year olds | | | | | | | | | | | | |
| 88 National[d] | 50.2 (5.7) | 42.3 (4.2) | 17.4 (4.1) | 4.2 (2.1) | 8.8 (2.1) | 3.4 (1.7) | .9 (0.8) | 3.5 (1.5) | 2.4 (1.8) | 2.0 (1.5) | .6 (0.5) | (3,095) |
| 82 National[c] | 65.2 (3.0) | 49.5 (3.1) | 26.7 (2.7) | 6.7 (1.6) | N/A | 6.5 (1.6) | N/A | 5.2 (1.4) | 5.8 (1.5) | 4.9 (1.4) | <.5 | (1,581) |
| 88 North-east[d] | | | 17.3 | | | | | | | | | (568) |
| 82 North-east[c] | | | 31.0 | | | | | | | | | (337) |

N/A = Not ascertained.
Sources: [a]Monitoring the Future 1988[1]—12th graders. Standard errors not available for Northeast.
[b]Monitoring the Future 1983[10]—12th graders. Standard errors not available for Northeast.
[c]National Household Survey 1982[11]—12–17 year olds. Northeast data not presented for age specific groups, except marijuana; standard errors not available.
[d]National Household Survey 1988[2]—12–17 year olds. Northeast data not presented for age specific groups, except marijuana; standard errors not available.

**TABLE 3—Odds Ratios for Changes in Rates of Lifetime Drug Use Over a 5-Year Period among Adolescents in National Samples, the Northeast and New York State from 1983 (or 1982) to 1988 Odds Ratios**

| | Any Alcohol % (S.E.) | Cigarettes % (S.E.) | Marijuana % (S.E.) | Stimulants % (S.E.) | Inhalants % (S.E.) | Any Cocaine % (S.E.) | Psychedelics % (S.E.) | Sedatives % (S.E.) | Tranquilizers % (S.E.) |
|---|---|---|---|---|---|---|---|---|---|
| **Monitoring the Future[a]** | | | | | | | | | |
| 12th graders (1983–1988) | | | | | | | | | |
| National | 1.1 (.05) | 1.2 (.03) | 1.5 (.03) | 1.5 (.09) | 0.8 (.02) | 1.4 (.04) | 1.4 (.05) | 2.0 (.07) | 1.5 (.05) |
| Northeast | 1.4 (.15) | 1.4 (.07) | 1.8 (.09) | 1.9 (.11) | 0.8 (.05) | 1.7 (.11) | 1.6 (.12) | 1.7 (.14) | 1.3 (.11) |
| **National Household Survey[b]** | | | | | | | | | |
| (12–17 years old) (1982–1988) | | | | | | | | | |
| National | 1.9 (.12) | 1.3 (.08) | 1.7 (.13) | 1.6 (.22) | N/A | 2.0 (.28) | 1.5 (.22) | 2.5 (.40) | 2.5 (.43) |
| Northeast | N/A | N/A | 2.2 (.36) | N/A | N/A | N/A | N/A | N/A | N/A |
| **New York State[c] (1983–1988)** | | | | | | | | | |
| 7th–12th graders | .9 (.03) | N/A | 2.2 (.06) | 2.7 (.11) | 4.2 (.21) | 2.6 (.13) | 2.2 (.13) | 3.2 (.19) | 3.6 (.23) |
| 11th–12th graders | N/A | N/A | 2.1 (.10) | 2.7 (.15) | 2.3 (.18) | 2.1 (.15) | 2.3 (.19) | 2.2 (.19) | 1.2 (.12) |

N/A = Data not available in published reports.
Sources: [a]Johnston, O'Malley, and Bachman.[10,1]
[b]Miller et al,[11]; NIDA.[2]
[c]DSAS[3]; present study.

the early and late 1980s, from 1.7 to 1.1. (The upward trend in prevalence from 1960 to 1980 paralleled the upward trend in the ratio of youths to adults.) Fewer members in one's age cohort and smaller relative cohort size will reduce opportunities for social interactions with one's peers, a most important factor in drug use initiation,[14] and increase social control by the older generation.[15,16] Perceived risks and disapproval associated with illicit drug use have increased.[17,18] Although changes in relative cohort sizes are almost identical in NYS and the US, the sharper decline in drug use prevalence in NYS could be accounted for by the structural factor, if changes in individual behavior depend not only on opportunities for peer interactions but on group norms and drug users' characteristics. The rate of decline in drug use may follow a reverse diffusion process characteristic of epidemics, and may accelerate as a function of the number of individuals initially exposed, especially if proscriptive norms also become more negative and individuals at risk for drug involvement are less deviant. In areas with high prevalence of drug use, less deviant youths will be drawn into drug use, mainly through peer influence. The high use areas would show more rapid decline in prevalence than areas with low prevalence, where the pool of existing and potential users would include individuals more committed to drugs.

The decrease in lifetime drug use observed among NYS students cannot be attributed to an increase in school dropout rates by drug-using adolescents, thereby leaving in schools an increasing number of non-drug users, since the dropout rate has been declining.[15]

These epidemiological data contrast with data on treated or clinical cases, which have shown dramatic increases throughout the 1980s,[20] although recent data on cocaine-related emergency room admissions show declines.[21] There may be a time-lag between initiating drug use and experiencing drug-related problems; smoked cocaine now accounts for a large part of clinical cases.

The most extreme forms of drug use may be concentrated in disorganized communities that are not well represented in school or household samples. Whether the situation in these communities has deteriorated over the last decade is not known. We may be moving toward an increasingly polarized society, in which drug involvement is another dimension, besides lower economic and social resources and higher social pathologies,[22] on which groups are divided and the gap between them is becoming greater.[22,23] There would be youths in school and mainstream society, who have decreased their drug use, and those in urban ghettos and out of school, who have increased their use.[24] Strengthening the educational system and youth's investment in their schooling and future may be a most promising way of reducing involvement in such activities as drug use, which are destructive for self and society. □

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# Surveillance of Attempted Suicide among Adolescents in Oregon, 1988

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## ABSTRACT

In January 1988, Oregon became the first state to require hospital-based reporting of attempted suicide (AS) in all adolescents < 18 years old. From January to December 1988, 644 cases of AS were reported (annual rate of 214 per 100 000 population, ages 10 to 17 years). We compared these 644 cases of AS with all 137 Oregon adolescents < 18 years old who committed suicide in Oregon during the 10-year period 1979 through 1988, and found that the strongest predictor of outcome was method used. (*Am J Public Health.* 1991;81:1067–1069)

## Introduction

Nationally, suicide is the third leading cause of death among adolescents and young adults.[1] For each completed suicide, 30 to 200 suicides are attempted, but not completed.[2–6] Ten percent of adolescents who attempt suicide make further attempts within 1 year, and 31% do so within 2 years.[7,8]

In Oregon, suicide among teenagers is second only to motor vehicle injuries as a cause of death, accounting for 16% of deaths in Oregonians ages 13 to 19.[9,10] In 1987 the Oregon legislature mandated the reporting of all attempted suicides among persons younger than 18 years. This paper summarizes the first year (1988) of information from this surveillance system and compares the characteristics of adolescents who attempted suicide in 1988 with those who completed suicide in Oregon during the 10-year period 1979 to 1988.

## Methods

Beginning January 1988, each Oregon hospital (n = 70) was required to report to the Oregon Health Division information on all adolescents younger than 18

years who attempted suicide. An attempted suicide was defined as self-inflicted injury or condition specified by the medical provider as having fatal intent, treated at a hospital or a hospital emergency department.

Information collected by the hospital included demographics, date and place of attempt, family living situation, history of previous suicide attempts, use of alcohol, results of blood alcohol testing if done, and method of attempt. This information, without name identifiers, was sent monthly to the Health Division.

For comparison, state death certificates and medical examiner's reports were used to identify all Oregon adoles-

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