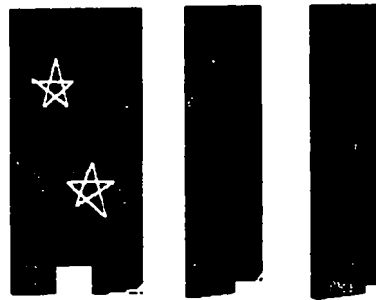




Partnership for a Drug-Free America

In 1962

**Fewer than 4 million Americans had
ever tried illegal drugs**

By 1992

**Almost 80 million Americans had
tried illegal drugs**

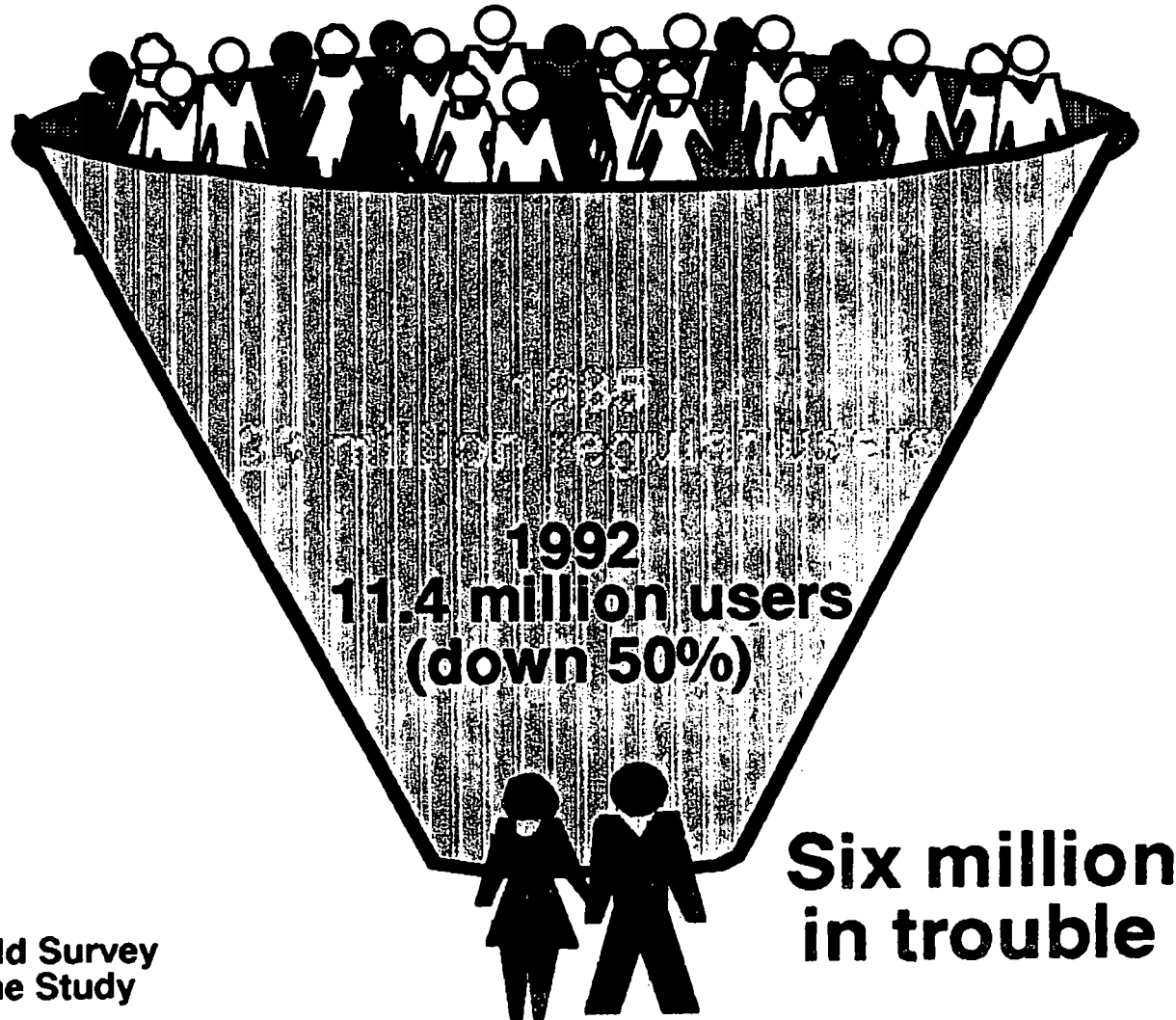
**As a nation we "normalized" the
use of illegal drugs**

THE GOOD NEWS

**A profound cultural shift has occurred --
America is turning off drugs**

- **Attitudes are significantly more anti-drug**
- **Usage declines are dramatic**

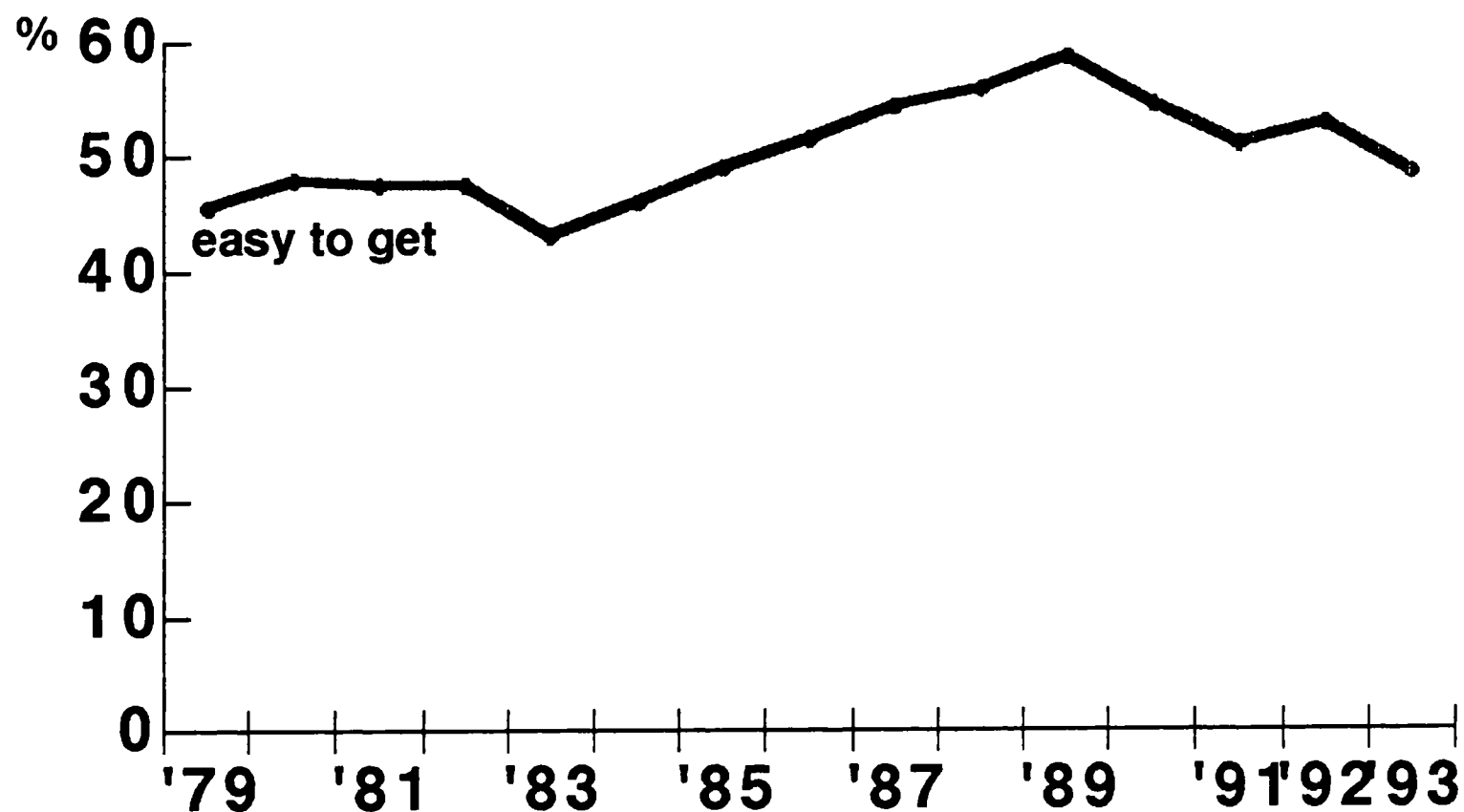
Almost 80 million Americans have used illegal drugs



Sources:
SAMHSA Household Survey
Institute of Medicine Study

Cocaine

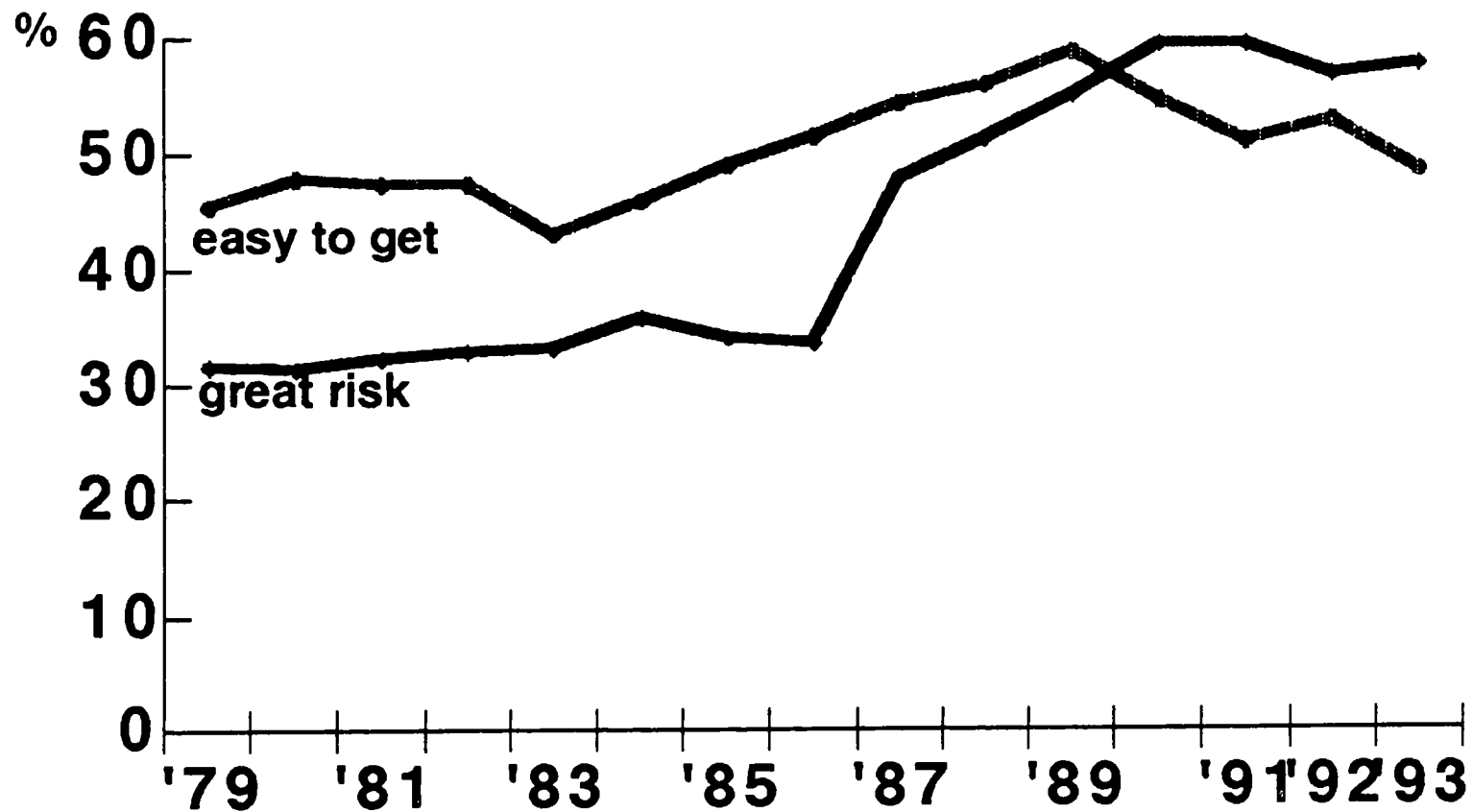
Perception of availability/risk/approval



Source: Univ. Michigan H.S. Seniors

Cocaine

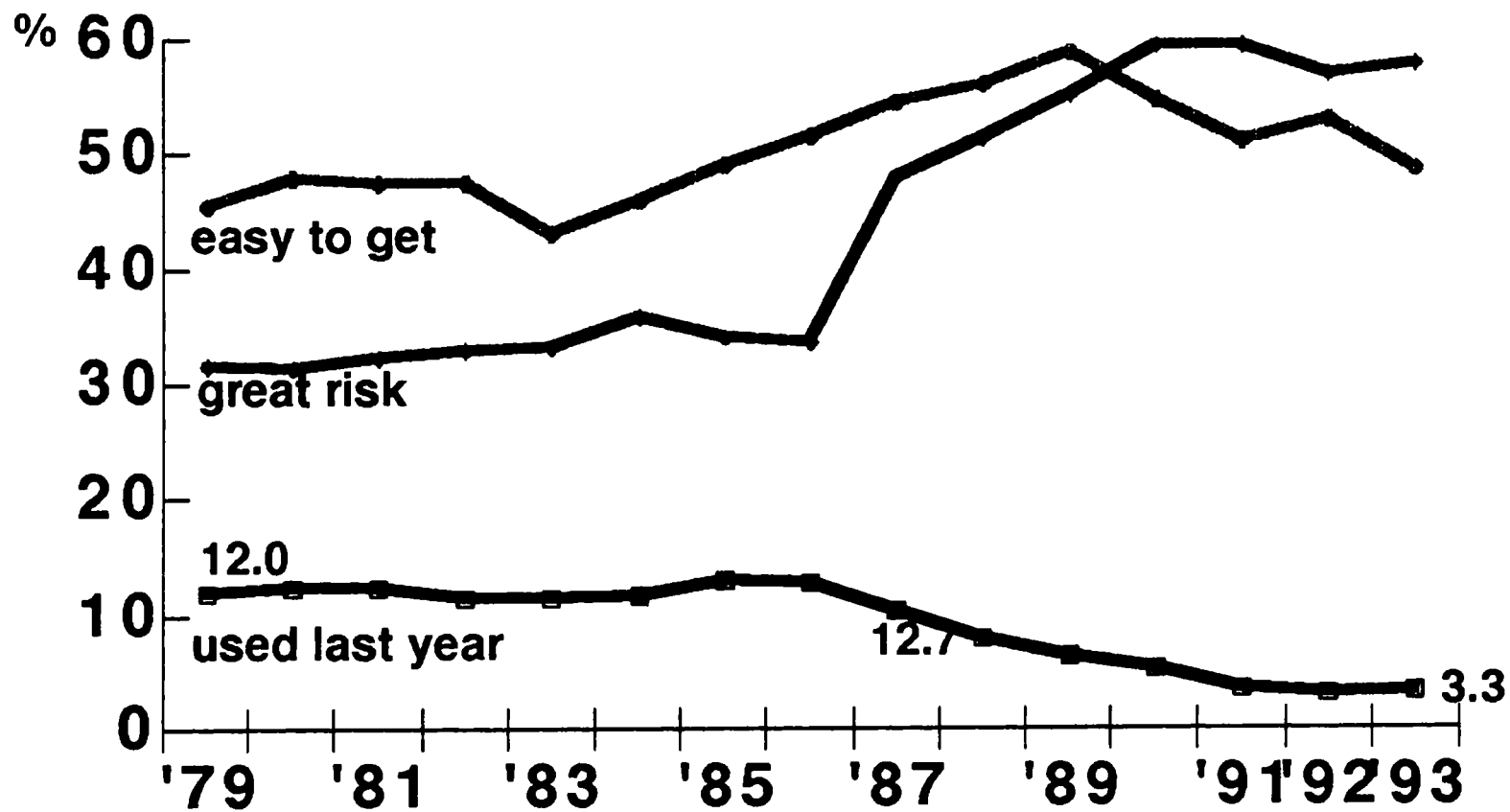
Perception of availability/risk/approval



Source: Univ. Michigan H.S. Seniors

Cocaine

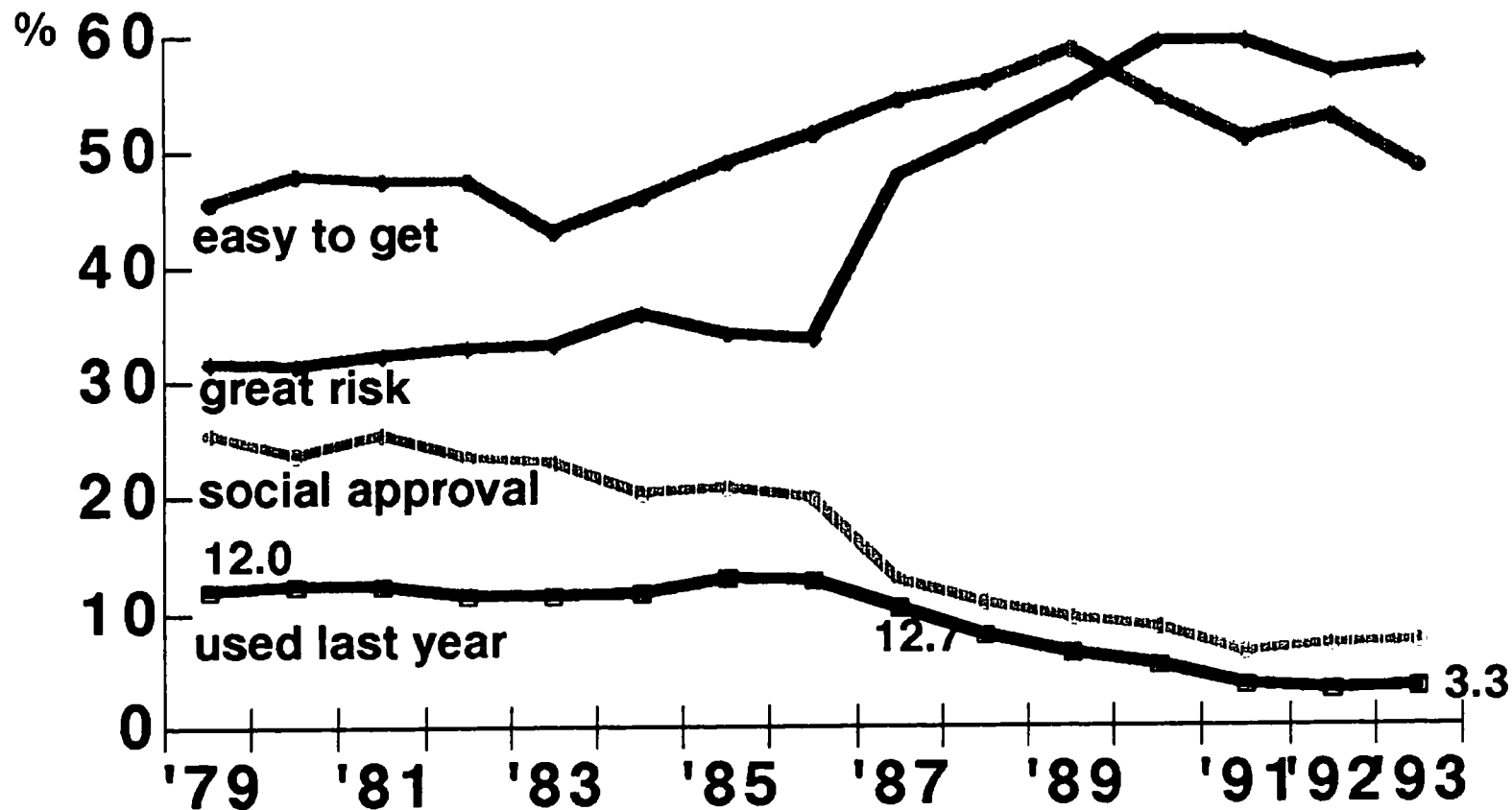
Perception of availability/risk/approval



Source: Univ. Michigan H.S. Seniors

Cocaine

Perception of availability/risk/approval



Source: Univ. Michigan H.S. Seniors

Ethnic Drug Use Comparison Among Youth in School

	<u>Marijuana</u>			<u>Cocaine</u>		
Lifetime Use:	<u>8th</u>	<u>10th</u>	<u>12th</u>	<u>8th</u>	<u>10th</u>	<u>12th</u>
White	9.9	23.0	36.3	2.3	3.7	7.0
Black	7.4	16.2	23.3	1.0	1.3	2.4
Hispanic	19.0	26.9	40.7	5.9	6.7	12.1

Source: 1992 ISR/Univ. of Michigan

THE BAD NEWS

- **Attitude/usage trends reversing**
- **6 million "in trouble" need treatment**
- **Crisis still exists in many urban areas**

**Annual drug use trends
among 8th graders (%)**

	<u>1991</u>	<u>1992</u>	<u>1993</u>
Marijuana	6.2	7.2	9.2
Inhalants	9.0	9.5	11.0
Hallucinogens	1.9	2.5	2.6
Cocaine	1.1	1.5	1.7

**Trends in perceived risk and
disapproval among 8th graders (%)**

	<u>1991</u>	<u>1992</u>	<u>1993</u>
Try marijuana			
■ risk	40.4	39.1	36.2
■ disapproval	84.6	82.1	79.2
Try cocaine			
■ risk	55.5	54.1	50.7
■ disapproval	91.2	89.6	88.5

AND

Drug problem is still one of America's most serious domestic issues ... because it is imbedded in most other social problems we face as a nation

- Crime**
- Family Violence**
- AIDS**
- Health Care**
- The Homeless**
- Education**
- Competitiveness/Jobs**

We must continue Denormalization Process --

- Media Attention**
- Workplace Programs**
- Community Action**

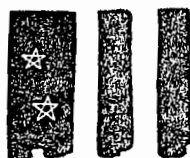
**With increasing community emphasis
on comprehensive demand reduction
efforts.**

- **Schools**
- **Workplace**
- **Neighborhoods**
- **Media**
- **Youth Programs**
- **Healthcare Professionals**
- **Religious Groups**
- **Parents Involvement**
- **Innovative Criminal
Justice Solutions**

AND

**We have 6 million people
"in trouble"**





PARTNERSHIP FOR A DRUG-FREE AMERICA
405 LEXINGTON AVENUE • NEW YORK, NY 10174
(212) 922-1560

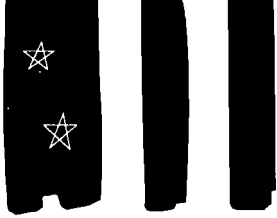
WASHINGTON BACKGROUNDER
AND BRIEFING BOOK

RESEARCH STUDIES

JEB

February 1993

**PHOTOCOPY
PRESERVATION**



PARTNERSHIP FOR A DRUG-FREE AMERICA

PREVENTION AND DEMAND REDUCTION EFFECTIVENESS

There are a number of primary studies which, taken together, provide strong quantitative evidence for the effectiveness of demand reduction efforts. These studies and the general experience of a broad range of prevention and treatment experts suggest four important conclusions.

1. **Prevention of use and reduction/cessation of occasional (non-addicted) use of illegal drugs is primarily a function of a process of changing attitudes** towards drugs, their use, and their users. We know that these attitudes are: increased perceptions of risk and social disapproval.

(Enclosed Supporting Analyses: Institute for Social Research at the University of Michigan, factors correlating to the decline in marijuana and cocaine use among high school seniors; Rand Drug Policy Research Center issue paper on cocaine usage trends.)

2. **Urban youth, arguably the most at-risk group for illegal drug use and addiction, are strongly predisposed not to get involved with drugs.** Importantly, even with this group, attitudes are the critical factor determining whether or not they will use illegal drugs.

(Enclosed Supporting Analyses: Partnership for a Drug-Free America Teen Segmentation Study and New York Inner City Grade School Study.)

3. **The application of comprehensive prevention components within a community, especially when built around a core of a good in-school education prevention program, yields significant progress in reducing substance abuse of all kinds.**

(Enclosed Supporting Analyses: Project STAR 5-year evaluation by the National Institute on Drug Abuse of community prevention programs in Kansas City and Indianapolis.)

4. **Treatment of drug users in various stages of addiction is cost effective and results in declines in drug usage.** This is true even though we don't know nearly enough about what kinds of treatment work best, and even if the addict is forced into treatment.

(Enclosed Supporting Analysis: Institute of Medicine and National Academy of Sciences report on drug-treatment programs.)

Explaining the Recent Decline in Marijuana Use: Differentiating the Effects of Perceived Risks, Disapproval, and General Lifestyle Factors*

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Journal of Health and Social Behavior 1988, Vol. 29 (March):92-112

Marijuana use among high school seniors has been declining since 1979. This paper explores two alternative explanations of this trend: that young people have become more conservative in general, or that specific changes in views about marijuana have led to the decline in its use. We report bivariate and multivariate analyses of questionnaire data from annual nationwide surveys of high school seniors, 1976 through 1986. Lifestyle factors such as religious commitment, truancy, and evenings away from home are linked strongly to individual differences in marijuana use: these factors, however, have not trended in ways that can account for much of the recent decline in marijuana use. On the other hand, the analyses suggest that if perceived risks and disapproval associated with regular marijuana use had not risen substantially in recent years, the decline in actual use would not have occurred. The implications for drug use prevention efforts are discussed.

The use of illicit drugs rose dramatically during the late 1960s and the 1970s, and the most widely used or "popular" of these drugs was marijuana (Miller, Cisin, Gardner-Keaton, Harrell, Wirtz, Abelson, and Fishburne 1983; National Commission on Marijuana and Drug Abuse 1972, 1973). Annual nationwide surveys of high school seniors, begun in 1975, monitored the continuing climb in marijuana use: from 1975 to 1978 annual prevalence rose from 40 to 50 percent, monthly prevalence rose from 27 to 37 percent, and use at a daily or near-daily level rose from 6.0 to 10.7 percent (Johnston, Bachman, and O'Malley 1979). In 1979, however, the rates of marijuana use among

seniors remained essentially the same as in 1978; 1980 marked the beginning of a steady decline, and by 1986 the rates had dropped to 1975 levels for annual prevalence (39%) and below 1975 levels for monthly prevalence (23%) and for daily or near-daily use (4.0%) (Johnston, O'Malley, and Bachman 1987). Analyses of follow-up data revealed that marijuana use among young adults also peaked in 1978-79 and declined subsequently, thus supporting the interpretation that there has been a secular trend or period effect, rather than sustained differences among cohorts or graduating classes (O'Malley, Bachman, and Johnston 1984; Johnston et al. 1987). Findings from national household surveys, summarized by Kozel and Adams (1986), provide further evidence of this secular trend.

What factors might explain the recent decline in marijuana use? Two quite different interpretations have been offered: 1) young people in recent years have become more "conservative"—that is, less "trouble-prone" in general; 2) there have been relatively specific changes in

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views about marijuana and the risks associated with its use. These two interpretations are not mutually exclusive, but they have important and distinctly different implications, especially with respect to drug abuse prevention efforts. In the present paper we explore these two explanations, employing data from the annual surveys of high school seniors.

BACKGROUND AND THEORETICAL CONSIDERATIONS

A growing number of studies has identified correlates and possible causes of drug use by young people (for reviews and summaries, see Glynn, Leukefeld, and Ludford 1983; Jessor 1979; Jessor, R. and S. L. Jessor, 1977; Jones and Battjes 1985; Kandel 1978, 1980, 1982; Lettieri and Ludford 1981; Murray and Perry 1985; Smith and Fogg 1978). Many of the possible determinants of drug use are included in the ongoing study of high school seniors. Earlier analyses showed marijuana use to be correlated strongly with truancy, frequent evenings away from home for recreation, and low religiosity; moderate correlations were found with a number of other dimensions reflecting lifestyles and values (Bachman, Johnston, and O'Malley 1981).

Our earlier analyses also showed that factors that were correlated with marijuana use were also correlated with the use of cigarettes, alcohol, and other illicit drugs. Furthermore, these patterns of correlation were highly consistent, even though the various drugs showed different trend patterns from year to year. We offered the following interpretation of these findings, which we quote at length because it is directly relevant to our present effort to understand trends in marijuana use:

We believe that some individuals seem especially disposed toward deviant or "problem" behavior (Jessor, R. and Jessor, S. L., 1977; Johnston, O'Malley, and Eveland, 1978; Smith and Fogg, 1978; Jessor, R., Chase, and Donovan, 1980). However, the particular forms of behavior chosen vary over different historical periods (as well as from one school or region to another). In the 1960s and 1970s illicit drug use emerged as an increasingly "popular" form of deviance; so instead of simply smoking cigarettes and

using alcohol, many of today's teenagers also use marijuana, and some use other illicit drugs. The emerging pattern of relationships with the use of cocaine may illustrate our point particularly well. In 1975, cocaine use was low and was not very strongly correlated with the background and lifestyle factors treated in this report. By 1979, usage levels were higher and the correlations were much stronger; however, the *patterns* of correlation were the familiar ones consistently in evidence for alcohol, marijuana, and other illicit drugs taken as a group. In other words, the kinds of young people most "at risk" tend to remain much the same, while the kinds and amounts of substances used shift somewhat from year to year. (Bachman et al., 1981, p. 67)

These observations were based on data from high school seniors in the classes of 1975 through 79, the period when marijuana continued to rise in popularity. Yet we think that this interpretation is fully applicable to the new data from the first half of the 1980s, the period in which trends in marijuana use reversed fairly dramatically. The question remains, however, why the popularity of marijuana declined.

One possible explanation is suggested by other trend data: the rise in perceived risks and disapproval associated with marijuana use, especially regular use. This rise was evident by the time of the 1980 survey, and the possible connection between these trends and the decline in actual use was proposed first in our report based on those data (Johnston, Bachman, and O'Malley 1981: 7). Several years later, using data from the senior classes of 1975 through 83, Johnston (1985) elaborated the argument, noting that the decline in marijuana use (a) was paralleled (actually preceded slightly) by rising concern about risks and by rising disapproval, and (b) was accompanied (again, actually preceded) by a considerable increase in the proportion of marijuana quitters who listed concerns about possible physical and/or psychological damage as reasons for quitting, but (c) was not associated with any appreciable change in the widespread perception that marijuana was easily available. In other words, changes in beliefs and attitudes may have led to changes in demand, but there was no evidence of a marked decline in (perceived) supply.

Jessor (1985), in commenting on Johnston's paper, found the above argument plausible but

"not yet compelling." Jessor pointed out that the aggregate trend data do not clearly establish causal order: "it remains quite possible that regular use of marijuana declined and beliefs about its harmfulness subsequently increased rather than the other way around." Jessor also noted that "... it is possible to entertain an equally plausible alternative hypothesis to account for both the increased perception of harm from regular use and the actual decline in regular use, namely, that there has been an increase in the general conventionality of adolescents during this same historical period. Such an increase in conventionality would lead to less motivation to use marijuana or to seek its effects, and would also imply greater receptivity to messages from authorities about the harmfulness of drug use" (259). The analyses reported here address both of these alternative explanations raised by Jessor.

Jessor commented further that in Johnston's paper "... the consonance of changes in beliefs about harmfulness and change in regular use is demonstrable only at the aggregate level: what remains a challenge is to demonstrate such consonance at the individual level, and that, of course, requires intra-individual data over time" (259). In the present paper we undertake analyses at the individual level, but not panel analyses tracking individuals across time. Such panel analyses, however, do not lack limitations of their own. One such limitation may be illustrated by recent trends in cigarette smoking. Even though habitual smokers may come to perceive greater risks, many will not change their behaviors because the habit can be quite difficult to break. Nevertheless, a rising secular trend in perceived risk may be a very important factor in deterring other individuals from adopting the behavior. Panel data would not be especially helpful in detecting such a phenomenon. Another limitation of social survey panel data is that usually it cannot detect very precisely the timing of shifts in attitudes and behaviors. Thus, if increased perceived risk and/or disapproval regarding marijuana is followed *very promptly* by a reduction or a cessation of use, that particular sequence of events is unlikely to be discriminated from other possible sequences, based on analyses of panel data collected annually, quarterly, or even monthly.

Previous studies established that drug use is correlated with attitudes and beliefs about drugs and drug use (e.g., Acock and DeFleur 1972;

Andrews and Kandel 1979; Kahle and Berman 1979; McAlister, Krosnick, and Milburn 1984). Kahle and Berman (1979), for example, used cross-lagged correlation analysis to estimate the relationships between attitudes and behaviors, while Andrews and Kandel (1979) examined the interrelationships using cross-lagged regression analysis. Within the relatively short periods examined (from two months to six months), both studies suggested that attitudes had stronger effects on subsequent drug use behavior than behavior had on later attitudes. Even so, the researchers were appropriately cautious in interpreting their results, and pointed out that reciprocal effects remained a possibility.

The emphasis has shifted from simply studying the relationships between attitudes and behavior to examining the role of background and immediate situational factors in both attitudes and behaviors. Andrews and Kandel (1979), for example, demonstrated the importance of peer groups to drug use. In the general literature, Liska (1984) argued recently that background factors, resources, and immediate situational factors may have greater direct influences on behavior than suspected previously. In keeping with this emphasis, in the present paper we examine behaviors and attitudes regarding marijuana in the context of a larger set of variables which are linked to drug use in general.

CONCEPTUAL APPROACH AND ANALYSIS STRATEGY

We have reviewed a number of issues which we consider relevant to an understanding of recent trends in marijuana use, and we have already suggested the sort of interpretation we consider most plausible. Now, by way of summary, we state more explicitly our conceptual approach toward interpreting these trends, and indicate some ways in which that perspective has shaped our analysis strategy.

For purposes of our present analyses and discussion, we divide predictors of marijuana use into two categories: 1) general background and lifestyle factors which are likely to relate not only to the use of marijuana but also to the use of other drugs, to delinquent behavior, and to a variety of other "problem," "deviant," or "antisocial" behaviors; 2) drug-specific factors, in this case those which relate directly to

marijuana use. We recognize that this distinction is too sharp to correspond fully to the real world; it is likely that some factors will predict more than one category of drug use, but not necessarily all; and other factors may predict many categories of drug use but may have little relationship with other problem behaviors. Nevertheless, we find the distinction workable for the particular variables employed in the present investigation and useful as a way of organizing conceptual and analytic matters.

The first category of predictors consists of individual characteristics (demographic background, personality, educational history, "lifestyle" patterns, etc.) which place some persons more "at risk" than others for becoming involved in a variety of "problem" behaviors, including drug use. Although prior analyses revealed some differences among drugs in patterns of background and lifestyle factors that predict use (Bachman et al. 1981), we consider the similarities far more impressive. Indeed, the very generality of predictive patterns across drugs makes it relatively unlikely, in our view, that trends upward or downward in the use of a particular drug are "explainable" (accompanied or preceded) by corresponding shifts in these general determinants of "risk." Nevertheless, in order to explore this possibility, one aspect of our present analyses is a search for trends in those factors which have proven to be important correlates of drug use in general. A less obvious aspect of the analyses is an examination of the extent to which the actual patterns of correlation shift over time, because it is not certain that the factors that predicted drug use in the 1970s will be equally good predictors in the 1980s. Thus, for example, levels of political liberalism/ conservatism may shift over time, and the closeness of the connection between that dimension and drug use also may change. Our analyses document the extent to which each of these kinds of trends has occurred during the past decade.

The second category of predictors is drug-specific, defined as those factors which relate primarily to the use of a particular drug rather than to drug use in general (or problem behavior in general). Such factors include the individual's awareness of the drug, perceptions of the effects (both short-term and long-term) of using the drug, perceived (as well as actual) availability, perceptions of use by friends and others, and perceptions that friends and relatives disapprove of using the drug. These drug-specific factors

are subject to change over time. Indeed, we consider them much more likely to change than the general factors related to the broad range of problem behaviors. Accordingly, given a trend of rising or falling use of a *particular* drug (rather than drugs in general), we consider it most likely that the explanation would be traceable to changes in drug-specific factors.

Obviously we think that both categories of predictors are important in accounting for an individual's drug use. We also recognize that there are considerable difficulties in isolating "effects" of one predictor from those of another; for that matter, it can also be quite difficult to determine whether the correlations we observe really represent *effects* of the predictors on drug use. In spite of these problems of interpretation, which we will note explicitly from time to time in our discussion of results, we believe that we can make some headway in understanding the probable causes of the recent decline in marijuana use.

Our approach to analysis and reporting is somewhat like that of a lawyer building a case (with mostly circumstantial evidence) rather than that of a physicist conducting a critical experiment. We begin with a set of repeated cross-sectional analyses, reporting the extent to which the levels of various predictors, and/or the strength of their correlations with marijuana use, have changed during the past decade. Then we employ the unusual strategy of combining data from eleven graduating classes (1976-1986) into a single data set in order to analyze secular trends within the broader context of individual differences in marijuana use and its correlates. These analyses explore the proposition that changes in perceived risks and disapproval may be primary contributors to the recent decline in marijuana use, but they also help us understand more fully how a much wider variety of factors has contributed to marijuana use by young people during the past decade. We conclude by discussing the implications of our findings in terms of both the etiology of drug use and drug abuse prevention efforts.

METHODS

Subjects

The data for our analyses were obtained from the Monitoring the Future project, an ongoing

study of youth conducted by the Institute for Social Research. Because the study design has been described extensively elsewhere (Bachman and Johnston 1978; Bachman, Johnston, and O'Malley 1987; Johnston et al. 1986), only the key features are noted here. The project involves surveys of nationally representative samples of high school seniors, conducted each year since 1975. The present analyses deal with data collected from 11 graduating classes, 1976 through 1986. (Data from the class of 1975 were not included because some differences in questionnaire formats for that year might have affected findings.)

A multistage sampling procedure (Kish 1965) is employed each year to select respondents representative of all seniors in the 48 contiguous states: Stage 1 selects particular geographic areas, Stage 2 selects one or more high schools in each area (a total of 130 to 135 schools, both public and private), and Stage 3 selects seniors within each high school.

Student response rates averaged 80 percent across the 11 surveys; absenteeism on the day of the survey accounted for nearly all of the nonresponse. As reported elsewhere, we conclude that if all absentees had been included in the surveys the estimated proportions of marijuana users would increase by less than three percent, and trend patterns across years would remain essentially unchanged (Johnston and O'Malley 1985; see also Johnston et al. 1987).

Data were collected via questionnaires administered in classrooms by locally based Institute for Social Research representatives and their assistants. The obtained sample sizes total approximately 17,000 per year. For most findings reported here, however, the annual sample sizes are 3,000 or slightly more because each annual survey includes five different questionnaire forms, and the items dealing with beliefs and attitudes about marijuana appear on single forms. (Each classroom administration includes all five forms, with each form assigned randomly to 20% of the respondents.) Because of the large number of cases, sampling errors are very small; any relationship that we treat as substantively important far exceeds conventional standards for statistical significance.

Measures

The questionnaire items dealing with marijuana use, perceived risks of marijuana use, and

personal disapproval of marijuana use are presented in Table 1. (Descriptions of other measures are incorporated in Table 2.) Complete question wordings for all items, along with response distributions and missing data rates, have been published separately (see Bachman et al. 1987 and prior volumes in the same series). The analyses reported here employed the measure of marijuana use during the previous 12 months. The seven response categories (shown in Table 1) provide a roughly logarithmic scale of use. We decided to employ this measure for the present report after exploratory analyses revealed (a) that measures of monthly use and daily use provided similar but lower patterns of correlation (attributable to their lower variance), and (b) that a composite measure combining data on monthly and annual use provided no stronger correlations than the simpler measure of annual use. The reliability of the measure of marijuana use in the previous 12 months is estimated to be .90, calculated by the Wiley and Wiley (1970) method (O'Malley, Bachman, and Johnston 1983; see also Bachman, O'Malley, and Johnston 1984); missing data rates for this item were four to five percent each year.¹

RESULTS AND DISCUSSION

Trends in Predictors and Patterns of Prediction

One key question raised in this paper is whether there have been any important trends in the variables identified as important predictors² of marijuana use. A second question is whether the patterns of correlation between predictors and drug use have shifted from one year to another. Either or both kinds of change may have occurred, and, if large enough, might account for the recent decline in marijuana use.

Overview of trends in background and lifestyle predictors. Our earlier analysis of background and lifestyle correlates of drug use showed quite similar patterns of prediction for five classes of seniors during the late 1970s, specifically 1975 through 1979 (Bachman et al. 1981). Recently we replicated and extended that analysis to include seniors from 1975 through 1986 (Bachman, O'Malley, and Johnston 1986). Four key findings and their implications for the present analysis are listed below.

TABLE 1. Measures of Marijuana Use, Perceived Risk, and Disapproval

Question Text	Response Alternatives
<i>Marijuana Use (Forms 1-5)</i>	
On how many occasions (if any) have you used marijuana . . . (Mark one circle for each line.)	1. 0 Occasions 2. 1-2 Occasions 3. 3-5 Occasions 4. 6-9 Occasions 5. 10-19 Occasions 6. 20-39 Occasions 7. 40 or More Occasions
a . . . in your lifetime?	
b . . . during the last 12 months?	
c . . . during the last 30 days?	
<i>Perceived Risk (Form 5 Only)</i>	
The next questions ask for your opinions on the effects of using certain drugs and other substances. First, how much do you think people risk harming themselves (physically or in other ways), if they . . .	1. No Risk 2. Slight Risk 3. Moderate Risk 4. Great Risk 5. Can't Say, Drug Unfamiliar
b. Try marijuana (pot, grass) once or twice	
c. Smoke marijuana occasionally	
d. Smoke marijuana regularly	
<i>Disapproval (Form 3 Only)</i>	
Individuals differ in whether or not they disapprove of people doing certain things. Do YOU disapprove of people (who are 18 or older) doing each of the following? (Mark one circle for each line.)	1. Don't Disapprove 2. Disapprove 3. Strongly Disapprove
b. Trying marijuana (pot, grass) once or twice	
c. Smoking marijuana occasionally	
d. Smoking marijuana regularly	

1. Those factors which we found most important in predicting use of marijuana and other drugs during the late 1970s remained most important during the early 1980s. It continues to be true (a) that drug use is above average among those less successful in adapting to the educational environment (as indicated by truancy and low grades), those who spend many evenings out for recreation, those with heavy time commitments to a job, and those with relatively high incomes; and (b) that drug use is below average among those with strong religious commitments and those with conservative political views.

2. It also remains true that the background factors of sex, race, parental education, number of parents in the home, urbanicity, and region add relatively little in regression analyses when combined with lifestyle and experience factors. For that matter, even the zero-order correlations are quite modest at most. For these reasons we have omitted the background predictors (except sex) in the present analyses, and focus on a

more limited set of lifestyle and experience dimensions.³

3. There have been no large secular trends in the background and lifestyle predictor dimensions. The largest shift in any of the background dimensions was a rise of about .3 SD in mean parental education, but this dimension is virtually uncorrelated with marijuana use (correlations range from zero to .06). There was also a rise of about .4 SD in seniors' total income per week, but this increase would virtually disappear if adjusted for inflation. Some other smaller but interesting changes will be noted below; it is worth emphasizing here, however, that these changes in background and lifestyle predictors are not nearly large enough to explain the recent decline in marijuana use.

4. Although the levels of these predictor variables have not changed much during the past decade, there have been several shifts in the strength of their correlations with drug use. Most interesting, perhaps, is that both political conservatism and religious commitment are now

linked less closely to drug use, particularly to marijuana use. These changes in patterns of correlation, as well as other, more subtle changes, are shown more clearly in the analyses that follow.

Trends in lifestyle factors predicting marijuana use. Table 2 presents two kinds of trend data for each of the key lifestyle variables, shown separately for each of 11 senior classes (1976-86). The table displays percentage distributions for each category of lifestyle predictor, so any overall shift in the proportions of seniors falling into each category can be discerned. More important, the table displays bivariate relationships: mean annual marijuana use (on the seven-point scale) for each predictor category, along with correlation coefficients showing strength of relationship.⁴ In keeping with the overview of trends presented above, Table 2 shows that during the past decade there has been a good deal of consistency in relationships between lifestyle factors and marijuana use, and that there have been no large secular trends in these lifestyle factors. Nevertheless, Table 2 provides evidence of several more subtle changes, and these receive a more detailed analysis below.

In terms of our present focus, however, the most important finding shown in Table 2 is the ubiquity of the secular trend in marijuana use: an increase from 1976 through 1978-79, and a decline thereafter for every subgroup defined on every variable. Thus, for example, if we focus only on those seniors who reported no truancy, mean marijuana use among such "nontruants" in the classes of 1978-79 was higher than among nontruants in the class of 1976, but with succeeding classes after 1979 the rate of marijuana use among nontruants trended downward. The same general pattern appears for those who reported low truancy, as well as for those who reported relatively high levels of truancy. (These several categories of truancy show some interesting differences in strength of trends, as we discuss below; nevertheless, the key finding in Table 2 is that each level of truancy shows the same overall trend pattern.) We selected truancy for this example because we noted a weak secular trend along this dimension: slightly fewer seniors in recent classes reached the highest level of truancy, while slightly more reported no truancy. Because truancy is correlated fairly strongly with

marijuana use, one might suppose that a decline in truancy rates would *cause or contribute to* a decline in marijuana use. Yet Table 2 shows that even when we "hold constant" the level of truancy from year to year, a strong secular trend in marijuana use remains. The same can be said for each category of each of the other predictors shown in Table 2. At least when we examine them one at a time, not one of these variables can "account for" or "explain" in any substantial way the recent decline in mean levels of marijuana use among high school seniors. (In the next section we consider whether the full set of variables shown in Table 2, combined in a multivariate analysis, can account for the secular trend in marijuana use.)

A more detailed examination of Table 2 reveals several additional patterns of interest. Turning first to the measures of educational adjustment and success, we note indications of a slight improvement in what might be termed seniors' commitment to education. As noted above, truancy has decreased slightly since 1978-79. There was also a slight increase in proportions of seniors in the college preparatory curriculum, and in proportions planning to complete college (not shown in Table 2; see Bachman et al. 1986). As Table 2 indicates, these trends were not accompanied by any overall rise in classroom grades; the lack of such change, however, could reflect teachers' resistance to anything suggesting "grade inflation" and/or stable tendencies to "grade on the curve," which would tend to prevent secular trends in grades. Of particular interest for present purposes is the fact that the upward and downward trends in marijuana use were more pronounced among those least successfully adjusted to the educational system. To some extent, at least, this finding represents a "floor" effect; among the "high-risk" categories, marijuana use was relatively frequent in 1979, thus permitting much more room for downward movement in subsequent cohorts of seniors. In 1979, for example, the high truancy seniors averaged about 4.8 on the 1-7 scale of marijuana use, whereas in 1986 the high-truancy seniors averaged only 3.6. Among the nontruant seniors, the same period showed a decline from about 2.1 to 1.7 in mean marijuana use (where 1.0 represents zero use). A similar phenomenon is evident for grades but is much less pronounced, as might be expected in view of the

TABLE 2. Trends in Marijuana Annual Use Means (1-7 Scale) for Each Level of a Set of Lifestyle Factors: High School Seniors, 1976-1986

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
R's sex											
Male											
Mean MJ. use	3.003	3.104	3.288	3.245	3.071	2.876	2.687	2.606	2.479	2.483	2.387
% in category	49.7	48.2	48.5	48.4	49.0	49.4	49.9	49.4	49.1	48.7	47.9
Female											
Mean MJ. use	2.344	2.516	2.632	2.651	2.514	2.392	2.303	2.142	2.054	2.089	2.013
% in category	50.3	51.8	51.5	51.6	51.0	50.6	50.1	50.6	50.9	51.3	52.1
r	-.145	-.127	-.138	-.125	-.122	-.110	-.091	-.114	-.108	-.100	-.098
High school grade											
C or lower											
Mean MJ. use	3.408	3.570	3.628	3.689	3.515	3.276	3.163	3.003	2.793	2.888	2.842
% in category	13.0	13.2	13.6	13.2	14.1	13.1	14.7	15.3	15.2	14.2	15.3
C+/B											
Mean MJ. use	2.988	3.139	3.347	3.258	3.091	2.954	2.803	2.620	2.521	2.497	2.352
% in category	27.3	27.9	28.6	28.2	27.0	28.0	28.3	29.2	29.2	28.6	28.9
B/B+											
Mean MJ. use	2.516	2.650	2.731	2.780	2.610	2.519	2.334	2.192	2.097	2.112	2.061
% in category	40.1	39.6	39.0	38.1	38.8	38.6	37.5	36.7	36.8	37.5	37.3
A-/A											
Mean MJ. use	1.988	1.981	2.191	2.235	2.134	1.945	1.831	1.741	1.718	1.761	1.667
% in category	19.6	19.3	18.9	20.5	20.1	20.3	19.6	18.8	18.8	19.7	18.5
r	-.204	-.224	-.209	-.203	-.198	-.192	-.212	-.209	-.189	-.191	-.194
Truancy composite											
Code 10 (none)											
Mean MJ. use	1.928	2.030	2.108	2.121	1.995	1.975	1.924	1.868	1.788	1.808	1.710
% in category	50.8	46.4	51.3	51.0	50.3	51.4	54.5	56.3	58.1	55.6	56.0
Code 15 (low)											
Mean MJ. use	2.765	2.716	3.053	3.004	2.869	2.691	2.610	2.445	2.373	2.343	2.319
% in category	17.9	18.7	17.8	16.8	17.6	17.5	17.3	16.5	16.7	16.8	17.1
Code 20											
Mean MJ. use	3.199	3.314	3.816	3.619	3.330	3.224	3.050	2.905	2.888	2.678	2.708
% in category	10.3	12.4	10.8	11.5	11.0	11.0	10.5	9.8	9.3	10.2	10.4
Code 25											
Mean MJ. use	3.759	3.502	3.983	4.000	3.945	3.550	3.452	3.334	3.192	3.243	3.007
% in category	6.7	7.8	6.5	6.8	6.9	6.3	6.4	6.1	5.8	6.0	5.8
Code 30-65 (high)											
Mean MJ. use	4.459	4.549	4.743	4.784	4.573	4.182	4.088	3.788	3.743	3.713	3.609
% in category	14.3	14.7	13.5	13.9	14.1	13.8	11.4	11.3	10.1	11.4	10.6
r	.397	.383	.389	.400	.401	.354	.347	.328	.337	.331	.324
Hours worked/week											
0 hours											
Mean MJ. use	2.443	2.501	2.488	2.457	2.398	2.302	2.253	2.175	2.083	2.050	2.038
% in category	25.8	23.4	21.8	19.7	19.5	21.3	23.2	24.6	24.9	24.4	23.1
1-10											
Mean MJ. use	2.432	2.413	2.531	2.515	2.510	2.400	2.239	2.050	2.031	2.041	1.917
% in category	21.3	19.9	19.2	18.7	18.5	20.1	20.9	21.1	20.1	20.1	19.3
11-20											
Mean MJ. use	2.664	2.841	2.986	2.970	2.783	2.703	2.595	2.443	2.264	2.291	2.219
% in category	23.6	24.5	25.4	26.6	28.8	27.8	27.3	26.8	25.9	25.9	27.4
21-30											
Mean MJ. use	2.962	3.120	3.404	3.359	3.086	2.930	2.722	2.655	2.494	2.554	2.387
% in category	18.6	20.5	21.6	23.6	22.9	21.2	19.9	18.7	19.7	20.7	20.5
31 or more											
Mean MJ. use	3.043	3.191	3.337	3.334	3.186	2.867	2.828	2.656	2.537	2.539	2.536
% in category	10.7	11.7	12.0	11.5	10.4	9.7	8.7	8.8	9.4	8.9	9.7
r	.100	.126	.152	.156	.125	.110	.106	.106	.095	.105	.096

(Continued)

TABLE 2. (Continued)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total weekly income \$0											
Mean MJ. use	2.210	2.116	2.193	2.077	2.168	2.007	1.970	1.908	1.792	1.698	1.623
% in category	6.3	6.4	5.6	5.0	5.1	5.4	5.4	5.8	5.4	5.2	4.5
\$1-25											
Mean MJ. use	2.429	2.452	2.510	2.494	2.445	2.344	2.235	2.084	1.951	1.987	1.934
% in category	42.2	36.6	31.8	28.9	26.6	28.8	29.7	30.9	29.2	28.2	25.3
\$17-60											
Mean MJ. use	2.761	2.872	3.018	2.993	2.722	2.625	2.491	2.323	2.265	2.231	2.124
% in category	32.2	33.2	31.8	30.0	29.8	27.6	25.1	23.7	24.0	23.8	24.0
\$42+											
Mean MJ. use	3.122	3.310	3.396	3.331	3.106	2.927	2.745	2.647	2.493	2.529	2.409
% in category	19.3	23.9	30.8	36.1	38.5	38.2	39.7	39.6	41.5	42.8	46.2
r	.128	.168	.174	.170	.135	.134	.121	.130	.132	.138	.120
Religious commitment index ^a											
10-15 (low)											
Mean MJ. use	3.732	3.769	3.940	3.866	3.544	3.298	3.055	3.163	2.949	2.939	2.741
% in category	14.3	12.9	12.5	12.1	11.6	12.6	12.8	12.5	13.5	15.2	16.0
20-25											
Mean MJ. use	3.228	3.325	3.470	3.510	3.363	3.118	2.945	2.782	2.624	2.590	2.509
% in category	30.6	32.8	33.0	31.5	30.0	31.4	33.5	33.3	32.9	33.9	34.1
30-35											
Mean MJ. use	2.406	2.567	2.704	2.767	2.661	2.321	2.322	2.156	2.099	2.076	2.003
% in category	34.6	34.8	35.1	35.3	35.0	34.8	34.6	34.0	33.2	32.4	32.5
40 (high)											
Mean MJ. use	1.558	1.638	1.818	1.794	1.826	1.691	1.629	1.523	1.507	1.486	1.423
% in category	20.5	19.5	19.4	21.0	23.4	21.3	19.0	20.3	20.4	18.6	17.4
r	-.321	-.305	-.293	-.294	-.263	-.253	-.233	-.269	-.246	-.246	-.233
Political belief											
Very conservative											
Mean MJ. use	2.435	2.253	2.593	2.407	2.307	2.145	2.201	2.008	1.996	1.893	1.965
% in category	2.4	2.9	2.8	3.1	3.3	3.4	3.2	2.9	3.4	3.5	3.5
Conservative											
Mean MJ. use	2.137	2.396	2.545	2.429	2.458	2.321	2.226	2.086	2.012	2.016	1.993
% in category	11.7	12.8	13.1	13.4	14.2	15.4	14.2	12.5	13.3	14.9	13.5
Moderate											
Mean MJ. use	2.368	2.586	2.699	2.798	2.674	2.550	2.355	2.262	2.215	2.164	2.104
% in category	33.8	33.5	32.2	31.7	33.2	33.0	31.2	31.8	32.0	30.9	30.9
Liberal											
Mean MJ. use	3.242	3.320	3.502	3.420	3.124	3.032	2.857	2.610	2.364	2.448	2.377
% in category	19.9	18.9	18.2	16.8	15.7	14.7	14.7	14.2	14.6	16.1	15.7
Very liberal											
Mean MJ. use	3.830	3.832	4.001	3.783	3.624	3.145	2.956	2.867	2.651	2.724	2.680
% in category	4.4	3.8	3.6	3.5	3.0	3.0	2.9	3.0	3.0	3.1	3.5
Radical											
Mean MJ. use	4.088	4.043	4.337	4.461	4.252	4.061	3.784	3.651	3.511	3.477	3.256
% in category	2.7	2.3	2.5	3.0	2.9	3.0	2.8	2.8	2.8	2.9	2.7
None of the above, or don't know											
Mean MJ. use	2.532	2.655	2.813	2.815	2.694	2.536	2.448	2.346	2.255	2.301	2.139
% in category	25.2	25.9	27.6	28.6	27.6	27.6	31.1	32.8	30.9	28.7	30.2
r (excluding last category)	.226	.195	.195	.205	.176	.172	.156	.159	.136	.151	.134

(Continued)

TABLE 2. (Continued)

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Evenings out per week											
1 or fewer											
Mean MJ. use	1.672	1.769	1.886	1.910	1.850	1.783	1.663	1.613	1.572	1.596	1.543
% in category	20.8	20.7	19.3	19.6	21.1	22.1	22.7	22.0	23.1	21.4	22.3
2-3											
Mean MJ. use	2.487	2.611	2.715	2.712	2.619	2.519	2.417	2.278	2.180	2.124	2.079
% in category	52.4	51.7	54.7	54.1	56.0	56.6	55.8	55.2	55.9	56.3	55.3
4-5											
Mean MJ. use	3.487	3.578	3.911	3.859	3.692	3.564	3.375	3.090	2.935	3.016	2.854
% in category	18.0	18.5	17.8	17.9	16.3	15.2	15.2	16.4	14.7	15.3	15.8
6-7											
Mean MJ. use	4.260	4.385	4.566	4.607	4.616	4.192	3.847	3.653	3.614	3.717	3.653
% in category	8.9	9.0	8.2	8.4	6.6	6.1	6.3	6.4	6.4	7.0	6.6
r	.334	.337	.339	.340	.337	.313	.308	.286	.286	.297	.292

* The religious commitment index is a mean of two items: How often do you attend religious services? (1 = Never . . . 4 = About once a week or more); How important is religion in your life? (1 = Not important . . . 4 = Very important). The product-moment correlation between these two items is approximately .55.

much lower overall correlation between grades and marijuana use.

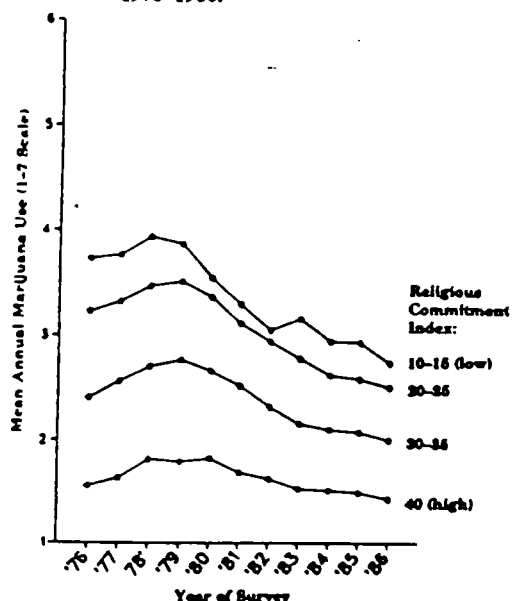
Turning next to the two measures related to part-time work, we see again that among seniors in the "higher-risk" categories (long hours of work, high weekly incomes) the downward trend in marijuana use from the class of 1979 to the class of 1986 was about twice as great as among those with little or no involvement in part-time work. As noted earlier, weekly income rose consistently throughout the decade studied. We assume, however, that this rise reflects primarily the effects of inflation; our income measure is not sufficiently detailed to permit a precise assessment of inflation effects, but for present purposes that seems unnecessary. More important, the proportions of seniors working 21 to 30 hours a week, as well as the proportions working 31 or more hours, declined slightly after 1979. Here again, as in the case of truancy, the shift is far too small to explain the decline in marijuana use during the 1980s, but we cannot rule out the reverse possibility that the decline in marijuana use helped reduce truancy and long hours of part-time work. We will return later to this point.

Turning now to the section in Table 2 dealing with religious commitment, we see yet another pattern of findings. The proportion of seniors indicating the strongest commitment declined slightly from 23 percent in 1980 to 17 percent in 1986, whereas the proportion with the lowest commitment rose from 12 percent to 16 percent during the same period. This small shift is interesting only because it is exactly the

opposite of what might be expected in view of the negative correlation between religious commitment and marijuana use. Clearly, it could not have been any overall increase in religious involvement which caused the recent decline in marijuana use, nor did changing marijuana use give rise to increased religious values. Another interesting finding is that the correlations between religious commitment and marijuana use grew progressively weaker from 1976 onward; this trend might be viewed as an indication that religion gradually is becoming less central in decisions about whether to use marijuana. On the other hand, as Figure 1 displays clearly, the upward and then downward secular trend appears only weakly among those with strong religious ties, whereas it is more pronounced among those seniors reporting little religious commitment. Thus it appears that those most "protected" by their high commitment to religion were influenced least by shifts in the popularity of marijuana during the past decade.

Political beliefs (conservative versus liberal or radical) show somewhat weaker links with marijuana use than we note for religious commitment, but here again we see a pattern of declining correlations from 1976 onward. This time the explanation for a weakening association seems fairly obvious: marijuana use during the late 1960s and early 1970s was linked to political opposition to the war in Vietnam (Johnston 1973; Suchman 1968), and such links grew progressively weaker as the Vietnam involvement receded gradually from the fore-

Figure 1. Trends in Annual Marijuana Use Shown Separately for Four Levels of Religious Commitment. High School Seniors, 1976-1986.



front of political awareness. There were also trends in political beliefs. The proportions of seniors describing themselves as conservative or very conservative increased slightly from 14 percent in 1976 to 18 percent in 1980, whereas the proportions listing themselves as liberal or very liberal declined from 24 percent to 19 percent; during the early 1980s both proportions remained fairly stable. It seems unlikely that these very small secular trends in political views in the late 1970s had much connection with the decline in marijuana use during the 1980s. The one other finding parallels the finding reported for the other predictors: students in the "higher-risk" categories—in this case individuals with liberal or radical political views—showed stronger trends in marijuana use (e.g., means declined about 1.1 on our 7-point scale from 1979 through 1986) compared with those less at risk (among conservatives mean use declined only by about 0.5).

One other lifestyle variable displayed in Table 2 is seniors' reports of how many evenings per week they "go out for fun and recreation." Here again, the most pronounced secular trends in marijuana use are evident among those in the highest-risk category: in this case, those reporting that they spent most evenings each week out for fun and recreation. The correlation between

evenings out and marijuana use held steady at about .33 for the senior classes of 1976 through 80, and ranged from .28 to .30 for subsequent classes. The proportions of seniors spending most evenings out (four or more per week) declined slightly from the 1970s (25-28%) to the 1980s (21-23%), but this shift was too small to be very significant in the much larger decline in marijuana use during the 1980s. On the other hand, we are particularly concerned here with the opposite direction of causation. If seniors during the 1980s became somewhat less eager to consume marijuana, that decline may have led in turn to a slight overall reduction in their needs or desires to spend evenings away from home. In other words, although it seems obvious that being away from home increases the opportunities for seniors to use marijuana, it also seems likely that for some seniors the *intention* to smoke marijuana may be a primary reason for being away from home.

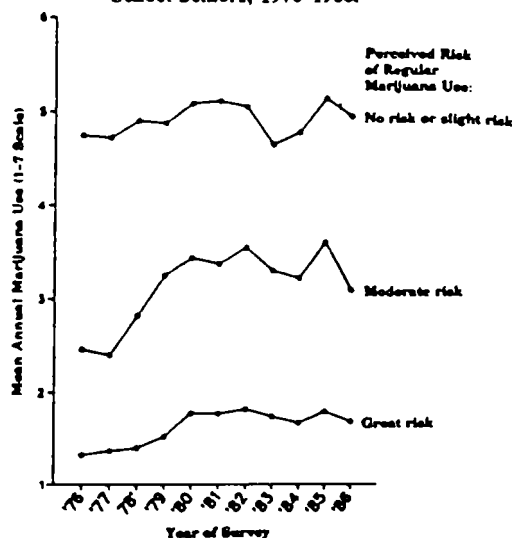
Summarizing the findings presented in this section, we see that the secular trend in marijuana use—a rise until 1978-79 and a decline thereafter—is evident across the full set of lifestyle variables displayed in Table 2. Yet all categories of the variables do not show this trend equally; it is more pronounced in the "higher-risk" categories. In view of the evidence presented thus far, does it seem likely that shifts in some of the lifestyle predictors are primarily responsible for the recent trends in marijuana use, particularly for the downturn since 1979? We think not. There are several different secular trends in the lifestyle variables shown in Table 2; some are in the wrong direction to account for the downturn in marijuana use, and in any case none of the trends is nearly strong enough to do so. If anything, a reverse causal interpretation would be more consistent with some of the data: it may be that the decline in marijuana use during the 1980s contributed to the slight reductions in truancy and evenings out during the same period.

All the evidence presented above is based on bivariate analyses; we examined a number of lifestyle predictors one at a time. The possibility remains, however, that when these predictors are combined multivariately they may do more to account for trends in marijuana use, and we explore that possibility below. First, however, we turn to another set of predictors, which

(unlike those in Table 2) have shown very strong secular trends in recent years.

Trends in perceived risk and disapproval predicting marijuana use. Between 1977 or 1978 and 1986, the proportion of seniors perceiving no risk in regular marijuana use dropped from 13 percent to near zero, while those perceiving great risk doubled from 37 percent to 75 percent. During the same period, the proportion not disapproving of regular marijuana use dropped by two-thirds, from 33 percent to 11 percent, while the proportion strongly disapproving rose from 40 percent to 67 percent. Were these sharp shifts in proportions accompanied by substantial changes in the way disapproval and perceptions of risk related to actual use of marijuana? Here, in contrast to Table 2, we do not see within each predictor category any clear and consistent drop in marijuana use from 1978-79 onward. Beginning with the data for perceived risk, shown in the upper half of Table 3 and also displayed in Figure 2, we note that in each class of seniors, those who perceived great risk in regular

Figure 2. Trends in Annual Marijuana Use Shown Separately for Three Levels of Perceived Risk of Regular Marijuana Use: High School Seniors, 1976-1986.



marijuana use also reported very little actual use during the previous year (means across all 11 classes average 1.6 on the scale of 1 to 7), those

TABLE 3. Trends in Marijuana Annual Use Means (1-7 Scale) for Each Level of Perceived Risk and Disapproval of Regular Use: High School Seniors, 1976-1986

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Perceived risk of regular marijuana use											
Mean MJ. use	5.502	5.621	5.885	5.756	5.893	5.831	5.645	4.884	4.948	5.029	5.310
% in category	12.9	13.2	12.3	8.1	3.6	2.1	2.3	2.2	1.8	1.5	1.2
Slight risk											
Mean MJ. use	4.279	4.200	4.375	4.529	4.879	4.978	4.890	4.590	4.732	5.166	4.859
% in category	21.4	23.3	23.4	20.8	14.2	11.9	90.0	9.1	7.4	5.7	5.3
Moderate risk											
Mean MJ. use	2.458	2.395	2.815	3.244	3.429	3.361	3.536	3.286	3.208	3.594	3.090
% in category	25.1	25.1	27.7	27.3	28.9	25.7	25.1	22.9	20.3	19.3	19.1
Great risk											
Mean MJ. use	1.330	1.374	1.403	1.527	1.773	1.766	1.815	1.735	1.668	1.793	1.686
% in category	40.6	38.4	36.5	43.8	53.3	60.3	63.6	65.8	70.4	73.5	74.5
r	-0.660	-0.654	-0.647	-0.608	-0.560	-0.545	-0.523	-0.490	-0.513	-0.505	-0.485
Disapproval of regular marijuana use											
Don't disapprove											
Mean MJ. use	5.038	5.105	5.246	5.245	5.199	5.202	5.298	5.207	5.156	5.191	5.364
% in category	28.8	32.8	30.9	29.8	23.5	21.0	17.3	15.4	13.5	12.2	11.1
Disapprove											
Mean MJ. use	2.453	2.456	2.754	2.844	2.907	2.929	2.879	2.802	3.017	2.986	
% in category	27.7	26.7	27.8	29.6	28.0	28.9	26.7	27.2	24.7	24.1	22.2
Strongly disapprove											
Mean MJ. use	1.220	1.298	1.321	1.394	1.391	1.446	1.414	1.361	1.402	1.446	1.393
% in category	43.4	40.5	41.3	40.6	48.5	50.1	55.9	57.4	61.8	63.6	66.7
r	-0.693	-0.687	-0.691	-0.668	-0.673	-0.655	-0.672	-0.673	-0.661	-0.643	-0.671

who perceived moderate risk reported more use (an average of 3.1), those who perceived only slight risk reported substantially higher levels of actual use (an average of 4.7), and those who indicated that they saw no risk in regular marijuana use reported still higher rates of use (an average of 5.5). Thus we conclude (a) that a very strong association exists between perceived risk and rate of self-reported use of marijuana, and (b) that this pattern of association has not changed much, especially since 1980.⁵

The data for disapproval tell much the same story. Those who disapproved strongly of regular marijuana use also reported low levels of actual use (means average 1.4 on the scale of 1 to 7), those who "merely" disapproved showed consistently higher mean levels of use (about 2.8), and those who did not disapprove showed much higher mean levels of use (about 5.2). In other words, although in each year following 1979 increased proportions of seniors disapproved of regular marijuana use, the amounts of use associated with each level of disapproval remained essentially the same; thus "nondisapprovers" still report high mean levels of actual marijuana use, but nowadays far fewer seniors do not disapprove of regular marijuana use.

Table 3 suggests the following primary conclusion: if there had not been substantial secular trends in attitudes about marijuana, starting in the late 1970s, the (smaller) secular trend in actual use probably would not have occurred. In a sense, it appears that "controlling for" the recent rise in perceived risks and disapproval is one way of "accounting for" the corresponding downturn in marijuana use. Yet a question arises naturally: is a reverse explanation equally plausible? Could one just as well "explain" the shifts in attitudes by controlling trends in marijuana use? Analyses that were essentially the mirror image of those reported in Table 3 produced a negative answer to that question. We found that "... controlling for the behavior of marijuana use does nothing to reduce or 'explain away' the upward trend from 1978 through 1985 in negative attitudes about marijuana. Subgroups consisting of frequent users, infrequent users, and non-users, all show substantial increases in the proportions who disapprove of marijuana use and perceive that such use is risky" (Bachman, Johnston, O'Malley, and Humphrey 1986: 14). In addition, these findings held true not only for views about

regular use, but also for views about occasional and experimental use of marijuana.

Before leaving Table 3 we call attention to the coefficients summarizing the strength of correlation between each of the attitudes and annual marijuana use. They are much larger than any of the correlations displayed in Table 2, and reflect the very close association between individuals' expressed views about marijuana and their reports of actual use. (We also note in passing some downward shift in the size of correlations involving perceived risks, which reflects not a shift in the shape of the relationship—as has been demonstrated—but rather a reduction in variance; more than one-third of all seniors in 1976–78 saw slight or no risk in regular use, whereas in the classes of 1985 and 1986 only seven percent were equally sanguine.)

Multivariate Analyses Combining Lifestyle Factors, Attitudes, and Secular Trends

The above analyses examined separately each of 11 classes of high school seniors, reporting bivariate relationships between marijuana use and each of several factors that may influence such use. These analyses reveal a number of important relationships as well as trends across the past decade, but we do not yet see clearly how these findings are interrelated. We turn now to that task.

Our approach to analysis is relatively simple: we computed product-moment correlations (two matrices, one based on questionnaire Form 5 data and the other based on questionnaire Form 3 data), carried out multiple regression analyses using various sets of predictors, and compared predictor sets to ascertain unique and overlapping portions of explained variance. Although this general strategy is not at all out of the ordinary, the correlation matrices are unusual in some respects. Each matrix is based on an analysis file which pools data from all 11 classes of seniors. One obvious reason for such pooling is that it is a useful way to simplify reporting, because we have shown already that correlations between marijuana use and the other variables either remained unchanged or changed only modestly during the past decade.

A much more important reason for pooling the data across cohorts is that it permitted us to assign a new variable to each individual,

consisting of the mean marijuana use (during the previous 12 months) reported by all seniors during the year in which the individual graduated. Thus we were able to include in each matrix the correlation between individual marijuana use and mean marijuana use among seniors for that year. We interpret that correlation as reflecting the extent to which individual variance in marijuana use over the past decade is "explainable" or "interpretable" in terms of the overall secular trend in use. Accordingly, sometimes we refer to this variable as a measure of the secular trend in marijuana use.⁶

We computed two sets of correlations using the pooled data sets described above. (Both matrices are presented in the appendix.) One matrix, based on Form 5, includes annual marijuana use, the set of eight dimensions that appear in Table 2, perceived risk of regular marijuana use, and the new variable indicating the secular trend in marijuana use. The other matrix, based on Form 3, includes the disapproval measure instead of the measure of perceived risk, and otherwise is the same as the first matrix. (Thus most of the correlations in one matrix are replicated in the other matrix. The replications are nearly identical; we attribute the small disparities to random differences between Form 3 and Form 5 subsamples, rather than to any differential question context effects induced by the two forms. Preliminary analyses of correlations and regression coefficients computed separately for males and females revealed no important differences; accordingly, the analyses presented here are based on combined data for both sexes.)

Table 4 presents a series of regression analyses in which several sets of variables are used to predict individual seniors' self-reported amounts of marijuana use during the past year. Three predictor sets, examined separately and then in combination, are: (Set A) the eight variables presented in Table 2 ("lifestyle" dimensions, plus sex); (Set B) perceived risks of regular marijuana use (upper half of Table 4), or personal disapproval of regular marijuana use (lower half of Table 4); (Set C) mean marijuana use for all seniors during year of graduation (secular trend in marijuana use).

The lifestyle variables in Set A account for 25 percent of the variance in annual marijuana use. The standardized regression coefficients indicate that truancy, religious commitment, and eve-

nings out are the most important predictors, consistent with our earlier findings (Bachman et al.: 1981).

Jumping ahead to Set C, we can see that the overall secular trend in marijuana use can account for only a small amount of variance in individual use (about 1.5%). This finding serves as a useful reminder that although year-to-year variations in marijuana use over the past decade are important and interesting, such variations remain small in comparison to the wide range of variability among seniors within each year of the study.

The findings thus far make it clear that if one wished to predict marijuana use by a high school senior during the past decade, knowing the senior's religiosity, patterns of truancy, and evenings out would be much more helpful than knowing the year of graduation. But one would do better still with both types of predictors, as indicated by the regression findings for Set A + C. The particular importance of this part of the analysis is the finding that including the lifestyle variables (Set A) as predictors does not substantially change the beta coefficients for the secular trend measure (Set C). In other words, most of the secular trend cannot be "explained" by the lifestyle variables.

Turning now to Set B, we see that the single measure of perceived risk correlates more strongly with marijuana use than does the whole group of predictors in Set A, and that the single measure of disapproval correlates still more strongly. Yet the real point of the analysis is evident when we compare Set B with Set B + C; we find that in the presence of either of the attitude measures, the secular trend effect is reduced essentially to zero. For the sake of completeness, we note the same finding when the Set A variables are included; comparing Set A + B with Set A + B + C, we see again that when an attitude measure appears in the equation, the secular trend measure makes no addition to explained variance.

In sum, comparisons among these regression analyses indicate that the secular trend in marijuana use cannot be "explained" in terms of the lifestyle measures included in Set A, but the trend can be "explained" either by the measure of perceived risk or by the measure of disapproval.⁷

An additional observation can be based on the regression results for Set A + B (or Set

TABLE 4. Multiple Regression Analyses Predicting Annual Marijuana Use (1-7 Scale for A) Lifestyle Variables, B) Attitudes about Marijuana, and C) Mean Marijuana Use Per Year: High School Seniors, Classes of 1976-1986, Combined

Data from Questionnaire Form 5								
Predictor	r	A.	B.	C.	A. + B.	A. + C.	B. + C.	A. + B. + C.
A. Lifestyle variables								
Grades	-.202	-.090			-.068	-.093		-.067
Truancy	.363	.239			.160	.233		.160
Hours worked per week	.128	.070			.035	.055		.037
Average weekly income	.123	-.005*			.025	.014		.022
Religious commitment	-.256	-.148			-.079	-.152		-.077
Political beliefs	.174	.107			.059	.105		.059
Evenings out per week	.321	.226			.150	.220		.151
Sex (M = 1, F = 2)	-.112	-.035			-.013	-.033		-.013
B. Perceived risk of regular marijuana use	-.574		-.574		-.452		-.586	-.458
C. Mean marijuana use per year	.125			.125		.105	-.042	-.019
R		.496	.574	.124	.647	.507	.576	.648
R ²		.246	.330	.016	.419	.257	.331	.420
Data from Questionnaire Form 3								
Predictor	r	A.	B.	C.	A. + B.	A. + C.	B. + C.	A. + B. + C.
A. Lifestyle variables								
Grades	-.206	-.091			-.045	-.094		-.045
Truancy	.362	.239			.135	.233		.135
Hours worked per week	.117	.038			.011	.021		.012
Average weekly income	.131	.028			.038	.047		.037
Religious commitment	-.269	-.171			-.051	-.176		-.051
Political beliefs	.170	.090			.025	.089		.025
Evenings out per week	.315	.219			.111	.213		.111
Sex (M = 1, F = 2)	-.114	-.030			-.018	-.030		-.018
B. Disapproval of regular marijuana use	-.677		-.677		-.573		-.680	-.574
C. Mean marijuana use per year	.120			.120		.105	-.015	-.003*
R		.497	.677	.120	.713	.507	.678	.713
R ²		.247	.459	.015	.508	.257	.459	.508

* $p > .05$.

Note: Entries in the first column are product-moment correlation coefficients (r); entries in the bottom rows are multiple correlation coefficients (R and R^2), adjusted for degrees of freedom; all other table entries are standardized regression coefficients.

A + B + C, as the results are essentially identical). Although the attitude measure (either perceived risk or disapproval) is by far the most powerful predictor, the fact that other predictors, such as truancy and evenings out, retain appreciable standardized regression coefficients suggests that at least portions of their relationships with marijuana use do not occur through their impacts on attitudes. That finding leaves open various other causal interpretations, including the possibility that marijuana use (or intention to use) contributes to truancy and

evenings out. (This interpretation is compatible with the notion that the very slight secular trends downward in truancy and evenings out may be consequences, more than causes, of the recent downward trend in marijuana use.)

CONCLUSIONS

Our purpose in this paper is to reach a better understanding of the recent decline in marijuana use. Using data from 11 annual surveys of high

school seniors (1976-1986), we have explored two possible explanations for the decline in marijuana use from 1979 through 1986.

First we considered whether young people have become more "conservative" and less "trouble-prone" in general, and whether any such changes were sufficient to account for the decline in marijuana use. Our analysis confirmed the importance of a variety of lifestyle factors; together these factors can account for fully 25 percent of the variance in marijuana use. Moreover, some dimensions show trends consistent with the decline in marijuana use: truancy and frequency of evenings away from home have declined slightly during the 1980s. On the other hand, religious commitment also has declined slightly during the 1980s, a shift opposite to what we would expect to reduce marijuana use. More important, both bivariate and multivariate analyses show that controlling for these lifestyle factors has little or no impact on the secular trend in marijuana use. Thus we conclude that although individual differences in lifestyle are very important in understanding individual variations in marijuana use, the data offer no support for the proposition that any sort of overall conservative shift underlies the recent decline in marijuana use.

Then we considered whether there have been specific changes in views about marijuana and its risks, and whether any such changes were sufficient to account for the decline in marijuana use. We showed that both perceived risks and personal disapproval of marijuana use, especially regular use, have risen sharply since 1978. Moreover, both the bivariate and the multivariate analyses indicate that in the presence of controls either for perception of risks or for disapproval, the recent secular trend in marijuana use disappears. Thus the data suggest strongly that if there had not been a distinct increase in negative attitudes about marijuana, we would not have found steadily lower levels of marijuana use in each succeeding class of high school seniors since 1979.

In this analysis we chose to focus on two dimensions which we consider especially important and revealing, but we noted also that other dimensions show somewhat parallel trends: increased proportions of seniors these days perceive that their friends disapprove of marijuana use, and fewer perceive that their friends use marijuana (Johnston 1985; Johnston et al.

1987). Although such analyses lie beyond the scope of the present paper, we are confident that analyses of these other measures would have produced results similar to those we found for perceived risks and disapproval, though perhaps not quite as strong.

Some additional findings from the regression analyses (Table 4) will round out our understanding of interrelationships among lifestyle factors, attitudes, marijuana use in general, and secular trends in use. Lifestyle factors largely overlap attitudes, especially disapproval, in predicting drug use. In our discussion thus far we have stressed that disapproval shifted substantially during the 1980s, while lifestyle factors changed rather little; nevertheless, it is also true that some of the lifestyle factors have been correlated strongly with disapproval of marijuana use throughout the last decade. Thus it seems useful to conceive of disapproval in part as an intervening variable through which lifestyle factors exert some of their effect upon marijuana use.

Carrying the above ideas a step further, we believe that the following are the *dominant*, but not exclusive, directions of causation among the dimensions we have been examining: 1) disapproval has a direct effect on marijuana use; 2) lifestyle factors have direct effects on marijuana use, as well as indirect effects via disapproval; 3) perceptions of risk have direct effects on marijuana use, as well as indirect effects via disapproval.⁸ Moving beyond the boundaries of the present analysis, we believe also that changes in the social environment, primarily changes in information about marijuana, have led to a secular trend in perceptions of risk, which has led in turn to secular trends in disapproval and in actual marijuana use.

The interpretation offered above, we believe, is consistent with the data reported in this paper, as well as with other analyses based on this data set. We have not, however, presented this interpretation as a formal model to be estimated, partly because of limitations in the data set but also because of a fundamental appreciation of the difficulties in sorting out some causal issues involving drug use. As an example, consider whether frequent evenings away from home "cause" higher marijuana use, or the reverse. For some individuals, being away from home in the evening may be a completely necessary condition for marijuana use, and thus an

essential ingredient in the causal chain. The causal chain is complex, however, because often an evening out may be undertaken specifically in order to smoke marijuana, and thus is "caused" by the intention or desire to use marijuana. For other individuals, however, being out for an evening—prompted by considerations other than an interest in marijuana—sometimes may lead to (help to cause) the use of marijuana. We may really be illustrating the futility of trying at this individual level to sort out causal patterns in any definitive sense. We can make useful conceptual distinctions between behavioral intentions and actual behaviors, and we can consider whether individual attitudes about marijuana precede or follow (or both) individual behaviors and intentions, but trying to allocate portions of correlations to one or another of these causal pathways seems an intractable problem—certainly with our present data, and quite possibly with any other sort of survey data.

In the present paper we are not trying to seek any definitive settlement of the alternative causal interpretations illustrated above; we simply wish to take these possibilities into account as we focus on the more limited task of understanding recent *trends* (not necessarily individual changes) in marijuana use. Here, we believe, we have some chance of grasping what has contributed to a reduction in the use of one drug; we may even be able to generate some useful ideas about what might affect future use of other drugs.

Our analysis has illustrated that when we look *either* at perceived risks *or* at disapproval, we can "account for" the decline in use in some important sense. We think that much the same would be true if we conducted similar analyses involving some of the other trending dimensions. We remain uncertain, however, about which of these factors may be most important—or, more to the point, which factors might be "movable" or "influenceable" and in turn might play a part in influencing other such factors and eventually influencing individual behavior. Here we must consider not only the data but also our conceptualizations of how the several factors in the social environment interact to help shape individual attitudes and intentions regarding marijuana.

Our own view is that the shifting views about risks are a fundamental factor, influencing individuals' own disapproval, the disapproval

they convey to others, and the disapproval that others convey to them. These kinds of changes would contribute to declining use by individuals, by their friends, and by their wider circles of acquaintances. In this scenario, then, the perceptions of greater risks "got the ball rolling" and provided the basis for increased personal disapproval and decreased (perceived) use by friends and acquaintances with each succeeding class of seniors since 1979.

Jessor (1985: 258), commenting on the "conventional wisdom" about efforts to reduce drug use, stated that "... the consensus among most researchers is that information alone is not effective in influencing behavior, and that negative information or 'scare tactics' are especially ineffective." We can understand how that conventional view may have arisen. Early efforts to dissuade students from use of marijuana often made exaggerated claims about harmful effects; meanwhile, students could observe readily that friends and acquaintances who used marijuana did not suffer such disastrous consequences. More recently, however, reports about the health consequences have been more balanced, have received better and more extensive media coverage, and have been based on much more extensive research. Similarly, reports about psychological consequences such as poor school performance, reduced interest in extracurricular activities, and impaired interpersonal relationships have now acquired the ring of truth: regular use of marijuana (and other drugs) has been widespread for a long enough time to give most students first-hand contact with at least a few classmates who fit the popular description of "burnout." Indeed, we have found that daily marijuana users themselves perceive some such consequences as stemming from their use of the drug (Johnston 1981). Thus it seems that direct observation, and the resulting vicarious learning, have become consonant in recent years with messages from "the system."

For those concerned with prevention, then, we think that at least two conclusions can be drawn from research linking attitudes toward drugs to actual drug use. First, scare tactics are not likely to work, particularly when contradicted by personal experiences. On the other hand, realistic information about risks and consequences of drug use, communicated by a credible source, can be persuasive and can play an important role in reducing demand, which

ultimately must be the most effective means of reducing drug use.

NOTES

1. The measures of perceived risk and disapproval appear in separate questionnaire forms, each as part of a larger set of questions asking about a variety of drugs. A small proportion of respondents each year respond in "straight-line" fashion to these item sets. On the one hand, a few respondents indicate that any use, even once or twice, of any of the drugs on the list involves "great risk" of harm; we suspect that such individuals are responding carelessly, while others really hold such strong views. On the other hand, when a respondent selects one of the less extreme ratings ("moderate risk," "slight risk," or "no risk") and applies that rating indiscriminately to all the drug-use behaviors listed (behaviors as disparate as regular heroin use and trying marijuana once or twice), we consider that the respondent is being careless and/or fails to understand the question. We take a similar view of any respondent who applies the same "don't disapprove" or "disapprove" (rather than "strongly disapprove") rating to all the drug-use behaviors in the question set. Accordingly, for all analyses in this paper involving perceived risks or disapproval, we deleted all respondents whose ratings failed to make any differentiation among drugs and levels of use, except for those who consistently indicated strong disapproval or great risk. (See Herzog and Bachman 1981 for a discussion of straight-line responding in questionnaires of the type used here.) We also deleted from these analyses any respondent who provided "inconsistent" answers for any of the drugs, such as no risk in smoking marijuana regularly but slight, moderate, or great risk in trying marijuana or using it occasionally. These deletions of what we judged to be "careless" responders had about the same effect for each of the 11 surveys included in this analysis; sample sizes for the disapproval items were reduced by about four or five percent, while for the perceived risk items they were reduced by three or four percent. Also deleted, of course, were respondents who failed to answer the item (about one percent of the sample for each item), as well as those who chose the "can't say, drug unfamiliar" response to the question on perceived risk of regular marijuana use (about three percent of the sample).
 2. We use the term "predictor" as a matter of convenience and because it is the familiar term used in the regression analyses that follow. We do not wish to imply, however, that a single direction of causation is assumed. Indeed, in some cases we note the possibilities for reciprocal causation.
 3. In addition to omitting background factors, the present analyses omit three lifestyle variables that appeared in our earlier analyses but were largely redundant with other predictors: curriculum (college preparatory) and college plans were omitted because they overlapped with two other stronger educational predictors, grades and truancy; frequency of dating was omitted because it added almost no predictive power beyond that provided by the measure of evenings out for recreation.
- The resulting smaller set of lifestyle and experience predictors used in the present analyses yields a multiple correlation coefficient of about .50 predicting marijuana use; if all the omitted predictors were included, the coefficient would increase only to about .51.
4. Product-moment correlations, which reflect linear relationship, are shown in the table, but we also calculated eta coefficients and compared them with the product-moment coefficients to ascertain whether nonlinear relationships were present. In all cases the two coefficients were virtually identical, indicating that relationships are almost completely linear. Thus we conclude that our use of linear regression in the later stages of this analysis is appropriate.
 5. Table 3 gives some indication that seniors in the mid-1980s who perceived "no risk" in regular marijuana use averaged lower levels of actual use than did their counterparts in the late 1970s or early 1980s. We do not consider this finding to be a genuine trend, for two reasons. First, the numbers of cases in this row are so small in the mid-1980s that the sampling errors for the means become rather large. The "no risk" row in Table 3 includes 12 or 13 percent of the total sample in the years 1976 through 78, but only 1.2 percent of the 1986 sample (about 36 cases). A second and more important consideration concerns the problem of careless responders, noted in the "methods" section of this paper. A surprisingly consistent number of individuals each year (ranging from 91 to 127) were screened out as having responded carelessly to the questions about risks; of these, about 30 each year would have been included in the "no risk" row of Table 3. Indeed, our failure to exclude these respondents in earlier versions of the table resulted in some distortion of the data for the 1970s, but much more severe distortion of the data for the mid-1980s (when they constituted one-third or more of the cases). We cannot assume that our present fairly limited screening has succeeded in weeding out all careless responders; therefore we suspect that some distortion may remain and that its effects are more serious in the "no risk" row of the table, where the small numbers of cases result in an especially troublesome "signal to noise ratio." (Incidentally, in Figure 2 we deal with this problem by combining the "no risk" and the "slight risk" categories.)
 6. An alternative approach would be to use year of graduation as our measure of the secular trend. If such trends in marijuana use and attitudes had been linear or nearly so (as they have been since 1979), we could have treated year of graduation as a single continuous variable; however, the curvilinearity of trends during the total period from 1976 through 1986 would require the use of a series of dummy variables, one for each year. We prefer the present approach not only because of its relative simplicity for computation and interpretation, but also because it focuses specifically on the secular trend in marijuana use.
 7. We place the term "explained" in quotation marks as a reminder of the arbitrary aspects of such regression analyses. We recognize that one could undertake instead to "explain" perceived risk or disapproval by treating marijuana use as the predictor. However, it would not be possible to reverse the analyses either in Table 3 or in Table 4 and fully "account for" the secular trends in perceived risks or disapproval by

including individual marijuana use as a predictor (see Bachman et al. 1986).

8. We could not compute correlations between the perceived risk and the disapproval measures using the annual surveys of seniors, because the two sets of

measures appear in different questionnaire forms. Both measures, however, were included in a special sample of about 1,000 seniors surveyed in 1979; consistent with the interpretation offered here, the two were correlated strongly ($r = .53$).

APPENDIX. Correlation Matrices

Matrix Based on Questionnaire Form 5

	1	2	3	4	5	6	7	8	9	10
1. Annual marijuana use (1-7 scale)<										
2. Grades	-.2019									
3. Truancy	.3628	-.2130								
4. Hours worked per week	.1281	-.0628	.1219							
5. Average weekly income	.1227	-.0629	.1262	.6560						
6. Religious commitment	-.2563	.1444	-.1951	-.0786	-.0797					
7. Political beliefs	.1743	-.0366	.1080	.0098	.0260	-.1482				
8. Evenings out per week	.3213	-.1157	.2361	.0451	.1214	-.1026	.0700			
9. Sex (M = 1, F = 2)	-.1117	.1512	-.0721	-.1022	-.1090	.1286	.0053	-.0937		
10. Perceived risk of regular marijuana use	-.5741	.1397	-.2716	-.0832	-.0492	.2334	-.1590	-.2369	.1034	-
11. Mean marijuana use per year	.1246	.0159	.0551	.0332	-.0727	.0287	.0148	.0472	-.0081	-.2848

Matrix Based on Questionnaire Form 3

	1	2	3	4	5	6	7	8	9	10
1. Annual marijuana use (1-7 scale)<										
2. Grades	-.2057									
3. Truancy	.3617	-.2124								
4. Hours worked per week	.1173	-.0709	.1162							
5. Average weekly income	.1313	-.0655	.1237	.6476						
6. Religious commitment	-.2689	.1503	-.1807	-.0734	-.0756					
7. Political beliefs	.1701	-.0370	.1233	.0267	.0181	-.1554				
8. Evenings out per week	.3150	-.1193	.2345	.0412	.1161	-.0822	.0856			
9. Sex (M = 1, F = 2)	-.1140	.1558	-.0757	-.1013	-.1062	.1304	-.0101	-.1001		
10. Disapproval of regular marijuana use	-.6773	.1819	-.2988	-.0908	-.0829	.2918	-.1887	-.2679	.0965	
11. Mean marijuana use per year	.1204	.0162	.0543	.0479	-.0695	.0319	.0181	.0484	.0023	-.1992

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Explaining the Recent Decline in Cocaine Use among Young Adults: Further Evidence That Perceived Risks and Disapproval Lead to Reduced Drug Use

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Journal of Health and Social Behavior 1990, Vol. 31 (June):173-184

This paper explores alternative explanations for the recent sharp decline in cocaine use among high school seniors, using questionnaire data from annual nationwide surveys conducted from 1976 through 1988. Results show important parallels with earlier analyses of the longer-term decline in marijuana use. Although lifestyle factors (e.g., religious commitment, truancy, evenings out for fun and recreation) show strong links with use of marijuana and cocaine, these factors have not developed trends in ways that can account for the declines in use of either drug. Reported availability of either drug has not been reduced. Instead, increases in perceived risks and disapproval appear to have contributed substantially to the recent declines in use of marijuana and cocaine. The findings provide strong support for the use of realistic information about risks and consequences as an important ingredient in efforts to prevent drug use. Coupled with the findings on availability, the results emphasize the importance of efforts to reduce demand (as opposed to supply).

It is hard to imagine any dimension of behavior in the last two or three decades that has changed more dramatically, or with more worrisome implications, than the use of illicit drugs by youths and young adults. Marijuana has been the most widely used; rates rose during the late 1960s and most of the 1970s, so that by 1979 fully two-thirds of young adults (age 18 to 25) and nearly as many high school seniors reported some consumption of the drug (Fishburne, Abelson, and Cisin 1980; Johnston, O'Malley, and Bachman 1989; National Institute on Drug Abuse 1988). Yet 1979 was a turning point: during the 1980s marijuana use among seniors and

recent graduates declined steadily (Johnston et al. 1989; O'Malley, Bachman, and Johnston 1988). The use of cocaine, a more dangerous illicit drug, followed a different trajectory; prevalence rose during the late 1970s, remained relatively unchanged during the first half of the 1980s, and then dropped by about 40 percent between 1986 and 1988 (Johnston et al. 1989).

Although the declines in rates of use for marijuana and for cocaine began at different points in time, they have two important features in common: 1) each was accompanied by a sharp shift in attitudes about the drug and 2) in each case the decline in use was *not* accompanied by any decline in perceived availability of the drug. For some years we have offered the hypothesis that the more danger young people associate with a drug, the less likely they will be to use it (e.g., Johnston 1982; Johnston, Bachman, and O'Malley 1981). In the case of marijuana, some of the earliest supporting evidence came in the form of the cross-time

* This work was supported by Research Grant R 01 DA 01411 from the National Institute on Drug Abuse. We thank Ginger Maggio and Daniel Zahs for their contributions in data analysis and manuscript preparation. Requests for reprints should be sent to Jerald G. Bachman, Institute for Social Research, University of Michigan, Ann Arbor, MI 48106-1248

aggregate-level trends in attitudes and use. Additional evidence supporting this interpretation was reported by Johnston (1982, 1985), who showed that concerns about marijuana's effects on physical and psychological health were among the leading reasons given by seniors for abstaining from or quitting marijuana use, *and* that the proportions of abstainers or quitters mentioning these reasons were increasing.

A more recent paper examined in detail the link between attitude changes and the decline in marijuana use (Bachman, Johnston, O'Malley, and Humphrey 1988). This analysis explored two possible contrasting explanations for the decline in marijuana use: 1) that young people have become more conservative in general, or 2) that specific changes in views about marijuana have led to the decline in use. We reached two broad conclusions. First, we found that "although individual differences in lifestyle are very important in understanding individual variations in marijuana use, the data offer no support for the proposition that any sort of overall conservative shift underlies the recent decline in marijuana use" (p. 107). Second, we noted that perceived risks of regular marijuana use, as well as personal disapproval of such use, rose sharply between 1978 and 1986; we concluded that "if there had not been a distinct increase in negative attitudes about marijuana, we would not have found steadily lower levels of marijuana use in each succeeding class of high school seniors since 1979" (p. 107).

While this appreciable decline in marijuana use was occurring during the first half of the 1980s, cocaine use remained at peak levels despite growing governmental efforts to contain its use. The national strategy was weighted heavily toward reduction of supply, but the empirical evidence, including our own trend data from seniors on perceived availability, suggested that the strategy was not working. Our belief that risk-related attitudes were important determinants of the secular trends in marijuana use led us to conclude that a shift in young people's perceptions of the risks associated with cocaine use—in particular with experimental and occasional use—would be necessary to achieve a reduction in use (e.g., Johnston, O'Malley, and Bachman 1984, 1985). The trends we eventually observed in perceived risk, disapproval, and active use of cocaine offer some support for

this hypothesis. In the present paper we examine more closely the link between changed attitudes about cocaine and the decline in its use; again we test the competing hypothesis that a general shift toward more conservative lifestyles might explain more clearly the recent downturn in cocaine use which has been occurring since 1986.

Following the strategy used in our recent analysis of marijuana, we divide predictors (i.e., correlates) of cocaine use into two categories: 1) individual "lifestyle variables," which relate not only to cocaine use but also to other drug use, delinquent behavior, and a variety of other "problem" behaviors, and 2) drug-specific factors, in this case those which relate directly to cocaine use. Although this distinction is too sharp and too simple to correspond fully to the real world, nonetheless it continues to be a useful way of organizing our data and analyses.

The lifestyle factors again include grades, truancy, hours worked per week, average weekly income, religious commitment, political liberalism/conservatism, and frequency of evenings out for recreation. Sex of respondent is also included, in part as a proxy for other lifestyle factors not measured.

The earlier analysis of marijuana examined two drug-specific factors, perceived risk of marijuana use and disapproval of marijuana use, and found that changes in these dimensions could account for virtually all of the secular trends in marijuana use from 1976 through 1986 (Bachman et al. 1988). The present analyses focus on another drug and another set of drug-specific dimensions, perceived risk of cocaine use and disapproval of cocaine use. We also include some data on another drug-specific dimension, availability (or, more accurately, perceived availability).

METHODS

Subjects

The data for these analyses were obtained from the "Monitoring the Future" project, an ongoing study of youths conducted by the Institute for Social Research, which has surveyed a nationally representative sample of high school seniors each year since 1975. The study design is described briefly in our previous report (Bachman et al. 1988), and has been described extensively elsewhere

(Bachman and Johnston 1978; Bachman, Johnston, and O'Malley 1987; Johnston et al. 1989). The present analyses are based on group-administered questionnaire data collected from seniors in 13 graduating classes, 1976 through 1988.

About 17,000 seniors are surveyed each year; annual sample sizes reported here, however, are just over 3,000 because each annual survey includes five different questionnaire forms, and the items dealing with beliefs and attitudes about drugs appear on single forms. Because of the large numbers of cases, sampling errors are very small; any relationship that we treat as substantively important far surpasses conventional standards for statistical significance.¹

Measures

The questionnaire items dealing with cocaine use, perceived risks of cocaine use, and personal disapproval of cocaine use are presented in Table 1. Descriptions of most other measures are reported in Bachman et al. (1988, Table 2). Complete wordings of all

items in all questionnaire forms, along with response distributions and missing data rates, have been published separately (see Bachman et al. 1987 and prior volumes in the same series). The analyses reported here focus on the measure of drug use during the previous 12 months. Recent analysis based on four waves of panel data yielded reliability estimates of .82 for the 12-month measure of cocaine use and .88 for the 12-month measure of marijuana use, calculated by the Wiley and Wiley (1970) method.

RESULTS

Overview of Trends in Attitudes, Perceptions, and Behaviors Regarding Drugs

Before presenting bivariate and multivariate relational analyses, we briefly review key trends in use, perceived risk, disapproval, and perceived availability for both marijuana and cocaine, based on all classes of high school seniors from 1976 through 1988. The left-hand side of Figure 1 summarizes some of our

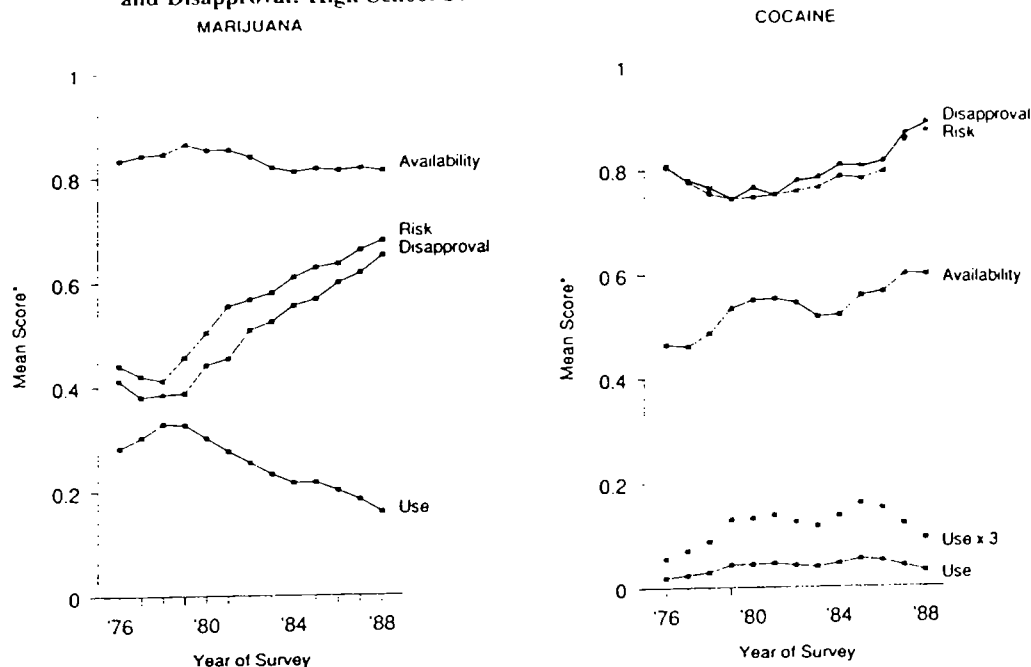
TABLE 1. Measures of Cocaine Use, Perceived Risk, and Disapproval

Question Text	Response Alternatives
<i>Cocaine Use (Forms 1-5)</i>	
On how many occasions (if any) have you used cocaine (sometimes called "coke") . . .	1. 0 Occasions
. . . in your lifetime?	2. 1-2 Occasions
. . . during the last 12 months?	3. 3-5 Occasions
. . . during the last 30 days?	4. 6-9 Occasions
	5. 10-19 Occasions
	6. 20-39 Occasions
	7. 40 or More
<i>Perceived Risk (Form 5 Only)^a</i>	
The next questions ask for your opinions on the effects of using certain drugs and other substances. How much do you think people risk harming themselves (physically or in other ways), if they . . .	1. No Risk
Try cocaine once or twice	2. Slight Risk
Take cocaine regularly	3. Moderate Risk
	4. Great Risk
	5. Can't Say, Drug Unfamiliar
<i>Disapproval (Form 3 Only)^b</i>	
Individuals differ in whether or not they disapprove of people doing certain things. Do YOU disapprove of people (who are 18 or older) doing each of the following?	1. Don't Disapprove
Trying cocaine once or twice	2. Disapprove
Taking cocaine regularly	3. Strongly Disapprove

^a An index of perceived risk was computed as the mean of these two items (no missing data allowed). "Can't say" responses were treated as missing data.

^b An index of disapproval was computed as the mean of these two items (no missing data allowed).

Figure 1. Trends in Annual Marijuana and Cocaine Use, Perceived Availability, Perceived Risk, and Disapproval: High School Seniors, 1976-1988



All items were scaled with the minimum possible score set equal to 0 and the maximum possible score set equal to 1.

earlier findings: both perceived risk and disapproval associated with marijuana use declined slightly during the first year or two and then rose strongly and steadily during the 1980s, while self-reported *use* of marijuana initially increased and subsequently declined steadily. The figure also shows that perceived availability of marijuana remained nearly unchanged; throughout the whole period the great majority (85%-90%) of seniors thought it would be fairly easy or very easy to obtain marijuana. Thus it seems clear that availability did not play an important role in the recent changes in marijuana use, at least in those changes which occurred in the last decade or so.

The trends involving cocaine, also displayed in Figure 1, match the findings for marijuana in that the trend in self-reported cocaine use shows a fairly close inverse relationship to the trends in perceived risks and in disapproval, particularly during the recent period in which cocaine use was declining. (Because the mean rates of cocaine use are very low, it is difficult to detect the trends on the scale used in Figure 1; in order to present those findings more clearly, we added the dotted line showing the trend in cocaine use multiplied by three.) Again as in the pattern for marijuana, the decline in

cocaine use could not be linked to availability because perceived availability actually rose somewhat during the recent decline in use.

In several other ways, however, the findings for cocaine and those for marijuana, as shown in Figure 1, are substantially different. We note first that the perceived availability of cocaine shifted much more strongly over this period than did the perceived availability of marijuana; in particular, during the late 1970s, when self-reported cocaine use was increasing, increasing proportions of seniors also felt that they could obtain cocaine if they desired it. Other contrasts also exist between the two drugs: throughout the study period cocaine was perceived as more dangerous than marijuana, was disapproved more strongly, was seen as less easily available, and was used less frequently and by smaller proportions of seniors.

In sum, Figure 1 shows that attitudes and behaviors regarding cocaine have differed from those regarding marijuana in many respects. Yet the figure also shows clearly the two points of consistency across drugs that we mentioned earlier: for each drug the decline in use was accompanied (or preceded) by 1) increases in perceived risk and disapproval but 2) no decline in perceived availability.

Trends in Cocaine Use, with Lifestyle Factors Controlled

We examined bivariate relationships between each of the lifestyle variables and cocaine use for each of the 13 senior classes (1976–1988). These analyses are reported in detail elsewhere (Bachman, Johnston, and O'Malley 1989, Table 2); the conclusions (which parallel our earlier findings for marijuana) are summarized below.

First, over all 13 senior classes there is a great deal of consistency in relationships between lifestyle factor and cocaine use—the same factors that are predictive in one year are also predictive in other years. Specifically, high school seniors at greatest risk for involvement in cocaine use have been males, those with poorer grades, those high in truancy, those who work long hours in part-time jobs (during the school year), those with relatively high incomes (linked, of course, to long hours of part-time work), those with little or no commitment to religion, those who describe their political preferences as radical, and those who frequently spend evenings out “for fun and recreation.”

Second, there have been no very large secular trends in these lifestyle factors—certainly none of a size and pattern that would be likely to explain the recent trends in cocaine use.

Does controlling any one of the lifestyle factors have the effect of eliminating the secular trend in cocaine use? We found that it clearly does not. We examined each subgroup for each of the lifestyle measures, with results of the sort illustrated in Figures 2 and 3. In virtually every subgroup, cocaine use rose from 1976 through 1980 and declined from 1986 through 1988. Even so, there are important subgroup differences in the strength of the secular trend; the pattern is always more pronounced for those in the “higher-risk” categories. As Figure 2 shows, among seniors who reported relatively high rates of truancy, mean cocaine use rose sharply from 1976 through 1980 and declined sharply from 1986 through 1988; among seniors who reported no truancy, however, these differences from one class to another are much weaker. Similarly, the findings in Figure 3 show the most pronounced secular trend among the “higher-risk” individuals (those lowest in religious commitment). Here again, however, the overall secular trend is discern-

Figure 2. Trends in Annual Cocaine Use Shown Separately for Five Levels of Truancy: High School Seniors, 1976–1988

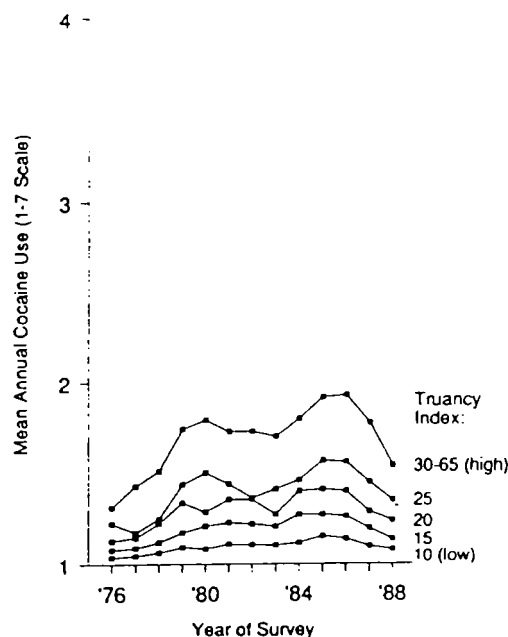
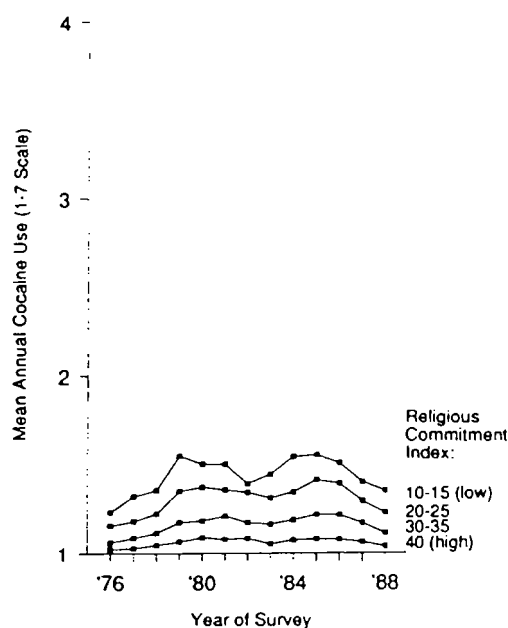


Figure 3. Trends in Annual Cocaine Use Shown Separately for Four Levels of Religious Commitment: High School Seniors, 1976–1988



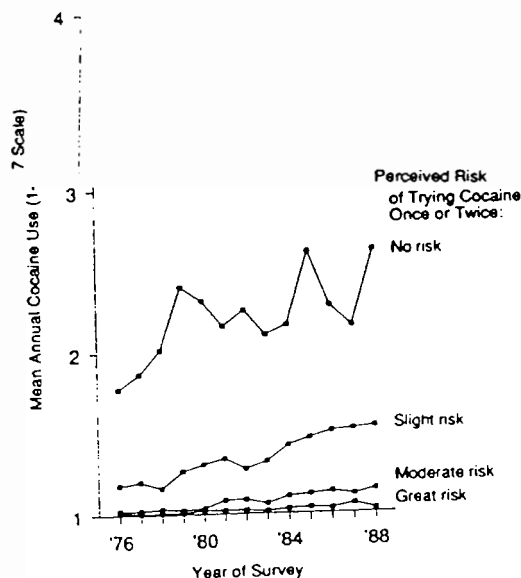
ible in all subgroups; each shows some rise during the late 1970s and some decline from 1986 onward.

*Trends in Cocaine Use,
with Attitudes Controlled*

What happens to the secular trend in cocaine use if we control either perceived risks or disapproval? We reported above that for every category of each of the lifestyle variables, the same basic secular trend in cocaine use was evident. In other words, the secular trend did not disappear in the face of (bivariate) "controls" for lifestyle factors. For the attitude variables, however, the story is quite different, as illustrated in Figure 4. Practically none of the seniors with strongly anticocaine attitudes reported any use of the drug, no matter in which year; thus there was no room for a downturn to occur in the 1986-to-1988 interval. At the other end of the attitude continuum, among seniors in the small (and, in recent years, shrinking) categories expressing the most "accepting" attitudes regarding cocaine, rates of use rose from 1976 through 1979 and showed mostly random fluctuations thereafter. The trends shown in Figure 4 contrast sharply with those in Figures 2 and 3; specifically, we do not observe a clear downturn in use when we control levels of perceived risk (see Bachman et al. 1989, Table 3, for further details).

These bivariate analyses suggest a conclusion that parallels (in its general form) the one we reached earlier with respect to marijuana:

Figure 4. Trends in Annual Cocaine Use Shown Separately for Four Levels of Perceived Risk of Trying Cocaine: High School Seniors, 1976-1988



if there had not been a substantial secular trend in attitudes and beliefs about cocaine, starting in about 1986, the (smaller) downward secular trend in cocaine use very likely would not have occurred.

Multivariate Analyses Combining Lifestyle Factors, Attitudes, and Secular Trends

All of the preceding analyses involved separate computations for each of 13 classes of high school seniors. We noted parallels among trends (Figure 1); we also observed that in each class cocaine use was linked consistently to a number of lifestyle factors and was correlated strongly with both perceived risks and disapproval. Now we turn to the task of discovering how these several sets of trends and correlations are interrelated.

Our multivariate analyses employ the same strategy as we used in studying the recent decline in marijuana use (Bachman et al. 1988). We computed product-moment correlations (two matrices, one based on questionnaire Form 5 data and the other based on questionnaire Form 3 data), carried out multiple regression analyses using various sets of predictors, and compared predictor sets to ascertain unique and overlapping portions of explained variance. The analyses are somewhat unusual because 1) the correlation matrices pooled data across cohorts (graduating classes) and 2) we assigned a new variable to each individual, consisting of the mean cocaine use (during the previous 12 months) reported by all seniors during the year in which the individual graduated. Thus we were able to include in each matrix the correlation between individual cocaine use and mean cocaine use among seniors for that year. We interpret that correlation as reflecting the extent to which individual variance in cocaine use over a number of years is "explainable" or "interpretable" in terms of the overall secular trend in use. Accordingly we sometimes refer to mean use per year as a measure of the secular trend in cocaine use.

Our initial regression analyses involving cocaine use included all 13 classes (1976 through 1988). The results did not replicate fully our findings for marijuana. Specifically, we found that attitudes about cocaine could not account fully for secular trends in cocaine use across the 13 years. This result was not altogether surprising because we had noted

already that the period of sharp increase in cocaine use during the late 1970s was not accompanied by equally sharp changes in perceived risks or disapproval. Because we focus primarily on *declines* in use linked to increases in perceived risk and disapproval, we repeated the analyses focusing only on the four graduating classes of 1985 through 1988. (The two correlation matrices based on this 1985–88 interval, as well as the matrices based on the 1976–88 interval, are included as an appendix in Bachman et al. 1989, along with some commentary on the differences and similarities between results for the two

intervals.) Our presentation and discussion of regression analyses are based on the shorter 1985–1988 interval.

Table 2 presents the results of a series of regression analyses in which several sets of variables are used to predict individual seniors' self-reported annual cocaine use, based on data from the classes of 1985–88. Three predictor sets, examined separately and then in combination, are (Set A) the seven "lifestyle" dimensions, plus sex of respondent; (Set B) perceived risks of cocaine use (upper half of Table 2), or personal disapproval of cocaine use (lower half of Table 2);

TABLE 2. Multiple Regression Analyses Predicting Annual Cocaine Use (1–7 Scale) for A) Lifestyle Variables, B) Attitudes about Cocaine, and C) Mean Cocaine Use per Year: High School Seniors, Classes of 1985–1988, Combined

Perceived Risk (Data from Questionnaire Form 5)								
Predictor	r	A.	B.	C.	A. + B.	A. + C.	B. + C.	A. + B. + C.
A. Lifestyle Variables								
Grades	-0.130	-0.069			-0.042	-0.068		-0.042
Truancy	0.212	0.142			0.106	0.143		0.106
Hours worked per week	0.099	0.047			0.035	0.043		0.035
Average weekly income	0.103	0.023			0.020*	0.030		0.019*
Religious commitment	-0.141	-0.081			-0.034	-0.083		-0.034
Political beliefs	0.111	0.074			0.047	0.074		0.047
Evenings out per week	0.179	0.123			0.078	0.122		0.078
Sex (M = 1, F = 2)	-0.040	0.007*			0.013*	0.008*		0.013*
B. Perceived Risk of Cocaine Use (index)								
	-0.427		-0.427		-0.375		-0.430	-0.375
C. Mean Cocaine Use per Year								
	0.064			0.064		0.071	-0.016*	-0.001*
R		0.295	0.427	0.063	0.465	0.303	0.427	0.465
R ²		0.087	0.182	0.004	0.216	0.092	0.182	0.216
Disapproval (Data from Questionnaire Form 3)								
Predictor	r	A.	B.	C.	A. + B.	A. + C.	B. + C.	A. + B. + C.
A. Lifestyle Variables								
Grades	-0.124	-0.067			-0.035	-0.067		-0.035
Truancy	0.235	0.180			0.098	0.181		0.098
Hours worked per week	0.067	0.008*			0.003*	0.005*		0.003*
Average weekly income	0.090	0.034			0.027	0.039		0.028
Religious commitment	-0.148	-0.099			-0.023	-0.101		-0.023
Political beliefs	0.067	0.029			-0.011*	0.028		-0.011*
Evenings out per week	0.161	0.107			0.051	0.106		0.051
Sex (M = 1, F = 2)	-0.032	0.011*			0.007*	0.011*		0.007*
B. Disapproval of Cocaine Use (index)								
	-0.534		-0.534		-0.493		-0.535	-0.493
C. Mean Cocaine Use per Year								
	0.061			0.061		0.068	-0.008*	0.002*
R		0.295	0.534	0.060	0.551	0.303	0.534	0.551
R ²		0.087	0.285	0.004	0.304	0.092	0.285	0.304

* $p > .05$.

Note: Entries in the first column are product-moment correlation coefficients (r); entries in the bottom rows are multiple correlation coefficients (R and R^2), adjusted for degrees of freedom; all other table entries are standardized regression coefficients.

(Set C) mean cocaine use for all seniors during year of graduation (secular trend in cocaine use).

The lifestyle variables in Set A account for about 9 percent of the variance in annual cocaine use. This finding contrasts sharply with the 25 percent of variance in marijuana use explained by the same set of variables in our earlier analysis; the lower explained variance is not surprising, however, when we consider that cocaine involves many fewer users and much less frequent use than marijuana. Here again, consistent with our earlier findings (Bachman et al. 1981, 1988), the standardized regression coefficients show that truancy, religious commitment, and evenings out are the most important predictors. (Grades also are important, but overlap somewhat with the truancy measure.)

Looking next at Set C, we find that the overall secular trend in cocaine use can account for only a very small amount of variance in individual use (about 0.4%). (Incidentally, the comparable figure for the full 13-year interval from 1976 to 1988 is scarcely larger—about 0.5%.) Here, as for marijuana, the findings remind us that although the recent year-to-year declines are important and interesting, such variations remain small in comparison to the range of individual variability among seniors within each year of the study.

The separate findings for Sets A and C show clearly that if one wished to predict cocaine use by a high school senior during recent years, knowing the senior's frequency of evenings out, religious involvement, and adjustment in school would be far more useful than knowing the year of graduation. Yet when we observe the regression findings for Set A + C, it is clear that we can predict even more accurately using both types of predictors. The key point here is that including the lifestyle variables (Set A) as predictors does not at all diminish the relationship with the secular trend measure. In fact, the regression coefficient for the secular trend measure is increased slightly in the presence of Set A predictors, and the variance unique to secular trend rises slightly to 0.5 percent—calculated by subtracting the R-squared value for Set A from the R-squared value for Set A + C. In other words, none of the secular trend can be "explained" by the lifestyle variables.

Finally, Set B shows clearly (as in our analysis of marijuana) that the single measure

of perceived risk correlates more strongly with cocaine use than does the whole group of predictors in Set A, and that the single measure of disapproval correlates still more strongly.

The most important stage in the multivariate analysis is reached when we consider whether there is any relationship unique to the secular trend measure when either of the attitude measures is included in the equation. Here, although the coefficients are smaller than in our analysis of marijuana, the pattern of findings leads to exactly the same conclusion: in the presence of either of the attitude measures, the secular trend effect is reduced essentially to zero (on the basis of a comparison of Set B with Set B + C). The same finding emerges when we include the Set A variables (comparing Set A + B with Set A + B + C).

In sum, the regression analyses of cocaine use reported in Table 2, like our earlier analyses of marijuana use, show that the recent downturn in use cannot be explained in terms of the lifestyle measures included in Set A, but can be explained in terms of increases in perceived risks and/or in disapproval.

The statement above is specific to the recent *decline* in cocaine use; as noted earlier, changes in perceived risk and disapproval do not provide an adequate explanation for the *rise* in cocaine use that was observed in the late 1970s.²

Explaining the rise in cocaine use must involve other variables; the same is probably true for marijuana and for other illicit drugs. We discuss this matter briefly in the next section.

DISCUSSION

In this paper we set out to learn more about the recent decline in cocaine use among high school seniors; in particular, we suspected that the decline was caused by recent increases in perceived risks and disapproval associated with cocaine use. We repeated the strategies and procedures used in our earlier analysis of the decline in marijuana use (Bachman et al. 1988); the basic results replicate our earlier findings. In some other respects, however, the findings for cocaine stand in contrast to those for marijuana; yet several of these differences actually tend to

strengthen our general conclusions about factors underlying trends in drug use.

For example, seniors have been far more likely to view cocaine use as risky and as something to be disapproved than has been the case for marijuana (see Figure 1). In keeping with those differences, actual use of cocaine among seniors has been much lower than marijuana use (and because of the resulting lower variance, our correlations involving cocaine use tend to be smaller than those involving marijuana use). Thus we find it all the more important that in spite of large differences in attitudes, rates of use, and size of correlations, the present findings linking attitude changes to the decline in cocaine use have so much in common with our earlier findings about the decline in marijuana use.

Another significant difference between marijuana and cocaine involves seniors' estimates of how easy it would be to obtain each drug. Marijuana consistently has been viewed by large majorities as readily available, whereas the mean ratings of cocaine availability have been much lower. Thus availability (or at least perceived availability) may have been much more of a limiting factor in the case of cocaine. Although perceived availability of cocaine rose appreciably during the late 1970s, when use also was rising, it is important to recall that during the recent decline in cocaine use there was no decline in perceived availability. Thus our findings for cocaine, like those for marijuana, show that use can decline without any corresponding decline in perceived supply. (It is quite possible, however, that the earlier *rise* in perceived availability may have facilitated the rise in cocaine use.)

One other distinction between the findings for marijuana and for cocaine, particularly important for our present conclusions, involves the shape and the timing of the secular trends in use. Although use of both drugs increased until 1978, the trends were distinctly different after that. Marijuana use declined fairly steadily from 1979 onward, so that by 1988 annual usage rates (either mean use or percentage reporting any use) were about half as large as for the class of 1979. For cocaine, however, the first clear decline did not occur until after the 1986 survey; then it was so steep that only two years later annual use had fallen by about 40 percent.

We would find it hard to argue plausibly that such different secular trends in the use of

these two drugs could have been caused by some *general* trend among young people toward becoming more "conservative" or less "trouble-prone" in recent years. (Moreover, such an argument would be strained further to accommodate still other trend patterns for other drugs.) Changes in *drug-specific* factors, on the other hand, correspond clearly to the declines in both marijuana use and cocaine use. As displayed in Figure 1, perceived risks and disapproval regarding marijuana rose steadily from 1978 or 1979 onward; in the case of cocaine, perceived risks and disapproval rose sharply after 1986. Both the bivariate and the multivariate analyses suggest strongly that if these changes in attitudes about each drug had not occurred, we would not have observed any recent declines in use.

We have not attempted in this paper to formulate an overall theory of drug use, nor have we undertaken the (slightly) more limited task of formulating a theory of *secular trends* in drug use (but see Johnston forthcoming for an initial effort in the latter direction). The present findings, however, prompt two observations that would seem appropriate to incorporate into any general theory of drug use and trends in such use. First, it seems necessary to include *drug-specific* factors in any complete explication of drug use. Broad theories of deviant or "problem" behavior are valuable and highly relevant to the use of drugs, but they cannot provide a complete explanation—particularly because different drugs have shown such disparate patterns of secular trends. Second, it is not necessarily the case that those factors which play a major role in the *decline* in use of a drug are those which contributed most substantially to an initial *increase* in use. To the contrary, we suspect that the factors causing historical rises and declines in a drug's use are seldom the same. With regard to marijuana and cocaine, for example, changes in availability undoubtedly played a more important role in the increase of each drug's use than in the decline.

Our emphasis on drug-specific factors does not preclude some very useful generalizations across drugs. Indeed, the central thesis of this paper—that increases in perceived risks and disapproval underlie the recent downturn in use of cocaine—is a generalization from the earlier findings on marijuana.

Now let us consider why these attitudes

about marijuana and cocaine changed. We have argued on several occasions that changes in the social environment, primarily changes in information about marijuana, led to a secular trend in perceptions of the risks of marijuana, which led in turn to secular trends in disapproval and in actual marijuana use (e.g., Bachman et al. 1988; Johnston 1985). In particular, we think that two kinds of social change were involved, no doubt synergistically: 1) there was increased research and more credible reporting on the physical and psychological consequences of marijuana use, and 2) long-term heavy marijuana use became common enough that most high school students knew classmates who exhibited some of these negative consequences.

In the case of cocaine as well, we believe that shifts in attitudes resulted from changes in the social environment, primarily changes in information specific to cocaine. These shifts occurred much more abruptly than those involving marijuana, most likely because the new information about cocaine arrived in such a dramatic fashion. In May 1986 Len Bias, a college basketball star who had just made sports headlines as the first-round draft pick of the Boston Celtics, died as a result of cocaine use. The extensive press coverage of this tragedy included the assertion that Bias had never used cocaine before the occasion which resulted in his death. Although that statement was discovered later to be incorrect, the early publicity left a strong impression that even trying cocaine could be very dangerous. Within several weeks another sports star, professional football player Don Rogers, also died as a result of cocaine use.

Although these two athletes were not high school seniors, they were only a few years older than the respondents in our study, they were young men in prime physical condition, and they had already achieved a high degree of success and fame. In other words, they were the kinds of individuals with whom many high school students could identify. Thus we suspect that for many young people these widely reported and discussed events had at least some of the impact that would have resulted from a classmate's death due to cocaine. In any case, the Bias and Rogers deaths, coming in rapid succession, provided a focal point for extensive media coverage of cocaine use and its risks (including death rate statistics, other physical effects, addictive

potential, and the like); all of this information seemed likely to generate higher levels of public concern about the drug. The findings reported here suggest that this is exactly what happened.

CONCLUSIONS

In this paper we have concentrated on only one part of the drug use picture, albeit a very important part. We have focused on overall secular trends, not on intra-individual changes; more precisely, our focus has been on recent substantial declines in drug use. The present findings regarding cocaine, combined with the earlier findings concerning marijuana, support several observations and conclusions.

First, it seems clear that neither the recent decline in cocaine use nor the decline in marijuana use can be attributed to any overall shifts in a number of general lifestyle factors. These factors themselves have not shown strong trends in recent years; therefore, controlling them (in multivariate regression analyses) did not reduce the size of the secular trend in either cocaine use or marijuana use. Moreover, trends in drug use that differ so widely in timing and in rate of change are unlikely to have identical causes.

It appears instead that drug-specific factors were responsible for each of the declines in drug use. In particular, increases in perceived risk and in disapproval associated with each drug seem to have prompted the declines in use.

The drug-specific factors involved in *declining* use are not necessarily the same as those involved in (earlier) *increases* in use. Although the present research shows that perceived risk and disapproval can act to limit use of a drug, it is obvious that other factors such as awareness and availability also place limits on use—and that changes in these latter factors very likely contributed to the initial increases in use of various illicit drugs.

Finally, with respect to prevention, the present findings about cocaine reinforce our earlier conclusions based on the analysis of marijuana use. It appears that large proportions of young people do pay attention to new information about drugs, especially risks and consequences; such information, presented in a realistic and credible fashion, plays a vital part in reducing the demand for a drug. The evidence available thus far shows clearly that

such reduction in demand has been the key to controlling the epidemics of marijuana use and cocaine use.

NOTES

1. The correlational analyses reported here excluded subjects for whom data were missing on one or more of the measures of annual cocaine use, annual marijuana use, personal disapproval of either drug, or perceived risks of either drug (including those who stated, "Can't say, drug unfamiliar" instead of rating perceived risks). Also excluded from the analyses were the small numbers of respondents whose answers to the series of items on perceived risks, or to the series on disapproval, were inconsistent or failed to provide meaningful distinctions among different drugs and different levels of use (see Bachman et al. 1988, footnote 1, for details). These several restrictions had the effect of excluding about 9 percent, on average, of the participants responding to Form 3, which contains the disapproval items. For Form 5, which contains the items on perceived risks, the restrictions excluded about 12 percent of the participants in 1985-1988 and somewhat larger proportions during earlier years (when more seniors claimed that they were not familiar enough with cocaine to rate its risks).
2. As noted earlier, we first carried out regression analyses covering all 13 graduating classes. Although most of the findings were quite similar to those in Table 2, the critical difference is that including either attitude measure in the equation removed only a portion of the unique contribution of the secular trend measure.

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PATRICK M. O'MALLEY is associate research scientist at the Institute for Social Research. He is coauthor, with Johnston and Bachman, of *Drug Use, Drinking, and Smoking: National Survey Results from High School, College, and Young Adult Populations, 1975-1988*, published by the National Institute on Drug Abuse (1989).

Project STAR

Project STAR is a community-wide, comprehensive drug awareness and prevention program committed to substantially reducing alcohol and drug abuse.

STAR was launched in 1984 by the Ewing Marion Kauffman Foundation and Marion Laboratories, Inc., who have committed in excess of \$500,000 per year to the program since its inception.

Serving as a link between those in program development, research, and the community, STAR provides consulting and training services for schools and communities who want to implement comprehensive and effective prevention programs.

Research

- Project STAR research began in the fall of 1984 with the collection of baseline data.
- Project STAR data collectors survey nearly 20,000 students each year from 15 school districts in the Kansas City metropolitan area.
- Kansas City students from grades 7 thru 12 are surveyed annually to help determine program effect and health behaviors.
- Research has helped prevention experts improve the Project STAR curriculum and plan new prevention strategies.
- Analyses of data taken three full years after implementation of the resistance skills training indicate significant reductions in the number of students who report using tobacco and marijuana.
- STAR students also report a significant decrease in the amount of alcohol consumed at any one time.



Project STAR Overview

Supported by the
Ewing Marion Kauffman Foundation
and Marion Laboratories, Inc.
9300 Ward Parkway, P. O. Box 8480
Kansas City, Missouri 64114
816-363-8604

Curriculum

- The Project STAR curriculum is a social skills approach to drug and alcohol abuse prevention taught by junior high/middle school classroom teachers.
- Several of the sessions include homework lessons that are to be completed with the student's parent in an effort to promote communication regarding their attitudes about drug use and abuse.
- Lessons deal with such themes as:
 - *Consequences of Using Drugs*
 - *Techniques to Say "No"*
 - *How to Resist Peer Pressure*
 - *Student Perceptions/Misperceptions of Drug Use*
 - *Appropriate and Inappropriate Use of Alcohol*
 - *The Techniques and Effects of Advertising*
 - *Developing Friendships*
 - *Making Informed Decisions*
- A 9th grade curriculum is now being developed as a part of a comprehensive high school program.

Teachers

- **1984-85:** 75 public school teachers from 26 Kansas City metropolitan area schools were trained to implement the STAR Curriculum.
- **1985-86:** 75 teachers in the remaining metropolitan schools were trained.
- **1986-87:** STAR cooperated with Alcohol and Drug Abuse Services in the state of Kansas to offer training in 10 different locations throughout the state, training 271 teachers.

STAR conducted parochial school training for 90 teachers representing 52 schools.

- **1988-89:** Project STAR began training teachers in the state of Missouri at 9 regional training sites, training 369 teachers.
- Over 1,000 teachers have now been trained to teach Project STAR including those in the Kansas City metropolitan area and throughout Missouri and Kansas.
- Additional trainings are planned as requested by schools, communities, and/or states.

Students

- **1984-85:** Some 8,000 junior high/middle school students received STAR training the first year of the program (26 schools).
- **1988-89:** We estimate that about 15,000 metropolitan-area students (in 50 junior high/middle schools) now receive the training each year. By the end of this school year, our fifth year, over 68,000 students in the Kansas City metropolitan area have had STAR training.

We estimate that another 20,500 Kansas students participated in Project STAR during this school year.

We are reaching some 37,200 Missouri students (including 9,000 in the Kansas City metro area) during the 1988-89 school year—more than 50% of the 7th graders in Missouri.

School Professionals

- More than 250 Kansas City area principals, counselors, and school nurses have received training in support of the STAR program.

Community

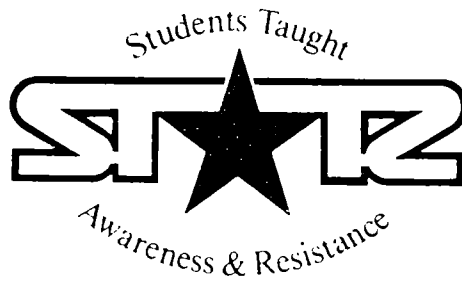
- STAR believes that entire communities must become actively involved in alcohol and drug prevention programming.
- STAR serves as a catalyst in helping community task forces develop and grow by providing a community development model and baseline training.

Baseline Training

- Baseline training provides an in-depth awareness of chemical dependency and its many ramifications. This 12-hour training utilizes team building and interpersonal interaction techniques as a way of presenting and processing content in preparation for action planning.
- **1988-89:** More than 200 teachers have participated in the baseline training. 150 community leaders have been involved in the baseline training.

Parents

- STAR believes that for any prevention program to be successful, the parents must know and understand the influence they have on their child.
- Over 500 parents have now been trained to support resistance skills training by becoming actively involved with school-based STAR parent groups.
- **1988-89:** Through baseline training, 200 parents were trained to actively participate in prevention programming and to facilitate STAR parent activities.



PROJECT STAR OVERVIEW

Students Taught Awareness and Resistance — is committed to community-based alcohol and drug abuse prevention. Mr. and Mrs. Ewing M. Kauffman's commitment to Kansas City, their concern for young people, and the prevalence of alcohol and drug use among youth provided the impetus for Project STAR. The project is funded by The Ewing Marion Kauffman Foundation with executive leadership and technical support provided by Marion Laboratories, Inc. The goal of Project STAR is to reduce alcohol and other drug use among young people and to create an environment that supports and encourages youth to remain drug free.

By carefully studying prevention programs and related research, Project STAR identifies the most effective strategies in use and assists communities to implement those strategies to help young people avoid alcohol and other drug use. One of the most effective strategies utilizes a curriculum taught by classroom teachers to help adolescents anticipate and resist social pressure.

Research shows that successful prevention programs must not only involve schools, but entire communities. As students develop refusal skills, their commitment to non-use must be reinforced and supported by parents, churches, business and community leaders. To sustain this commitment, community-wide changes in attitudes and policies must be made. Only then, will young people achieve the quality of life they want and deserve.

Components of Project STAR

- Curriculum
- Parents
- Prevention
- Community Support
- Corporate Social Responsibility
- Research and Evaluation

Supported by The Kauffman Foundation and Marion Laboratories, Inc.
3300 Ward Parkway, P.O. Box 8480 Kansas City, MO 64114 (816) 363-8604

CURRICULUM

To reduce drug and alcohol use among young people, Project STAR uses a social skills curriculum. Students learn to identify what influences them to use alcohol and other drugs and develop the skills and commitment they need to avoid or resist those influences.

Research indicates that most young people know about the harmful effects of substance abuse and have no intention of becoming involved. A high percentage of youth between the ages of 11 and 15, however, do experiment with alcohol and other drugs, and many become harmfully involved.

Peers provide a major source of pressure for youth. Project STAR helps students deal with this peer pressure by teaching them techniques to use when confronted with alcohol and other drug issues. While still in the safety of the classroom, and under the direction of carefully trained teachers, students learn how to identify sources of influence and how to resist them. Through role playing, students are encouraged to practice specific responses when pressured to use drugs.

Media provides another source of pressure. Television and radio programs, and advertising of alcohol and tobacco products, frequently portray drug use as socially acceptable and even as a desirable way to feel "good". Teaching students to identify and respond critically to these influences helps them resist pro-drug appeals. Discussing advertising techniques and developing and producing their own anti-drug commercials gives students positive ways to promote the non-use of drugs.

Also, parents must support their children's efforts to resist these pressures. Through homework assignments provided by Project STAR, parents can discuss guidelines, consequences, and personal reasons for not wanting their children to use drugs. Parents frequently comment that the homework assignments help open lines of communication in a supportive, non-threatening way.

When students understand the influence that peers, media, teachers, and parents have on their decisions, and when they learn and practice refusal skills, they are better equipped to make a commitment to stay alcohol and drug free.

PARENTS

Parents can be the most powerful influence in a child's life. For alcohol and other drug prevention programs to be effective, parents must be actively involved. Studies show that junior high school students rely more on parents than peers to develop their values and to make decisions. If parents are not actively involved, students frequently turn to their peers. Project STAR provides many opportunities for parents to participate with their child in the decisions they make about alcohol and drug use.

Through Project STAR's homework assignments, parents are encouraged to establish family rules, discuss consequences, and share their reasons for not wanting their child to become involved with alcohol or other drugs. By listening, showing a sincere interest, reinforcing positive behaviors, encouraging problem-solving skills, and being strong role models, parents can positively influence their child's commitment to resist alcohol and other drug use.

Although parents cannot make decisions for their child, they can create an environment that encourages and supports appropriate decisions. As a family, they can discuss and agree on guidelines, provide appropriate alternatives to alcohol and drug use, and reinforce each other's values.

Parents can also help prevent alcohol and other drug use by encouraging schools, law enforcement, and other agencies to support healthy and rewarding activities for young people. Such efforts help to create an environment in which alcohol or other drug use is no longer the "norm". Project STAR provides an important opportunity for parents to focus their energy and leadership in the development of a healthy environment for young people.

PREVENTION

While the media paints a discouraging picture of alcohol and drug use, two encouraging research developments provide evidence that prevention programs can make a difference and do reduce the onset of alcohol and drug use by youth.

The first development is the emergence of new research. Studies have clearly shown that school-based drug prevention strategies can address the social and psychological reasons why youth get involved with drugs. These strategies, which first produced a 50 to 75 percent reduction in adolescent smoking, are now being applied to prevent the onset of alcohol and other drug use among youth. Such programs emphasize resistance skills training, parent involvement, and development of peer leaders.

The second encouraging development is the understanding that to be effective, school-based prevention programs must be part of a comprehensive and community-wide effort. Ultimately, if we hope to reduce substance use by youth, we must involve all social systems — families, schools, the workplace, media, and community.

At present, only a few substance-abuse prevention programs combine both of the above. In 1984, the University of Southern California's comprehensive drug abuse program was first implemented on a community-wide basis as Kansas City's Project STAR. The project, now expanded into other cities, holds promise as a model prevention effort. The comprehensive approach of Project STAR engages multiple systems and activities. Beginning with a school-based, resistance skills curriculum, Project STAR systematically introduces parent, community organization, and health policy strategies.

Project STAR provides an example of a well-coordinated, community-wide, and collaborative program that seeks to not only reduce actual alcohol and drug use by youth, but to create a healthy community environment that supports drug-free lifestyles.

COMMUNITY SUPPORT

The most effective prevention programs involve entire communities working together to reduce alcohol and other drug use. By encouraging and supporting young people as they learn and apply resistance skills, communities can counter the pervasive influence of peers, media, and advertising.

Project STAR emphasizes community involvement. Schools, parents, churches, youth agencies, and civic and business leaders are encouraged to support young people by:

- Initiating community-school task forces to examine alcohol and other drug-prevention action plans in their communities.
- Insisting that young people receive clearly defined and consistent “no use” messages on alcohol and other drugs.
- Requesting and endorsing comprehensive, alcohol and other drug abuse prevention and intervention programs.
- Organizing and training parents and community leaders to become integral parts of a “prevention climate”.
- Developing, providing, and supporting healthy alternatives to alcohol and other drug use.
- Teaching communities about alcohol and drug use problems and how young people can become involved.
- Promoting employee assistance programs in schools and other work sites.
- Making appropriate and effective treatment opportunities available.
- Cooperating with school officials, parents, law enforcement, and young people to create healthy environments.

Project STAR also encourages cooperation and collaboration with other community programs and agencies. By participating in local, state, and national legislative issues, Project STAR actively contributes to community policy and program development. This participation not only demonstrates cooperation, but also helps to reinforce non-use messages to young people. When community members join together to reinforce the knowledge, attitudes, and skills taught in schools and create healthy environments, they can effectively impact students’ decisions and behaviors and help them to remain alcohol and drug free.

CORPORATE SOCIAL RESPONSIBILITY

Corporate social responsibility is interpreted differently by each company. Marion Laboratories, Inc. takes a unique approach to social responsibility, an approach based on people caring for people. In this uncommon company, people share a common pride, commitment, and philosophy known as the "Marion Spirit". This spirit is acknowledged in one of Marion's key mission statements:

"To achieve a performance and people oriented working environment that stimulates integrity, entrepreneurial spirit, productivity, and a sense of responsibility to all Marion associates and society."

Responding to this spirit and commitment, Marion impacts and supports community enrichment in many ways. Earlier, Marion helped to launch the ACT (Advanced Coronary Treatment) Foundation. The ACT Foundation established paramedic ambulance services across the nation that respond to life-threatening calls within three to five minutes. The foundation also committed to training at least 10 percent of the population in cardio-pulmonary resuscitation (CPR).

As a local initiative, Marion established "CPR NOW" to train 100,000 people in the Kansas City metropolitan area. In one weekend, 10,000 people received CPR training at the Royals Baseball Stadium. The health community credits "CPR NOW" with saving hundreds of lives.

In 1984, Marion Laboratories, Inc., with the active support and involvement of Board Chairman Ewing M. Kauffman, responded to a new challenge. From its inception, Project STAR (Students Taught Awareness and Resistance) was committed to helping young people avoid drug and alcohol abuse. This community-based program, identifies and implements strategies to reduce the level of alcohol and other drug use, and creates a healthy community environment that supports drug-free youth.

Marion's latest response to its corporate social responsibility helped to launch Project Choice. This innovative program provides educational assistance to academically and economically disadvantaged youth, encouraging them to graduate from high school, giving them an opportunity to further their post-secondary education, and helping them to become productive members of society.

Through its commitment to corporate social responsibility, Marion Laboratories, Inc. identifies needs, commits the energies and resources to meet those needs, and impacts communities. A unique feature of the "Marion Spirit" is to provide not only financial resources, but leadership and personal involvement of Marion Associates. Marion demonstrates through this uncommon approach that each person in the corporation and community can play a role in improving the quality of life for everyone.

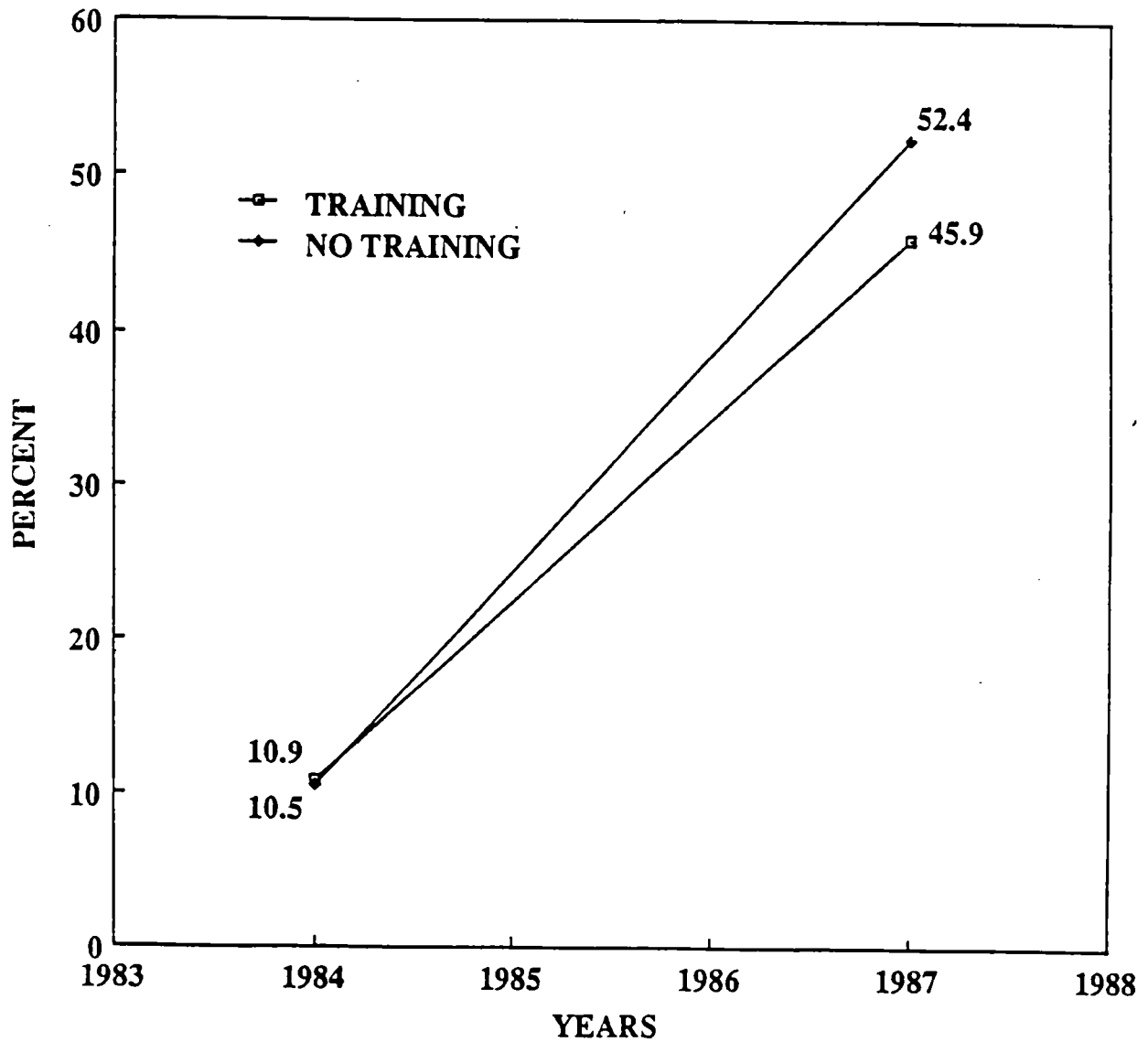
RESEARCH & EVALUATION

Studies show that Project STAR helps young people learn to resist using alcohol and other drugs.

From the unique commitment of Project STAR to research and evaluation came a plan to systematically evaluate the program's effect on young people and their drug and alcohol involvement. Because of Project STAR's dedication to evaluation, it became the principal focus of a federally funded research project. The Institute for Health Promotion and Disease Prevention Research at the University of Southern California developed a procedure for measuring the impact of Project STAR. Carefully trained data collectors annually survey over 20,000 sixth through twelfth grade students on over 120 variables relating to their alcohol and drug use, attitudes, and perceptions. To encourage accuracy of student responses, breath tests are also administered to determine smoking behavior. Because long-term effects are critical, students are surveyed before receiving Project STAR training and for a minimum of five years following participation in the project.

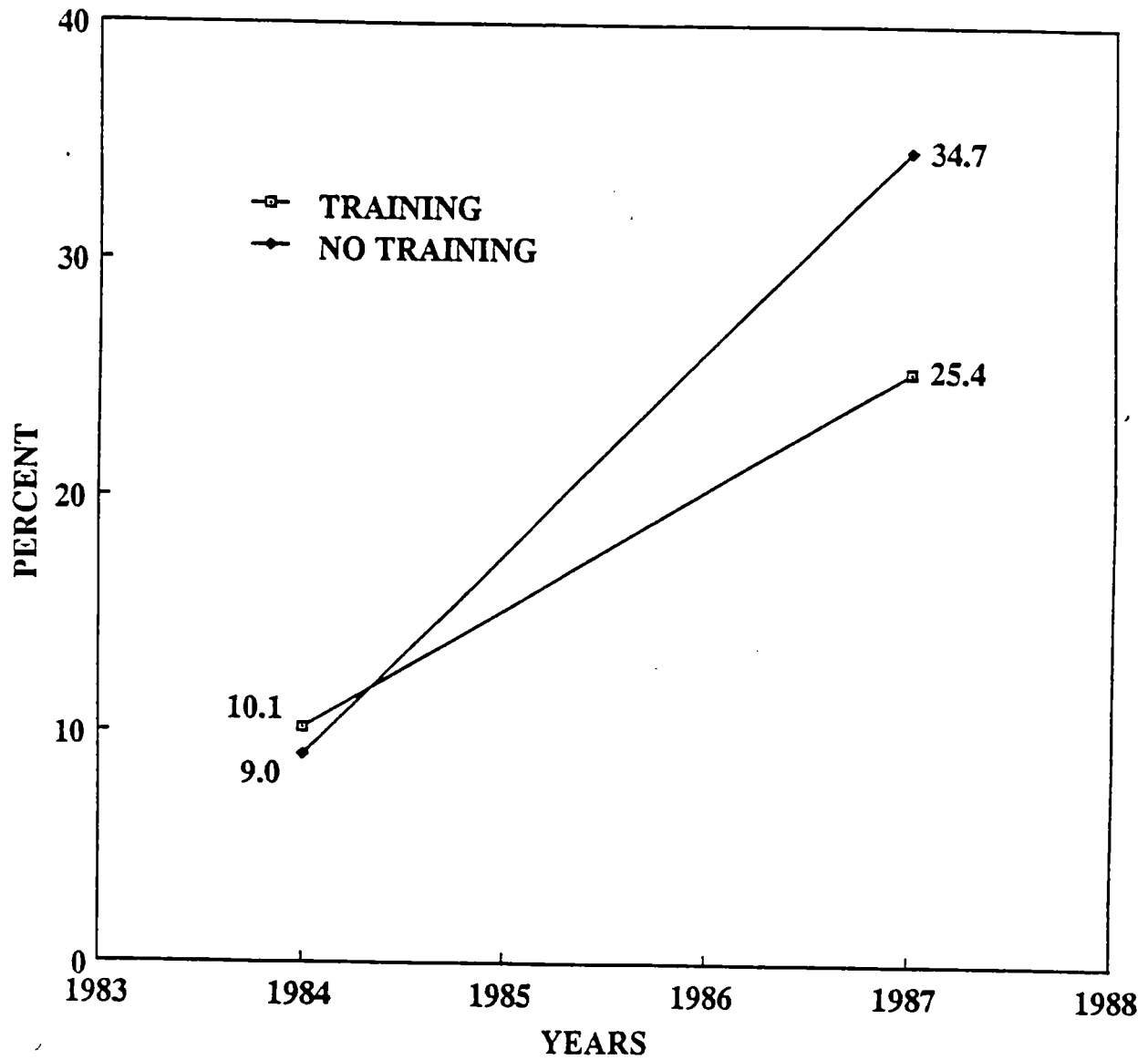
After four years of research and evaluation, early findings provide encouraging news. Analyses of data taken three full years after initial implementation of the resistance skills training indicate significant reductions in the number of students who report using tobacco and marijuana. Students also report a significant decrease in the amount of alcohol consumed at any one time. Evidence shows that when young people are exposed to social skills training, they can learn to resist alcohol and other drug use. This research indicates that community-based prevention programs like Project STAR can effectively reduce levels of young people's alcohol and drug involvement. Noting the initial results, substance abuse professionals continue to monitor the progress of Project STAR.

ALCOHOL USE



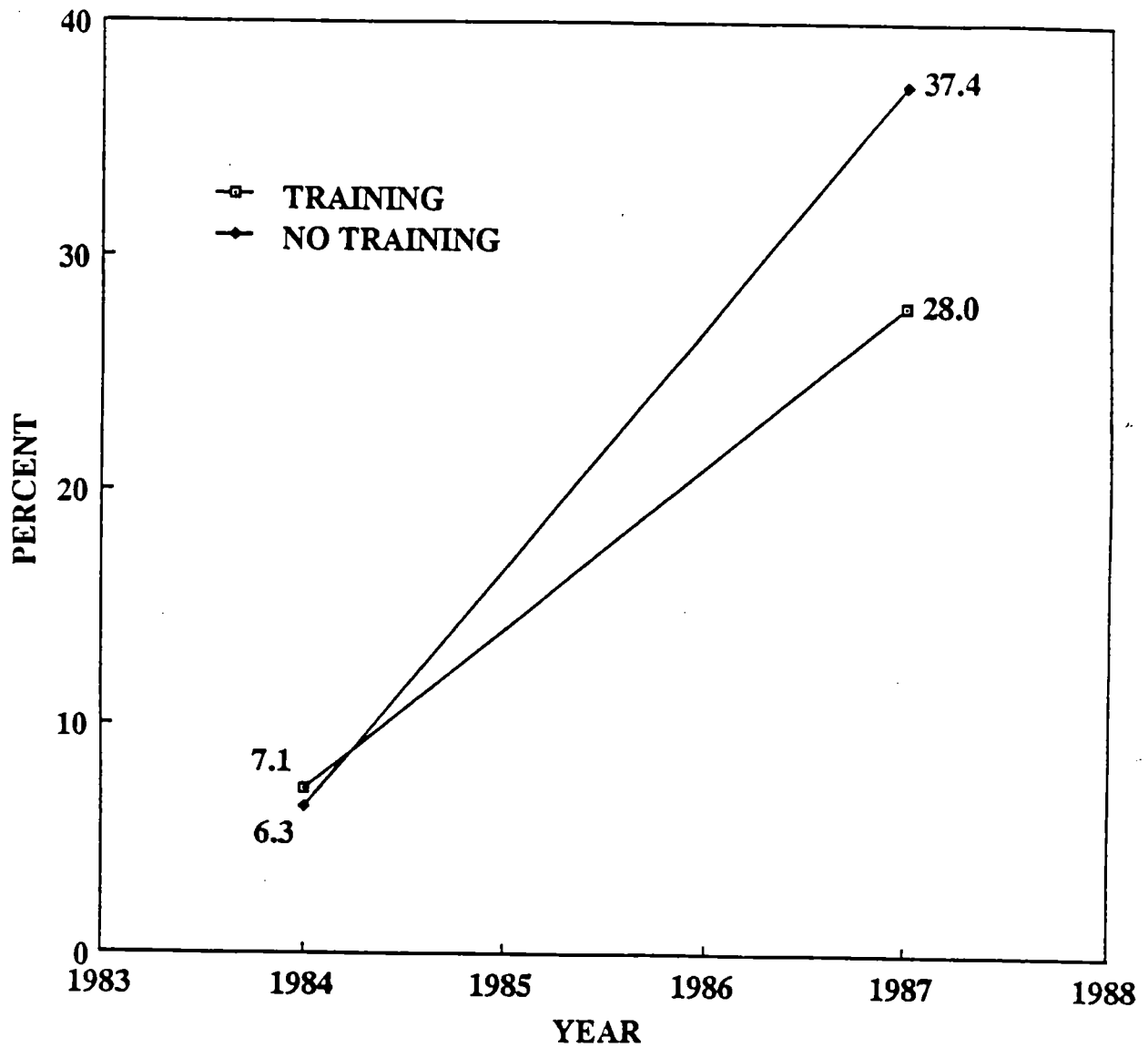
Three years after participating in the resistance skills training, fewer students reported having consumed two or more drinks at any one time.

CIGARETTE USE



Three years after participating in the resistance skills training, fewer students reported having used cigarettes in the last 30 days.

MARIJUANA USE



Three years after participating in the resistance skills training, fewer students reported ever having used marijuana.

PROJECT STAR - FACT SHEET

- With the start of the '88-'89 school year, Project STAR began its fifth year of alcohol and drug abuse prevention programming under the direction of the Ewing Marion Kauffman Foundation with technical support provided by Marion Laboratories, Inc.
- Project STAR has conducted eleven regional trainings throughout Kansas and ten regional trainings throughout Missouri.
- Over 1,000 teachers have been trained to implement the STAR curriculum in the Kansas City metropolitan area and in Missouri and Kansas.
- In metropolitan Kansas City 50 middle schools representing 15 public school districts actively participate in Project STAR. Many private and parochial schools in Kansas City also participate.
- Over 60,000 students from the metropolitan Kansas City area have participated in the program since it began in 1984.
- Over 20,500 Kansas students participated in Project STAR this year. An additional 36,500 Missouri students are receiving STAR lessons.
- More than 250 Kansas City area principals, counselors and school nurses have received training in support of the STAR program.
- Over 750 parents, community leaders, and educators have been trained to support resistance skills training by becoming actively involved with school-based STAR parent groups.
- The Ewing Marion Kauffman Foundation and Marion Laboratories, Inc. have committed in excess of \$500,000 per year since the program's inception in 1984.

A Multicommunity Trial for Primary Prevention of Adolescent Drug Abuse

Effects on Drug Use Prevalence

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The entire early adolescent population of the 15 communities that constitute the Kansas City (Kansas and Missouri) metropolitan area has participated in a community-based program for prevention of drug abuse since September 1984. The Kansas City area is the first of two major metropolitan sites being evaluated in the Midwestern Prevention Project, a longitudinal trial for primary prevention of cigarette, alcohol, and marijuana use in adolescents. The project includes mass media programming, a school-based educational program for youths, parent education and organization, community organization, and health policy components that are introduced sequentially into communities during a 6-year period. Effects of the program are determined through annual assessments of adolescent drug use in schools that are assigned to immediate intervention or delayed intervention control conditions. In the first 2 years of the project, 22 500 sixth- and seventh-grade adolescents received the school-based educational program component, with parental involvement in homework and mass media coverage. Analyses of 42 schools indicate that the prevalence rates of use for all three drugs are significantly lower at 1-year follow-up in the intervention condition relative to the delayed intervention condition, with or without controlling for race, grade, socioeconomic status, and urbanicity (17% vs 24% for cigarette smoking, 11% vs 16% for alcohol use, and 7% vs 10% for marijuana use in the last month), and the net increase in drug use prevalence among intervention schools is half that of delayed intervention schools.

(JAMA. 1989;261:3259-3266)

DRUG abuse in the United States, including the abuse of tobacco, alcohol, marijuana, and illicit substances such as cocaine, is implicated in one third to half of lung cancers and coronary heart disease in adults and in the majority of violent deaths (homicides, suicides, and accidents) in youths.^{1,2} Recognizing the role that drug abuse plays in chronic diseases and premature mortality, the 1979 report by the US Surgeon General entitled *Healthy People*³ and subsequent national reports⁴ targeted the primary prevention of tobacco, alcohol, and other drug abuse as a high priority for health promotion efforts in the United States. The objective is a significant increase in the health status of the en-

tire US population by 1990.⁵ Accomplishing this goal is expected to require the dissemination of prevention technologies on the scale of community or city to populations at primary risk for onset of drug use.⁶

Recent research shows promise for school-based programs that teach youth peer pressure resistance and social competence skills for avoiding drug use.⁷⁻¹⁰ More than 20 of these studies have shown significant reductions, between 29% and 67%, in experimental smoking rates among adolescents, with more moderate reductions in alcohol and marijuana use.¹¹ A meta-analysis of 143 drug prevention studies that employed various approaches and populations has shown that effect size is highly related to the inclusion of peers in the teaching process.¹² The most promising programs seem to be those that are initiated in the early adolescent years, particularly the years marking transition to middle or junior high school (sixth or seventh grade), and that focus on delaying the onset or abuse of one or more of the

"gateway drugs" (tobacco, alcohol, and marijuana).^{13,14,15} The early adolescent years have been identified as the first risk period for use of these drugs.¹⁶ The term "gateway" refers to the predictive relationship of tobacco, alcohol, and marijuana to the use of more illicit substances later in life, including cocaine.¹⁴

Unfortunately, the effectiveness of large-scale, school-based programs in producing significant and sustained changes in drug use behavior might be questioned. Reported effects have been minimal to moderate and, in some cases, short-lived or delayed.^{14,15,16} Several explanations have been hypothesized, including the brevity of most school programs, the lack of integration of school-based programs with community programs, and mass media and other environmental influences outside of school that conflict with drug prevention messages learned in school.^{14,17} If not mobilized to promote non-drug use norms, these collective environmental influences—including parents, community leaders, mass media programmers, and local school and government administrators—might have diluting or abbreviating effects on an otherwise potentially powerful prevention program that is initiated in the school.^{14,18}

A preventive intervention model that uses multiple environmental influences might be required to effect long-term changes in adolescent drug use. These influences could be used to support and extend prevention skills learned initially in a school program and to promote a consistent community norm for not using drugs. In studies of community-based programs for prevention of unwanted pregnancy and cardiovascular disease, use of at least some of these influences in a small number of communities has led to significant reductions in estimated pregnancy rates and cigarette smoking.¹⁹⁻²¹ However, most studies of programs for drug prevention have been limited in the size and number of sites required to produce sufficient power to estimate effects on whole communities. Statistical control of demographic variables in community-

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based drug prevention research should include adjustments for experimental group differences in baseline prevalence rates of drug use, demographic characteristics of schools and communities that correlate with drug use, and use of units of analysis that are appropriate for the unit of experimental assignment.²⁻⁴ For example, while prior research has shown that an average of 4% to 6% of youths in sixth and seventh grades use cigarettes, alcohol, or marijuana on a weekly basis, and 30% use these drugs by 9th or 10th grade, rates vary by individual schools and communities.¹⁻³ Regarding demographic characteristics, variables that correlate with drug use but that have not been controlled in prevention studies include socioeconomic status (as indexed by father's or mother's occupation), race, age or grade, and geographic location.⁵ Finally, most prevention studies used the individual as the unit of analysis, despite the fact that program assignment and implementation typically occur at the level of school or classroom.⁶

We report the initial effects of a comprehensive, community-based program that uses school, mass media, parent, community organization, and health policy programming to reduce the prevalence of gateway drug use in adolescents. The program has been implemented in 50 schools in 15 communities from an eight-county area in Kansas and Missouri since 1984. It is part of the Midwestern Prevention Project (MPP), a 6-year longitudinal study of community-based drug prevention that expanded to Indiana communities in 1987. We report the results of the MPP on adolescent drug use in Kansas City (Kansas and Missouri) communities from September 1984 through January 1986. Drug use data are adjusted for baseline use levels and school demographic characteristics related to drug use, and school is used as the unit of analysis to test program effects.

METHODS

Program Intervention

The program components delivered from September 1984 through January 1986 consisted of a 10-session youth educational program on skills training for resistance of drug use,^{1,7} 10 homework sessions involving active interviews and role-plays with parents and family members, and mass media coverage. The youth educational program was given in school, using science or health education classes, and included topics and methods that prior research has suggested might be effective in reducing the onset of drug use.^{1,8} The topical areas included psychosocial consequences of drug use, correction of be-

liefs about the prevalence of drug use, recognition and counteraction of adult, media, and community influences on drug use, peer and environmental pressure resistance, assertiveness in practicing pressure resistance, problem solving for difficult situations that involve potential drug use, and statement of public commitment to avoid drug use. Methods for delivery of prevention skills included modeling and rehearsal (role-playing) of resistance skills, feedback with peer reinforcement through Socratic discussion, peer leader facilitation of teacher program implementation, and discussion of homework results.

The companion homework sessions involved interviewing parents and family members about family rules on drug use, successful techniques for avoiding drug use, and methods for family counteraction of media and community influences to use drugs. Homework was assigned as part of classroom program sessions, with material collected and discussed in subsequent classroom sessions. Teachers reported that approximately 80% of students completed homework assignments.

Mass media coverage of the program consisted of newspaper articles and 1- to 2-minute television news clips of project staff announcing the purpose and direction of the project, coverage of teacher training and classroom sessions, television and radio talk show interviews with project staff about program progress, and a televised press conference reporting baseline rates of drug use in the Kansas City area. A total of 16 television, 10 radio, and 30 print media events for the project were broadcast over the metropolitan area from September 1984 through January 1986, including program and delayed program school areas.

The implementation and structure of the MPP follow the intervention model in Fig 1. The model matches federal agency support for program planning and research with private-sector support for program implementation.⁹ The bold lines indicate model steps that were implemented from September 1984 through January 1986. With the exception of mass media coverage, which is offered each year of the program but is not experimentally controlled, the other four prevention program components are added sequentially to the program at the approximate rate of one per year.

School and community demographic profiles were first compiled to assess recent prevention activities (Fig 1; "Assessment of Needs and Resources"). The needs assessment was followed by introductory training and establish-

ment of a community coordinating structure with school and community leaders to plan program implementation. Program planning was followed by the training of all nine television station managers, 65 teachers, and four student leaders per class per school in drug prevention skills and program delivery ("Training of Program Implementors") and implementation with more than 7500 students and their parents in half of the Kansas City schools ("Mass Media" and "Educational Program for Youths"). Through January 1986, programming focused on "Direct Skills in Resistance and Counteraction" to drug use pressures. A televised press conference and routine meetings of community leaders were used to publicly announce expectations for change in drug use for each year ("Reduction of Drug Use Prevalence").

Study Design

The overall MPP design includes a quasi-experimental design in Kansas City and a randomized experimental design in Indianapolis, Ind, to test the effectiveness and replicability of a multicomponent community drug abuse prevention program. The program is evaluated across all the communities that constitute these two midwestern Standard Metropolitan Statistical Areas (SMSAs). Within each SMSA, cohorts of adolescents are assigned by school to intervention or delayed intervention control conditions. Baseline assessment and intervention is initiated in the year marking the transition to middle or junior high school (sixth or seventh grade). Program replication is lagged 3 years so that implementation and testing that was initiated in Kansas City communities in 1984 began in Indianapolis in 1987.

This study evaluates the effects of the program components administered to the initial 1984 cohort of sixth- and seventh-grade adolescents in Kansas City communities from September 1984 through January 1986. Schools were assigned to conditions based on school administrator scheduling flexibility after the start of the school year.

Selection of Participants

According to the 1980 US Census,¹⁰ the Kansas City SMSA has a total population of 1.3 million, spanning an eight-county area in Kansas and Missouri and 15 school districts. Eight percent of the population consists of individuals between the ages of 10 and 14 years, which are the ages associated with middle and junior high school and the focus of initial intervention for the MPP. In 1980, the SMSA population was primarily white, middle class, well educated, and stable:

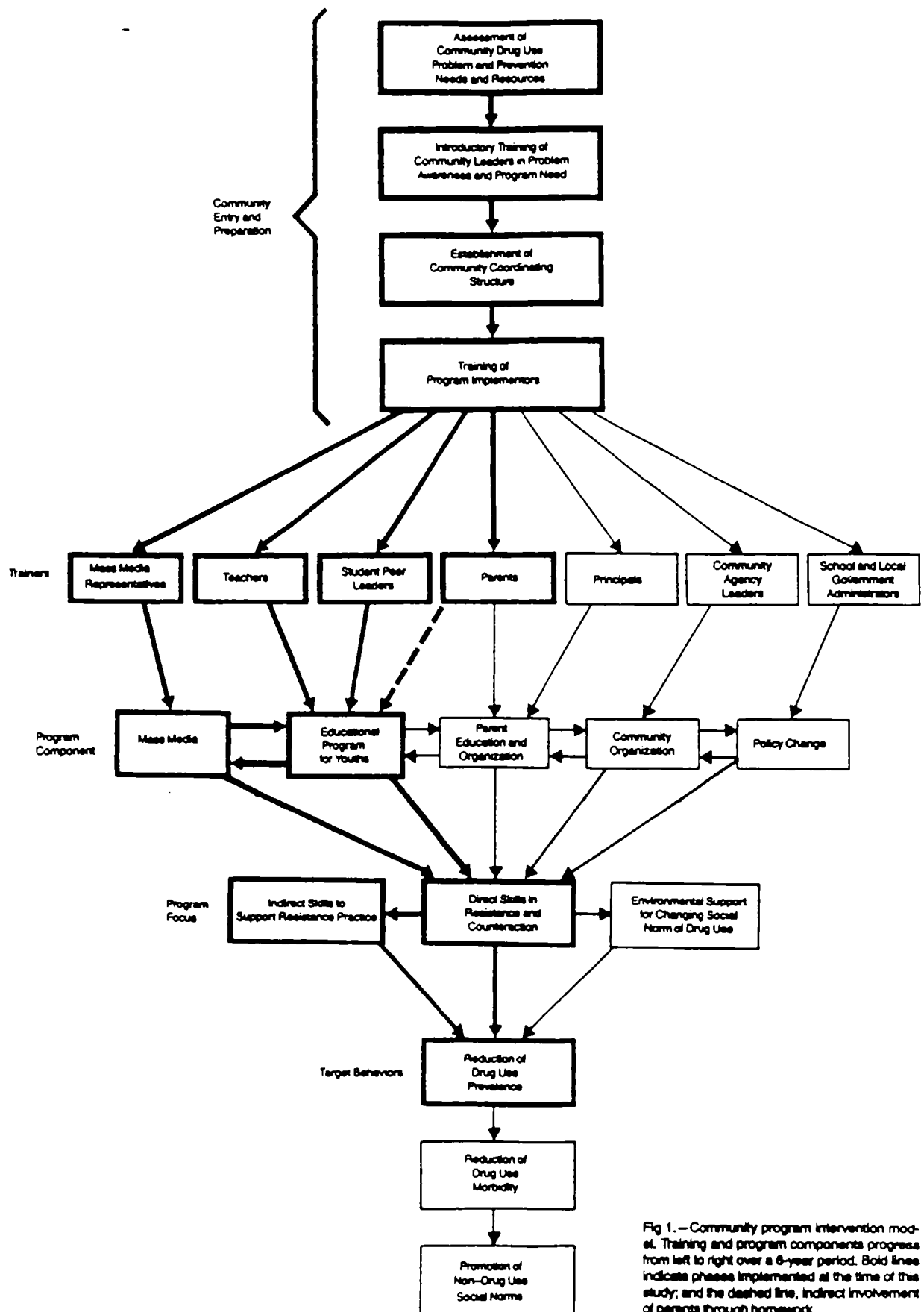


Fig 1.—Community program intervention model. Training and program components progress from left to right over a 6-year period. Bold lines indicate phases implemented at the time of this study; and the dashed line, indirect involvement of parents through homework.

84% white, 13% black, 3% other; median family income of \$22 376, with 7% of families below the poverty level; 36% of adults with 1 or more years of college education; and 86% of residents living in the same SMSA for 5 or more years. Compared with the general population of Kansas City SMSA residents in 1980, the sixth/seventh-grade population of students in the SMSA in 1984 represented fewer white individuals (75%) and lower income levels (15% below the poverty level) but the same level of education (36% with parents attending 1 or more years of college).

The baseline sample consisted of approximately one third of the 1984 cohort of transition-year sixth- and seventh-grade students from all 50 public middle/junior high schools operating in the Kansas City area in 1984 and 1985. Sampling was necessary because of the size of the transition-grade cohort in the SMSA ($N = 15\ 000$). The sample was developed by measuring the entire sixth/seventh-grade cohort in 16 schools; 25% of the cohort was sampled randomly by classroom in the remaining 34 schools. The two sampling strategies were used to minimize bias associated with a single sampling plan.²² Seventy percent of the sample was tracked by grade cohort (cross-sectional sampling of available students in the cohort, including new incoming students who might not have received the intervention; average, $n = 3371$); the remaining 30% was tracked by individual ($n = 1607$). Following grade cohorts through random cross-sectional sampling, in addition to tracking individuals who remain in the study, increases the likelihood of obtaining valid estimates of change in population prevalence rates for drug use each year, and a more conservative test of program effects that is less likely to be confounded by test-retest sensitivity or program/test interactions.^{23,24}

By 1985 and 1986, six schools had closed or consolidated with other schools and two schools missed data collection because of scheduling conflicts. Of the remaining 42 schools, 8 were assigned randomly to program or control conditions, 20 could reschedule existing programming and were assigned to the program condition, and 14 did not have the flexibility to reschedule existing programming and were assigned to the control condition. Initial regression analyses indicated no baseline differences in prevalence rates of lifetime drug use or demographic characteristics between the 42 schools and the additional eight schools, no differences between random and scheduled assignment schools, and no condition $\times$ type of assignment interactions at baseline or 1-

year follow-up (all probabilities not significant). Subsequently, the analyses for this study are based on the 42 schools. Ninety-four percent of the samples contacted received parental consent. Samples did not differ in consent rates. Based on the 1607 students who were tracked individually over time, 3.1% had no follow-up at any wave after baseline and 84% were assessed at both baseline and 1-year follow-up. Attrition rates and drug use among students unavailable for follow-up did not differ between program and control schools ($P > .15$), although, consistent with other prevention studies, users in both experimental conditions were more likely overall to be absent after baseline compared with nonusers ($P < .05$).^{25,26} The total sample sizes were 5065 students at baseline and 5008 at 1-year follow-up, with differences including attrition rates from the tracking sample and differences in the numbers generated from the 25% cross-sectional sample at each wave.

Measurement of Drug Use

Drug use was measured in a questionnaire administered to students in classrooms. The questionnaire included a total of 133 items that measured demographic characteristics, gateway drug use (cigarettes, alcohol, and marijuana), and psychosocial variables related to drug use. Nine gateway drug use items were used to calculate prevalence rates for this study. The nine items included frequency of cigarette, alcohol, and marijuana use in lifetime, in the last week, and in the last month. Reliability of these items is high (the average Cronbach's α values for cigarette, alcohol, and marijuana use items are .84, .86,

and .86, respectively, and test-retest reliabilities are .78, .53, and .67, respectively, based on a sample of 396 seventh-grade students who were measured on two occasions 3 weeks apart²⁷). To enable calculation of drug use prevalence rates, cigarette and marijuana items were rescaled to no use or any use in lifetime, last week, and last month. Alcohol items were rescaled to no use or any use in lifetime and greater than one time in the last week and in the last month to differentiate recent occasional, socially condoned alcohol use (eg, religious ceremonies and family dinners) from more frequent use. Demographic variables used as covariates included race (percent of white students), grade at baseline (sixth or seventh depending on middle or junior high school), urbanicity, coded as distance from the geographic center of the Kansas City SMSA (1, outlying suburban/rural; 2, suburban; 3, urban/suburban; and 4, urban; urbanicity correlated with population density per square mile; $r = .40$, $P < .01$), and socioeconomic status as indexed by father's occupation (coded into 10 occupational categories and rescaled as percent in professional/managerial occupations).

Immediately before administration of the questionnaire, a carbon monoxide breath kit (MiniCO Indicator and operating manual, Catalyst Research Corp, Owings Mills, Md) was used to measure carbon monoxide concentration in expired air to increase the accuracy of subsequent student self-reported drug use.²⁸ Each student was measured for carbon monoxide level at each measurement wave.

All data were collected by trained project data collectors who were in-

Table 1.—School Mean Percentages of Demographic and Drug Use Characteristics at Baseline

Characteristic	Mean $\pm$ SD Rate, %*	
	Program Group (24 Schools, 3011 Individuals)	Control Group (18 Schools, 2054 Individuals)
Urbanicity (1-4)	2.63 $\pm$ 1.06	2.72 $\pm$ 1.13
Urban	17 $\pm$ 36	22 $\pm$ 43
White	78 $\pm$ 24	75 $\pm$ 33
Female	50 $\pm$ 5	49 $\pm$ 6
Professional occupation	36 $\pm$ 22	41 $\pm$ 26
Cigarette use		
Lifetime	52 $\pm$ 11	54 $\pm$ 9
Last month	14 $\pm$ 6	13 $\pm$ 10
Last week	8 $\pm$ 6	8 $\pm$ 7
Alcohol use		
Lifetime	75 $\pm$ 6	79 $\pm$ 10
Last month	7 $\pm$ 4	8 $\pm$ 7
Last week	8 $\pm$ 2	6 $\pm$ 3
Marijuana use		
Lifetime	12 $\pm$ 6	10 $\pm$ 6
Last month	4 $\pm$ 4	3 $\pm$ 4
Last week	2 $\pm$ 3	1 $\pm$ 2

*Based on school as unit of analysis; grade-adjusted drug use rates; includes 14 sixth-grade (middle) and 28 seventh-grade (junior high) schools within 15 communities; mean sample size per school is 266; total number of individuals is 5065. No group comparisons were significant.

dependent of the program. Baseline data were collected approximately 1.5 months prior to program implementation.

Statistical Analysis

Program effects were estimated with several alternative statistical models. These included conditional (covariance) and unconditional (change score) models with both the proportion of drug users in each school and the logit of that proportion as the metric.²⁴ Conclusions concerning program effect were uniform across these alternative approaches. Results from a multiple-group unconditional model applied to proportions are reported herein since it avoids the substitution of arbitrary values for the logit of zero and does not assume consistent covariance patterns across groups. Change in the proportion of users from baseline to follow-up was regressed on covariates within each group. A common zero-point was used for covariates in both groups. The intercept in each group was then the mean or adjusted mean of change in the proportion of users in each group. The difference between the intercepts is then the change in the program condition minus the change in the control condition (net changes). Covariates included grade at baseline (sixth grade, -1; seventh grade, +11), socioeconomic status, percent white, and urbanicity. Except for grade, the value of each covariate was computed as its deviation from the grand mean. Estimates were obtained by ordinary least-squares analysis.

RESULTS

The total sample of individuals observed at baseline in 42 schools was 79% white, 17% black, 2% Hispanic, 1% Asian, and 2% other; 51% female; and 39% reported father's occupation as professional/managerial, 10% white collar support/sales, and 51% blue collar labor. Baseline characteristics by study

group, with school as the unit of analysis, are presented in Table 1. The percentages presented are means of school level percentages. Nine of 24 program schools and 5 of 18 control schools were middle schools; baseline measurement for students in these schools was in sixth grade. The remainder were junior high schools; students in these schools were first measured in seventh grade. There were no significant differences between the program and control schools in covariates or grade-adjusted drug use. Since the proportion of girls was similar in the two groups, this variable was not included as a covariate in subsequent analyses.

Self-reports of lifetime drug use at baseline are summarized for individuals, rather than schools, by covariate levels in Table 2. The lifetime measure reflects experience with a drug at any level of use. More seventh- than sixth-grade students reported drug use. More whites reported use of alcohol than non-whites but fewer reported ever using marijuana. Students from families with a higher socioeconomic status were more likely to report use of alcohol than students from families with a lower so-

cioeconomic status, but this difference was reversed for marijuana. Results were similar for rates of use in the last week or month, but the grade and race differences were not significant.

Intercorrelations among demographic variables are presented by study group in Table 3 at baseline and follow-up, with school as the unit of analysis. Except for alcohol use in the program group, autocorrelations of rates of drug use between baseline and follow-up were positive in both study groups, as were intercorrelations among use rates of different drugs. Socioeconomic status was related negatively to the prevalence of cigarette and marijuana use in both groups at both baseline and follow-up, consistent with other recent research.²⁵ Urbanicity, socioeconomic status, and race were strongly intercorrelated, but differed somewhat in their relationships to drug use. For example, socioeconomic status showed a negative association with cigarette use at follow-up in both study groups ($r = -.66$ and $-.29$), while race showed a negative relationship in the program group ($r = -.22$) and a positive relationship in the control group ($r = .28$). How-

Table 2.—Individual Mean Percentages of Lifetime Drug Use by Demographic Predictors at Baseline

Predictor	Lifetime Prevalence Rate, %*		
	Cigarette Use	Alcohol Use	Marijuana Use
Grade			
6	48†	72†	9†
7	56	78	13
Race			
White	53	80†	11†
Nonwhite	56	66	17
Urbanicity			
Urban	50†	68†	18†
Urban/suburban	61	76	17
Suburban	52	81	11
Outlying suburban	45	80	6
Socioeconomic status			
Professional occupation	42†	81†	5†
Nonprofessional occupation	56	77	14

*Based on the percentage of individuals who ever used a substance, with individual as the unit of analysis (N = 5065).

†P < .01 for the test of equal proportions across the levels of each predictor variable for each substance.

Table 3.—Correlations Between School Demographic Characteristics and Last Month Drug Use in Study Groups*

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	1984			1985			Grade	Urbanicity	Socioeconomic Status	Race
	Cigarette Use	Alcohol Use	Marijuana Use	Cigarette Use	Alcohol Use	Marijuana Use				
Program Schools (n = 24)										
1984										
Cigarette use		.62	.66	.67	.40	.65	.18	.48	-.65	-.41
Alcohol use			.56	.30	.10	.20	.05	.36	-.30	-.21
Marijuana use				.53	.16	.58	.04	.48	-.49	-.36
1985										
Cigarette use					.56	.82	.14	.27	-.66	-.22
Alcohol use						.54	.52	-.21	-.18	.25
Marijuana use							.25	.34	-.67	-.44
Grade								-.14	.03	.14
Urbanicity									-.72	-.81
Socioeconomic status										.64
Race										

*.47 (control) or .40 (program) are significant at P < .05 level (two tailed).

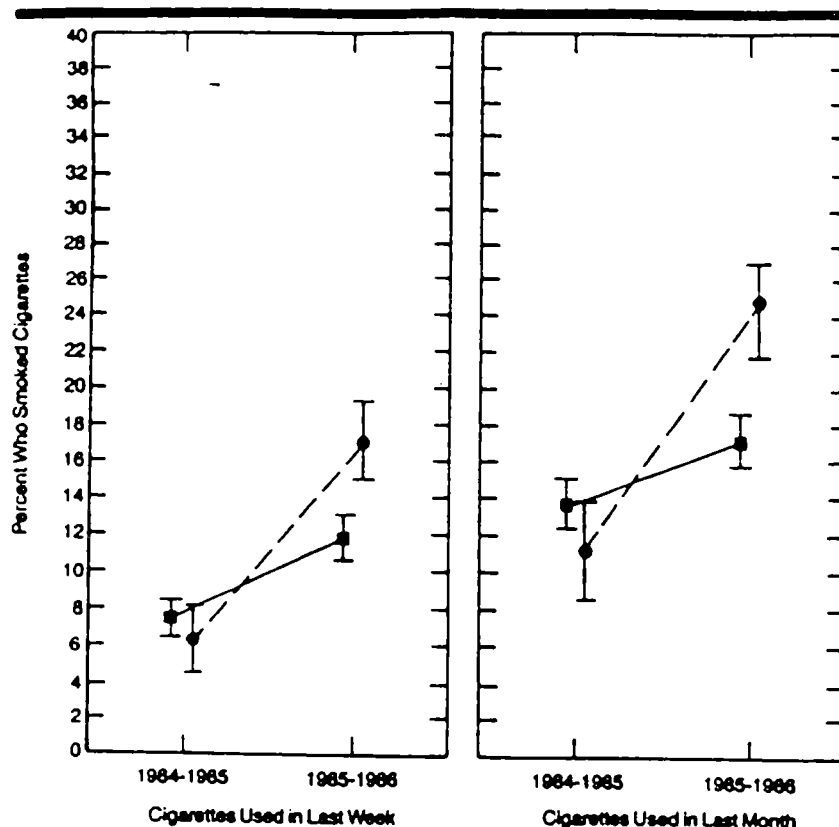


Fig 2.—Prevalence rates for cigarette use in the last week and the last month, adjusted for grade, race, urbanicity, and socioeconomic status. Solid line indicates program group; and dashed line, control group.

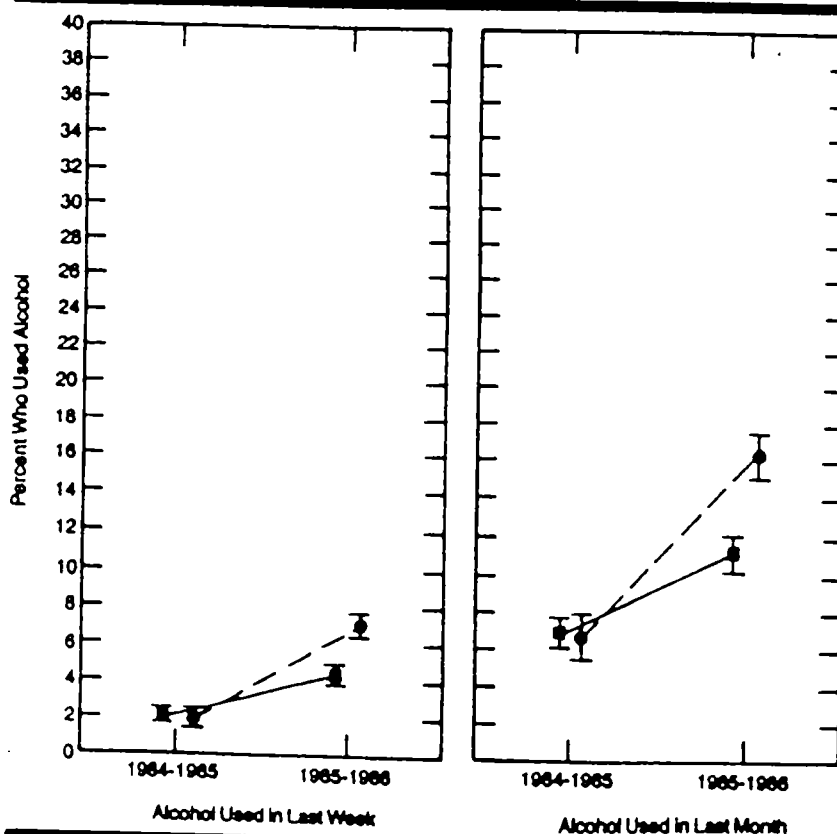


Fig 3.—Prevalence rates for alcohol use greater than or equal to two times in the last week and the last month, adjusted for grade, race, urbanicity, and socioeconomic status. Solid line indicates program group; and dashed line, control group.

ever, the partial correlation of cigarette use and race, partialling socioeconomic status, was positive in both groups.

Prevalence rates at baseline and 1-year follow-up are plotted in Figs 2 through 4 for use of each substance in the last month and week. Plotted values are means of school level proportions of users adjusted for grade, race, socioeconomic status, and urbanicity. The observed rates are similar to those reported nationally and regionally for adolescents.^{14,15} As expected with developmental phenomenon, prevalence rates for each substance increased in both groups over time. Of particular interest is the reduced rate of increase in the program schools relative to schools in the control condition. Slight to moderate crossover patterns are apparent in these figures for all three substances.

Age-adjusted estimates of change in monthly and weekly use of cigarettes, alcohol, and marijuana are presented by study group in Table 4. Estimates with and without adjustment for covariates were computed. However, as can be seen in Table 4, covariate adjustment had little impact on the estimates. The increase in proportion of students reporting use was significantly higher in the control than in the program condition for all measures of drug use ($P < .05$, one-tailed tests). These results confirm the patterns apparent in Figs 2 through 4.

Essential group equivalence in cigarette use (last month) at baseline is followed by a 22% vs 15% prevalence at follow-up for control and intervention schools, respectively. Analogous prevalence comparisons were 12% and 9% for alcohol use and 7% and 4% for marijuana use, respectively.

COMMENT

In the second year since the MPP was initiated in Kansas City-area communities, the increase in drug use prevalence rates for the 1984 cohort of sixth/seventh-grade students in intervention schools shows a substantial slowing relative to control schools. The slowing represents a decline in drug use onset among would-be users between September 1984 and January 1986. The findings are similar regardless of whether analyses are unadjusted or adjusted for grade, race, urbanicity, and socioeconomic status.

Results on the 42 schools reported herein are consistent with findings from multiple waves of follow-up that have analyzed the smaller sample of individuals who are tracked throughout the project.²⁰ The tracking study showed that the net difference between program and control schools changed from

-5%, -2%, and 0% after 6 months to -8%, -4%, and -3% after 1 year for cigarette, alcohol, and marijuana use, respectively, in the last week; results were similar for prevalence rates of use in the last month. Preliminary results of 2-year follow-up in the tracking study (1986 through 1987) suggest that program effects have been maintained (-9%, -2%, and -3%). The maintenance of group differences over time suggests that the program effect is not a novelty effect or an initial interim effect that regresses back to control group levels over time.²² The increase in the net difference between groups over time suggests that the resistance skills and social environment intervention model

followed in this program, through the addition of multiple successive components, might be shifting the social normative climate in the youthful population toward a non-drug use norm. Recently, a defined population study on predictors of adolescent substance use concluded that the substantial drug use influence represented by perceived social environment might be most modifiable through community-based prevention efforts that promote drug use resistance skills and non-drug use social norms.²³

The public health implications of these results can be substantial. Based on our 1985 through 1986 results on cigarette smoking and 1986 dollar values,

and assuming maintenance of a net reduction in smoking prevalence rates across the original 1984 cohort and all subsequent program cohorts into middle adulthood, the estimated total savings in the Kansas City area from preventing an adolescent from becoming even a moderate smoker is \$40 679 for each boy and \$13 232 for each girl.²⁴ These projections should be observed with caution, since the MPP is still in its early stages and the formula used to calculate savings was based on the entire adolescent population as it moves into adulthood. Nevertheless, the projections illustrate the sizable potential of primary prevention efforts for impacting on long-term morbidity and mortality rates in the United States and the feasibility of primary prevention as a means for accomplishing this nation's goals toward improved health status of the population by 1990.

Two primary threats to the validity of the findings should be considered. The first is the possibility of nonequivalence of study groups, since the majority of schools were assigned to program or control conditions based on administrator flexibility in changing school-year schedules that already were in progress when the MPP was initiated. The equivalence of study groups on the dependent and potential confounding variables at baseline, the direction of the crossover effect on use rates between study groups over time, and the lack of a differential effect of assignment or attrition on study groups over time suggest that underreporting or other types of confounds probably are not operating in this study. The threat of nonequivalence will be addressed further by the randomized replication in Indianapolis.

The second threat derives from the study's reliance on self-report measures to estimate program effects. Self-reported drug use might not represent actual drug use prevalence rates in a community. Furthermore, it is possible, particularly during the course of an intervention that is aimed at changing social norms for drug use behavior, that

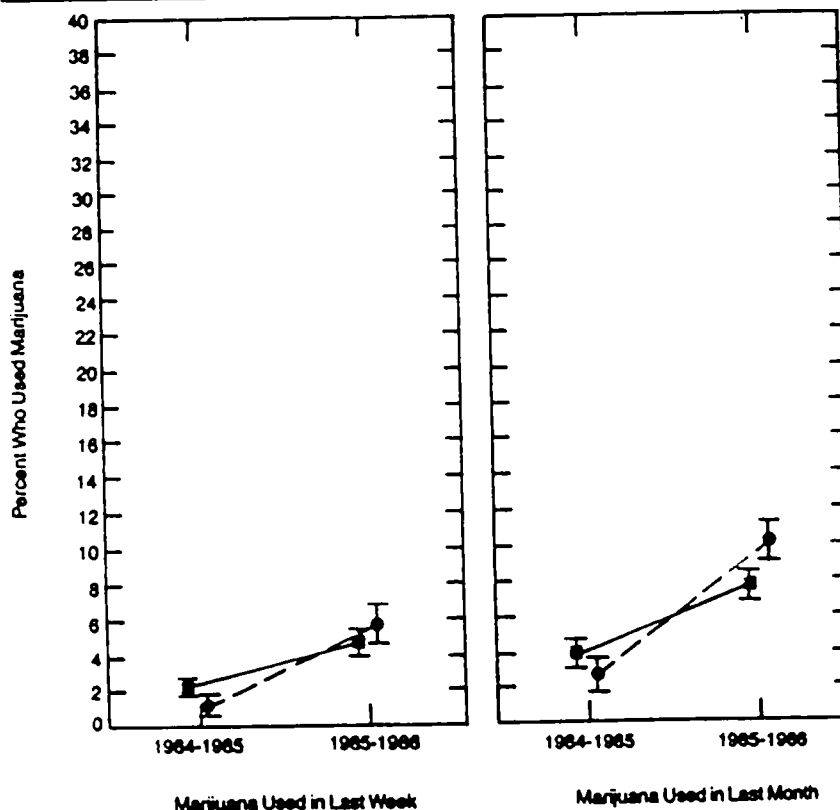


Fig 4.—Prevalence rates for marijuana use in the last week and the last month, adjusted for grade, race, urbanicity, and socioeconomic status. Solid line indicates program group; and dashed line, control group.

Table 4.—Change in Proportion of Drug Users After Intervention

Study Group	Proportion of Drug Users, % (95% Confidence Interval)					
	Unadjusted*			Adjusted†		
	Cigarettes	Alcohol	Marijuana	Cigarettes	Alcohol	Marijuana
Users in Last Month						
Program	3.4 (0.2-6.6)	4.0 (1.3-6.7)	3.2 (1.0-5.4)	3.4 (0.2-6.6)	4.2 (1.6-6.8)	3.4 (1.6-5.3)
Control	12.9 (7.8-17.9)‡	8.7 (5.7-11.8)‡	7.3 (4.5-10.2)‡	13.1 (7.5-18.6)‡	9.4 (6.5-12.4)‡	7.1 (4.0-10.3)‡
Users in Last Week						
Program	4.3 (1.8-6.9)	2.0 (0.2-3.9)	2.2 (0.7-3.7)	4.3 (1.7-6.9)	2.1 (0.2-4.0)	2.4 (1.2-3.6)
Control	10.4 (5.9-14.8)‡	4.5 (2.7-6.2)‡	4.7 (2.7-6.7)‡	10.5 (5.6-15.5)‡	4.9 (3.4-6.4)‡	4.7 (2.5-6.8)‡

*Change in proportion is adjusted for grade.

†Change in proportion is adjusted for grade, race, urbanicity, and socioeconomic status (% of fathers in professional/managerial occupations).

‡ $P < .01$, based on one-tailed tests.

§ $P < .05$, based on one-tailed tests.



Joe-Fiji
PARTNERSHIP FOR A DRUG-FREE AMERICA

JAMES E. BURKE
Chairman

May 4, 1993

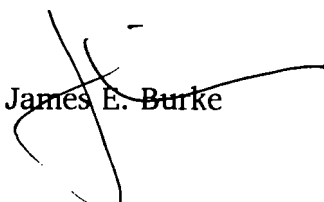
Mrs. Hillary Rodham Clinton
Office of the First Lady
The White House
Washington D.C. 20500

Dear Mrs. Clinton:

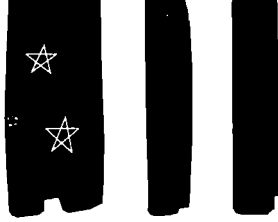
To keep you apprised of our efforts, I have agreed to speak as part of Congressman Schumer's National Summit on U.S. Drug Policy this Friday, May 7th. I am giving the same presentation that I prepared for you and Carol Rasco. I am also enclosing a one-page summary of what we believe has been learned and what we now need to do differently to further reduce America's illegal drug problem.

As you will see from the attached agenda, this conference has attracted a strong group of participants. I believe this reflects the very real concern about the importance of addressing drug abuse and its significant impact on our other major domestic issues.

Sincerely,


James E. Burke

✓ cc: Ms. Carol Rasco



PARTNERSHIP FOR A DRUG-FREE AMERICA

THE ILLEGAL DRUG PROBLEM

Where We've Been, Where We Are, Where We Need to Go

We believe it is important to develop a broad consensus about what we've learned and what we now need to do differently to further reduce America's illegal drug problem and its significant impact on America's other social issues.

1. **There has been a dramatic change in public attitudes about illegal drugs, resulting in extraordinary reductions in the number of users across all segments of the population.** Illegal drugs are becoming "denormalized" by potential users and non-addicted users, due to increasing perceptions of risk and social disapproval. This attitudinal shift has resulted in decreases of regular monthly users of over 40% since 1985. This improvement, reinforced by media emphasis, in-school prevention efforts, and drug-free workplace programs, has been across all ethnic and demographic groups and urban/suburban/rural locations. Importantly, the focal point of this change has been at the community level -- changes in individual attitudes and behavior supported by community consensus against drugs. **The continuing process of denormalization is basic to long-term success.**
2. **Greater availability and effectiveness of treatment is the most pressing need for the illegal drug problem today.** The estimated 6 million people in various stages of addiction are having the greatest impact on our cities and communities and themselves. The current system can treat only about one-third of the current total need. Most critical is the lack of treatment availability within our criminal justice system, and among HIV infected drug users and pregnant addicts. Current treatment needs require improvements in quality as well as quantity, and further research is key to both areas. More and earlier intervention is needed by families, the judicial system, and employers to drive people into treatment.
3. **Future policies and strategies should provide a better balance of resource allocation between supply and demand reduction efforts.** The current ratio of approximately 65% supply reduction/35% demand reduction does not provide sufficient resources for research, prevention and treatment. A 50%/50% ratio better approaches the current nature of the problem and is likely to be more effective and cost efficient. States must continue to supplement federal efforts, and not substitute federal dollars for their own. **More of all these resources need to be directed to local public/private partnerships, to support and expand community mobilization efforts, recognizing that this is where the drug problem will ultimately be solved.** A combination of effective in-school education and broad community-based prevention efforts -- including parents, businesses, healthcare professionals and law enforcement -- have been shown to significantly reduce adolescent drug use. This needs to be supplemented by special targeted approaches for high risk youth, particularly in urban areas. Much more research and evaluation is needed to better understand program funding priorities.

A compelling case can be made that drug abuse is still the nation's number one domestic problem. Drug abuse is imbedded in crime, family violence, school drop-out rates, homelessness, AIDS, healthcare costs, urban decay, and economic competitiveness. Until we reduce current levels of addiction and the process that leads millions to that end, it is unlikely we can significantly improve these other issues affecting our lives and the country. Further, as communities mobilize and organize to address drugs, each is inevitably drawn into dealing with the other related issues which will produce broader social change.

DRUG ABUSE POLICY ISSUES

1. The prevalence and impact of drug abuse

Despite a significant decline in the number of Americans who use illicit drugs of any kind, the incidence of heavy, high risk use of the most disabling substances (heroin, cocaine, crack, methamphetamine, etc.) has persisted unabated. It plays a major role in family dysfunction, further erodes inner city communities, drives many of our most intractable social problems, and generates enormous public costs. It involves a growing population of disordered drug abusers, who are largely responsible not only for the spread of crime and the renewed threat of infectious disease (AIDS and TB) but also for the rise in homelessness, welfare dependency, youthful violence and child abuse.

2. The role of federal drug abuse policy

Historically, federal policy has been directed towards limiting the spread of drug abuse by interdiction and demand reduction. It has exercised a powerful influence on law enforcement, research and the development of prevention and treatment resources. But it has had minimal influence on social policies that seek to revitalize inner city communities, remedy the alienation of minority youth, reform welfare, reduce health care costs, or overcome functional unemployment.

3. Drug abuse and law enforcement

Drug laws are an essential means of limiting the spread of drug abuse. Absent disincentives, no successful strategy of demand reduction is possible. But law enforcement by itself has little ability to alter the antisocial and self-destructive behavior of disordered drug abusers. It can, however, bring disordered drug abusers into treatment (and treatment to be successful need not be voluntary). Appropriate treatment has proven effective both as an alternative to prison and when provided in prison.

4. Drug abuse treatment

There are about 6 million Americans in need of some drug abuse treatment and approximately 600,000 treatment slots of all kinds. But, for the nation's one to two million disordered drug abusers, there are only 11,000 slots in the long-term residential treatment programs that -- because of their demanding and comprehensive nature -- provide the treatment of choice for abusers whose irresponsible and antisocial behavior makes them a burden to society and a danger to themselves and others.

PROPOSED POLICY GOALS

To confront the nation's most intractable and largely drug-driven social problems, drug abuse policy should broadly influence domestic policy and the activities of all federal agencies administering social programs.

Federal efforts should focus on reducing demand for drugs rather than limiting the supply, pursuing more aggressive means of demand reduction, and targeting the heavy, high-risk drug use that is most responsible for social disorder.

More aggressive demand reduction should include increased resources for local law enforcement and prevention and a substantial expansion of treatment resources.

Priority should be given to increasing treatment resources for disordered drug abusers (i.e. those whose antisocial behavior most burdens society and endangers others). Long-term residential programs provide the treatment of choice for these abusers, and here is where additional capacity is most urgently needed.

New health care policies being developed and managed care options being proposed must not be permitted to "medicalize" treatment for drug abuse or to limit the range of services and duration of treatment required by disordered drug abusers.

PHOENIX HOUSE

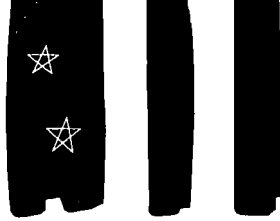
The nation's largest drug abuse services agency, Phoenix House opened in 1967, as the treatment arm of New York City's Addiction Services Agency. Since becoming a private, nonprofit institution in 1972, Phoenix House has expanded to include 15 centers in three states, with a treatment capacity in excess of 1,900 and more than 1,600 long-term residential treatment beds.

Services of Phoenix House include long-term and short-term residential treatment for adults and adolescents, outpatient care, intervention, and drug education. It operates five Phoenix Academies, residential high schools for youngsters in treatment, plus a day school, and an afterschool intervention program. It runs programs in the New York and California prison systems and in the largest New York City shelter for homeless families.

A leader in the development of drug-free treatment methods, Phoenix House conducted research that first documented the effectiveness of drug-free therapy and has trained counselors who staff treatment programs throughout the country.

Mitchell S. Rosenthal, M.D, president of Phoenix House, was deputy director for rehabilitation of New York City's Addiction Services Agency when he opened the first Phoenix House unit. A psychiatrist, whose pioneering work with substance abusers began at the U.S. Naval Hospital in Oakland, California, Dr. Rosenthal resigned his city post in 1972 to continue building the Phoenix House services system.

A leading spokesman for the treatment field, Dr. Rosenthal is chairman of New York State's Advisory Council on Substance Abuse. He has been a White House advisor on drug abuse policy and a consultant to the National Office of Drug Control Policy.



SUMMARY OF CONCLUSIONS OF A PRIME PROSPECT SEGMENTATION ANALYSIS
REGARDING DRUG USAGE AMONG TEENS

OBJECTIVE

This special analysis was conducted to identify teens most at risk of using drugs and to determine on an objective basis those factors which are most likely to place a teenager at risk. Secondly, the analysis determined whether the proportions of children in the "at risk" segments varied according to ethnic characteristics.

METHOD

A special statistical model which is a modified discriminant function was applied to the teenager samples in the PATS studies of 1991; 2353 respondents represented U.S. teens in their true proportions by age and race. Separately, to assure reliability, the analysis was conducted on minority teens; in this case the '91 and '92 samples were combined to give sufficient bases, 1722 respondents.

This model divides the sample into four groups on the basis of their propensity to and current usage of drugs. It determines which factors, among hundreds of which are entered into the model, are most likely to predict membership in each group. The segments are: Core Users--users whose attitude and demographics profile are highly associated with drug usage; Vulnerable Users, current users whose profile suggests they are likely to discontinue use; At Risk Non-Users, those who never tried drugs who are highly likely to begin using; and Other Non-Users who are so different from users that they are highly unlikely to begin using or even try drugs.

CONCLUSIONS

-Attitudes toward drugs are the predominant variables that determine whether a child is likely to use. The Core and Vulnerable Users are very similar in their tolerant attitudes to drugs and drug users. Moreover, they are less aware of the physical or social risks of drugs and the affects that usage would have on parents and siblings. Yet these two groups, both of whom use, are dramatically different in their demographic characteristics and the levels of dysfunction of parents. Core Users have highly disadvantaged backgrounds and Vulnerable users do not. They have the middle class average profiles of the Other Non-Users. Yet they have tried drugs and most currently use.

-Home-life and life-style characteristics, along with the parental problems of drug or alcohol usage are important in placing a teen at risk of trial, but these problems can be overcome if a teen is inoculated with strongly negative attitudes toward use and users.

This analysis determined that:

-There are sharp differences between these four groups on the basis of their attitudes toward drugs and their background characteristics. These differences clearly predict membership in the user and non user groups. Sizes of the groups are: Core 19%, Vulnerable, 9%, At Risk Non-Users, 17% and Other Non-Users, 55%.

-Minority teens segment in the same manner as the teens at large and they are no more likely to use drugs than teens in general. This is true despite the fact that a larger proportion of them have disadvantaged

AN ANALYSIS OF THE PAT STUDY

AMONG TEENS

APRIL, 1992

FOR THE: PDFA

METHOD

THIS ANALYSIS WAS CONDUCTED ON THE 2,353 TEENS WHO WERE INTERVIEWED IN 1991; THE 1,722 BLACK/HISPANIC TEENS INTERVIEWED IN 90/91.

THREE STATISTICAL ANALYSES WERE PERFORMED:

1. PRIME PROSPECT ANALYSIS

TO IDENTIFY NON-USERS "MOST AT RISK"; AND USERS WE HAVE BEST CHANCE OF PERSUADING TO STOP, "VULNERABLE USERS." THIS SEGMENTS INTO FOUR GROUPS:

- o CORE USERS - USERS WHOSE ATTITUDES AND DEMOGRAPHICS ARE ASSOCIATED WITH USAGE;
- o FRINGE USERS - USERS WHOSE PROFILE SUGGESTS THEY ARE "VULNERABLE" TO OUR MESSAGES TO STOP USING.

- AT-RISK NON-USERS - NON-TRIERS THAT HAVE AN ATTITUDE AND DEMOGRAPHIC PROFILE SIMILAR TO CORE USERS, AND ARE PREDICTED TO BEGIN USING; AND
- NON-USER OTHERS - TEENS WHO NEVER TRIED MARIJUANA AND WHOSE PROFILE SUGGESTS THEY ARE DRAMATICALLY DIFFERENT FROM USERS.

THIS ANALYSIS DETERMINES COMMONALITIES IN THE AT-RISK USING GROUPS AND THE FACTORS MOST ASSOCIATED WITH NON-USE. USAGE WAS DETERMINED BY EVER VS. NEVER USED MARIJUANA.

2. TABULAR ANALYSIS

TO RANK THE ATTITUDES OF YOUTH WHO NEVER TRIED, FORMER
USERS, AND THOSE WHO CURRENTLY USE. FOR THIS ANALYSIS,
USAGE IS DEFINED AS HAVING USED MARIJUANA IN THE PAST
30 DAYS.

3. CAUSAL PATH ANALYSIS

CHAINS ATTITUDES BASED ON CORRELATIONAL PATHS TO
UNDERSTAND NATURE OF THOUGHT PROCESS REGARDING RISK
MESSAGES.

CONCLUSIONS

1.

AMONG TEENS AT LARGE, AS WELL AS INNER-CITY TEENS, PDFA SHOULD FOCUS FIRST ON THE "AT RISK NON-USERS" WHO ARE MORE VULNERABLE TO USE FROM FAMILY AND LIFE-STYLE BACKGROUNDS, AND NEED REINFORCEMENT IN THEIR NEGATIVE ATTITUDES TOWARD MARIJUANA USAGE.

REINFORCEMENT IS KEY BECAUSE THESE TEENS ARE MORE TOLERANT OF THE RISKS AND REWARDS OF DRUG USE.

SECONDARILY, WE SHOULD ENCOURAGE THE "FRINGE USER" TO DISCONTINUE USE BEFORE THEY GET IN TROUBLE. THESE USERS ARE NOT CONVINCED ABOUT THE RISKS OR REWARDS OF POT.

MEDIA SHOULD BE INTENSIFIED AGAINST ETHNIC TEENS TO REACH THEM AS EFFECTIVELY AS TEENS IN GENERAL, AND TO REDUCE THEIR DISPROPORTIONATE RISK TO BECOME USERS.

2.

THE MESSAGE AREAS SHOULD FOCUS AROUND THREE ATTITUDES WHICH RELATE TO THE GENERAL FEARS OF "AT-RISK NON-USERS."

- A) THAT DRUGS WILL MESS UP YOUR LIFE - YOU COULD BECOME HOOKED, DEPENDENT ON MARIJUANA, WHICH WOULD LEAD TO TROUBLE WITH PARENTS (MOST IMPORTANTLY), AT SCHOOL OR WITH THE LAW, AND GENERALLY CAUSE YOU TO PERFORM AT A LOWER LEVEL. ALSO, ADDICTION TO POT COULD LEAD YOU TO TRY OTHER THINGS;
- B) THAT YOU WILL END UP WITH AN UNDESIRABLE GROUP OF FRIENDS - WHO ACT STUPID AND ARE LOSERS IN GENERAL, AND THAT YOUR OWN NON-USING FRIENDS ARE LIKELY TO LOSE INTEREST IN BEING WITH YOU;
- C) THAT POT CAN MESS YOU UP - EVEN THOUGH IT MAY GIVE MOMENTARY PLEASURE, MARIJUANA CAN CAUSE PSYCHOLOGICAL AND EVEN PHYSICAL HARMS AS A RESULT OF DEPENDENCY AND GOING ON TO MORE DANGEROUS DRUGS.

FINDINGS

THE ANALYSIS OF TOTAL U.S. TEENS AND ETHNIC INNER-CITY TEENS CLOSELY PARALLEL EACH OTHER.

I.

SHARP SEGMENTATION AMONG TEENS ACCORDING TO USAGE OF AND PREDISPOSITION TO USE

- o DEMOGRAPHIC AND LIFE-STYLES
- o ATTITUDES TO DRUGS AND THEIR SERIOUSNESS

1. CORE USERS (19%) - THESE TEENAGERS HAVE DISADVANTAGES IN THEIR HOME LIVES WHICH PLACE THEM MORE SQUARELY IN THE DRUG-USING CULTURE:

- THEY ARE MORE LIKELY TO HAVE DIVORCED PARENTS OR HAD A DEATH IN THE FAMILY.
- PARTICULARLY, THEY HAVE LESS SUPERVISION AND ARE MORE LIKELY TO EXHIBIT CHARACTERISTICS OF A MATURE LIFE-STYLE; LEFT ALONE OFTEN, GOING TO PARTIES ALONE, LIKELY TO HAVE A JOB, HANGING OUT WITH OLDER KIDS AND SEXUALLY ACTIVE.
- THEY ARE ALREADY LIKELY TO BE IN TROUBLE IN SCHOOL, WITH PARENTS OR THE LAW, AND OFTEN FEEL BORED AND RESTLESS.
- PARENTAL AFFECTS ARE MORE IMPORTANT THAN THAT OF FRIENDS OR SCHOOL, MANY CORE USERS FEEL REJECTED/PUNISHED, HAVE PARENTS WHO DRINK TOO MUCH OR ARE ABUSIVE. CLEARLY, DESTRUCTION OF SELF-CONFIDENCE/WORTH OCCURRING WHEN PARENTS ARE NOT LOVING IS VERY IMPORTANT IN CREATING A VULNERABILITY TO DRUG USAGE.

THESE CORE USERS APPEAR TO BE MOTIVATED TO USE BY A SEARCH FOR ADVENTURE AND FUN AND ESCAPE FROM LIFE-STYLE DIFFICULTIES, AS WELL AS A STRONG CURIOSITY JUST TO SEE WHAT IT'S ALL ABOUT.

7% OF THESE TEENS ARE HISPANIC AND 21% ARE BLACK.

THEY:

- ARE MORE TOLERANT OF DRUG USAGE;
- FEEL IT IS LESS RISKY OR THREATENING TO A POSITIVE
LIFE-STYLE;
- FEEL DRUGS ARE A PART OF GROWING UP;
- FEEL THAT IT IS OK TO SMOKE POT IN PRIVATE;
- LIKE TO GET HIGH OCCASIONALLY AND BELIEVE POT IS FUN
TO USE, ESPECIALLY AT PARTIES;
- FEEL THAT EXPERIENTIAL PLEASURES ONE RECEIVES FROM
BEING HIGH ON POT OUTWEIGHS RISKS;

- FEEL THAT ONE IS MORE RELAXED SOCIALLY (50%), MUSIC AND SEX ARE BETTER, AND 40% EVEN SAY THAT DRUGS HELP KIDS COPE.
- HALF DO ADMIT THAT IT IS EASY TO GET HOOKED ON POT AND AGREE THAT KIDS SHOULD NOT ENCOURAGE OTHERS.

2. FRINGE USERS (9%) - ARE LIKELY TO HAVE DISCONTINUED REGULAR USE OR ARE SOMEWHAT AMBIVALENT ABOUT USING. THEY DO NOT FEEL EITHER AS PERMISSIVE ABOUT USING OR AS BLASE ABOUT CONSEQUENCES OF USING AS CORE USERS. 16% OF THESE TEENS ARE HISPANIC AND 21% ARE BLACK.

- o THIS GROUP TRIED POT TO BE PART OF THE SOCIAL GROUP THEY WERE IN, THEIR LIVES HAVE NOT FALLEN APART AS A RESULT BUT THEY ARE MOVING AWAY FROM THE DRUG CULTURE AND WILL PROBABLY STOP USING AS THEY MATURE.
- o THESE TEENAGERS DO NOT HAVE SHARPLY DISADVANTAGED HOME BACKGROUNDS OF CORE USERS: THEIR PROFILE IS VERY SIMILAR TO NON-TRIERS; MORE OFTEN SUPERVISED BY THEIR PARENTS, LESS LIKELY TO FEEL REJECTED OR ABUSED, INVOLVED WITH ACTIVITIES IN SCHOOL OR COMMUNITY SUCH AS AN ATHLETIC TEAM, 39%, ARE LESS LIKELY TO FEEL BORED OR RESTLESS.

- THEY ARE MORE CONCERNED ABOUT RISKS OF POT, FROM ADDICTION, PHYSICALLY OR PSYCHOLOGICALLY. HOWEVER, DO NOT HAVE THE GREAT FEARS OF THE "OTHER NON-USERS," PERHAPS BECAUSE THEY USE AND MOST DO NOT FIND THEMSELVES IN SERIOUS TROUBLE.

- ATTITUDINALLY, THEY ARE IN THE MIDDLE, BELIEVING MORE THAN NON-USERS THAT DRUGS ARE PART OF GROWING UP (39%), AND THAT POT IS NOT HARMFUL (43%). MANY FEEL USERS ARE ADVENTUROUS AND POPULAR PEOPLE SMOKE, (38%).

3. AT-RISK NON-USERS (17%) - NON-USING TEENS DESERVE OUR FIRST PRIORITY. THESE NON-USERS WILL PROBABLY BEGIN USING, AT LEAST POT, IF NOT HELPED BY SCHOOL AND COMMUNITY AND SUPPORTED IN THEIR BELIEFS BY OUR MESSAGES. 28% OF THESE TEENS ARE BLACK AND ONLY 10% ARE HISPANIC.

- o A FEAR OF DRUGS, APPEARS TO BE PREVENTING USAGE, THE REACTIONS OF PARENTS IN PARTICULAR, AS WELL AS PERSONAL RISKS THEY FACE PHYSICALLY OR PSYCHOLOGICALLY. THESE TEENAGERS FEAR THE RISK OF GETTING HOOKED ON POT AND GOING ON TO HARDER DRUGS.
- o IMPORTANTLY, THEY BELIEVE USERS DO WORSE IN EVERY ASPECT AND DO NOT WANT TO HANG OUT WITH USERS. LIKE MOST, THEY BELIEVE A KID SHOULD DISCOURAGE ANOTHER FROM USING, BUT 3/4 FEEL IT IS REALLY HARD TO SPEAK OUT AT SCHOOL TO TRY TO STOP SOMEONE.
- o THESE AT-RISK TEENS DO NOT APPEAR TO BE CURIOUS ABOUT TRYING, BUT 1/4 BELIEVE THAT POT IS NOT HARMFUL AND COULD BE FUN, THAT USERS ARE NO DIFFERENT AND ARE EVEN ADVENTUROUS, OR THAT IT'S OK TO SMOKE POT. THESE TOLERANCES BRING THEM CLOSER TO USING.

4. NON-USER OTHERS (55%) - THESE REMAINING TEENS ARE NOT LIKELY TO BEGIN USE OUR JOB IS TO REINFORCE THE ATTITUDES THEY ALREADY HOLD AND TEACH THEM RESISTANCE SKILLS.

- o THESE TEENS HAVE MORE STABLE HOMES AND A GOOD DEAL OF PARENTAL SUPERVISION AND SUPPORT.
- o THEY HAVE VERY STRONG NEGATIVE ATTITUDES TOWARDS DRUGS IN GENERAL AND TOWARDS POT.
- o ABOUT ONE HALF ARE INVOLVED IN AN ATHLETIC TEAM OR MUSIC PROGRAM.
- o FEW HAVE GOTTEN INTO A DELINQUENT PATTERN AT SCHOOL OR OUTSIDE.
- o THEY HAVE VERY STRONG FEARS ABOUT DRUG USE, ESPECIALLY THEIR PARENTS' REACTIONS (69%) AND GETTING INTO TROUBLE WITH THE LAW. THEY WORRY THAT USAGE COULD AFFECT SIBLINGS OR LOVED ONES. THEIR OWN LIFE-STYLES, WHICH ARE POSITIVE NOW COULD BE DISRUPTED.

- IF ONE WERE TO USE, THE ABILITY TO PERFORM WOULD BE IMPAIRED, AND THEY WOULD DO WORSE IN SCHOOL OR SPORTS.
- THEY DO NOT APPEAR TO BE CURIOUS ABOUT TRYING, PERHAPS BECAUSE THEY DO NOT BELIEVE THE EXPERIENTIAL BENEFITS WOULD BE AS GOOD AS THE USERS DO.
- SOCIALLY, THEY DO NOT WANT TO HANG OUT WITH DRUG USERS, AND THEY DO NOT BELIEVE USAGE IS A CRITERIA FOR POPULARITY.

II.

ATTITUDES ARE THE KEY DETERMINANTS OF WHETHER ONE USES DRUGS, AND POTS SPECIFICALLY

HOME LIFE, ETC. IS IMPORTANT, ESPECIALLY THE DYSFUNCTION OF PARENTS. BUT ATTITUDES ONE HOLDS ABOUT USING DRUGS IS KEY DETERMINANT OF USE OR NOT. THIS IS DEMONSTRATED BY "AT-RISK NON-USERS" WHO HAVE DISADVANTAGES OF CORE USERS, YET HOLD STRONG NEGATIVE ATTITUDES TOWARD DRUGS, AND HAVE ABSTAINED FROM TRYING.

ATTITUDE PATTERNS DISCRIMINATING MOST SHARPLY THE GROUPS RELATE TO:

- CURIOSITY AND PLEASURE IN BEING HIGH OCCASIONALLY;
- BELIEF THAT DRUGS HELP YOU SOCIALLY OR TO COPE WITH YOUR PROBLEMS; AND
- SEARCH FOR EXPERIENTIAL BENEFITS OF FUN, PLEASURE AND HIGHS IN SEX AND CREATIVITY.

- NON-USERS DO NOT WANT THE SOCIAL COMPANY OF USERS, ARE SCARED BY DRUGS, BELIEVE USING CAN MESS UP YOUR LIFE, LEAD TO ADDICTION AND HARDER DRUGS, AND DOING WORSE IN SCHOOL OR SPORTS.

- FORMER USERS ARE IN THE MIDDLE: MORE LIKELY TO HAVE WANTED THE EXPERIENCE OF THE HIGH, TO AGREE THAT DRUGS HELP YOU FORGET YOUR TROUBLES. BUT ALSO, THEY DEMONSTRATE FEARS OF THE NON-TRIERS: BELIEVING USERS ACT STUPID, DRUGS MAKE YOU DO WORSE IN SCHOOL AND SPORTS, AND YOU CAN GO ON TO BE HOOKED OR TO TRY OTHER DRUGS.

CLEARLY, THEIR EXPERIENCE LED THEM TO BELIEVE THESE RISKS ARE REAL, AND THEY HAVE DECIDED AND HAD THE ABILITY TO DISCONTINUE USAGE. WE MUST FIND A CLEAR WAY TO EXPRESS THEIR FEARS AND EXPERIENCES TO OTHERS WHO HAVE NOT YET TRIED BUT ARE AT RISK.

III.

EXPOSURE TO THE PDFA MESSAGES

APPEARS TO BE HAVING AN EFFECT ON NON-USER ATTITUDES
TOWARDS ILLEGAL DRUGS.

NON-USERS ARE MORE LIKELY TO HAVE SEEN, HEARD, OR READ THE
MESSAGES, ESPECIALLY FREQUENTLY, ONCE A DAY OR MORE. THAT
THIS IS A VALID RESPONSE IS CONFIRMED BY THE FACT THAT THE
DUMMY AD DOES NOT DISCRIMINATE AMONG THE GROUPS. NON-USERS
REPORT SIGNIFICANTLY MORE FREQUENT VIEWING OF MAN FRYING
EGG AD, FATHER AND SON, AND GIRL JUMPING INTO THE POOL.

TOTAL TEENS ARE MORE LIKELY TO HAVE VIEWED OR HEARD OR READ
PDFA MESSAGES THAN ETHNIC INNER-CITY TEENS.

FINDINGS

SIZES OF THE SEGMENT

PRIME PROSPECT
SEGMENTATION

	<u>TOTAL US</u>	<u>INNER-CITY ETHNIC</u>
	%	%
CORE USERS	19	20
FRINGE USERS	9	8
AT-RISK NON USERS	17	19
OTHER NON-USERS	55	53

COMPARISON

TOTAL TEENS

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>RACE</u>				
WHITE	72	78	65	72
BLACK	21	21	28	22
ASIAN	1	3	2	2
HISPANIC ORIGIN	17	16	10	10
<u>USAGE</u>				
NEVER	--	--	100	100
FORMER	44	62	--	--
CURRENT	56	38	--	--

PRIME PROSPECT SEGMENTATION

TEENS PROFILE (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u> %	<u>FRINGE</u> %	<u>AT-RISK</u> %	<u>OTHER</u> %
<u>LIFE-STYLE</u>				
IN TROUBLE SCHOOL, PARENTS, POLICE	66	31	54	20
SEXUALLY ACTIVE	71	33	57	16
HANG WITH OLDER KIDS	76	44	70	46
FELT BORED/RESTLESS	63	36	58	37
<u>ACTIVITIES</u>				
STARTED JOB	65	34	66	20
PART-TIME	55	23	59	20
ATHLETIC TEAM	23	39	29	44
MUSIC	11	22	12	25
<u>FEEL REJECTED</u>				
PARENTS	44	22	42	17
FRIENDS	28	21	33	22
PUNISHED BY PARENTS	38	21	35	19

PRIME PROSPECT SEGMENTATION

TEENS PROFILE (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>PARENTAL ABUSE</u>				
PARENTS DRINK ALOT	26	10	21	5
BEATEN UP	20	6	14	2
SEXUALLY	8	4	9	2
<u>DELINQUENCY</u>				
FAMILY MEMBER JAILED	26	10	26	6
SOLD DRUGS	28	3	15	1
LOST DRIVER'S LICENSE	17	5	16	3

PRIME PROSPECT SEGMENTATION

TEENS PROFILE

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>DEMOGRAPHICS</u>				
PARENTS DIVORCED	43	30	33	22
PARENTS NEVER MARRIED	13	6	16	6
DEATH IN FAMILY	30	18	28	18
PARENTS MARRIED	38	51	43	62
<u>LEFT ALONE</u>				
ALL/MOST TIME	66	30	61	27
ABSENT 6+ DAYS	59	30	46	22
LOTS OF UNSUPERVISED TIME	70	33	65	35
GO TO PARTIES ALONE	43	21	39	21
NOT IN SCHOOL	10	1	5	*

* LESS THAN 1%

PRIME PROSPECT SEGMENTATION

TEENS FEARS

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>GREAT FEAR</u>				
PARENTS REACTIONS	36	46	61	69
TROUBLE WITH LAW IF CAUGHT	29	35	58	65
DAMAGED REPUTATION	17	28	52	56
EMPLOYER REACTIONS	28	37	54	63
HARMFUL SUBSTANCES	20	29	55	62
INFLUENCE ON SIBLINGS	23	31	49	59
LOVED ONE'S REACTION TO POT USE	21	25	52	57
ABILITY TO PERFORM	19	22	52	62
FEELING GUILTY	14	25	48	57

PRIME PROSPECT SEGMENTATION

TEENS FEARS (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>NO FEAR</u>				
GETTING HOOKED ON POT	37	24	9	4
PHYSICAL DAMAGE FROM POT	37	24	9	4
PSYCHOLOGICAL DAMAGE	33	22	8	3

PRIME PROSPECT SEGMENTATION

TEENS ATTITUDES

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>AGREE STRONGLY</u>				
DRUGS MAKE YOU DO WORSE	33	44	70	72
DISCOURAGE SIBLINGS RIGHT	57	59	67	78
TAKING DRUGS SCARES ME	19	27	59	69
EASY TO BE HOOKED	23	28	50	58
POT STEPPING STONE	26	32	52	54
SELLER/GIVER NOT A FRIEND	18	28	50	61
DON'T WANT TO HANG WITH USERS	15	25	50	63
WOULD CHANGE FRIENDS IF SOME USE DRUGS	12	16	30	46

PRIME PROSPECT SEGMENTATION

TEENS ATTITUDES (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>% AGREE</u>				
POPULAR PEOPLE SMOKE POT	40	38	23	17
DRUGS HELP YOU RELAX SOCIALLY	48	36	17	8
TRIERS ADVENTUROUS	36	40	24	17
DRUGS ARE FUN	47	31	9	5
MUSIC SOUNDS BETTER HIGH	45	37	5	2
SEX BETTER HIGH	46	33	17	7
DRUGS HELP KIDS HAVING HARD TIME	40	30	18	9

PRIME PROSPECT SEGMENTATION

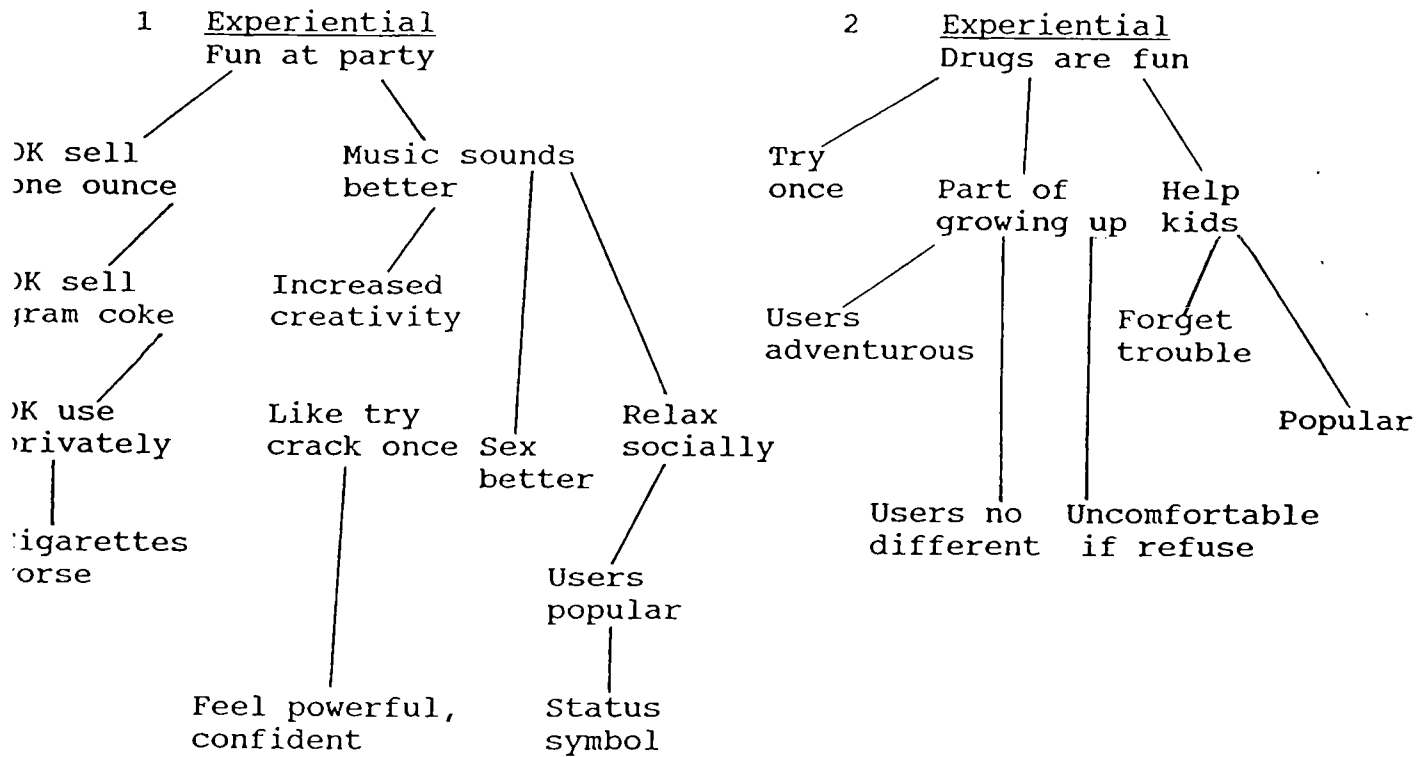
TEENS ATTITUDES (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%
<u>AGREE</u>				
KIDS SHOULD DISCOURAGE KIDS	57	64	74	79
EASY TO BE HOOKED ON POT	44	52	69	76
LIKE TO TRY POT ONCE	54	44	16	10
OK SMOKE POT IN PRIVATE	52	42	23	11
DRUGS PART OF GROWING UP	53	39	20	11
LIKE TO GET HIGH OCCASIONALLY	58	41	11	4
USERS NO DIFFERENT	50	41	26	18
POT NOT HARMFUL	50	43	24	13
FUN AT PARTIES	51	38	13	5

CAUSAL PATH
ANALYSIS

USERS

LIKE BEING HIGH
OCCASIONALLY

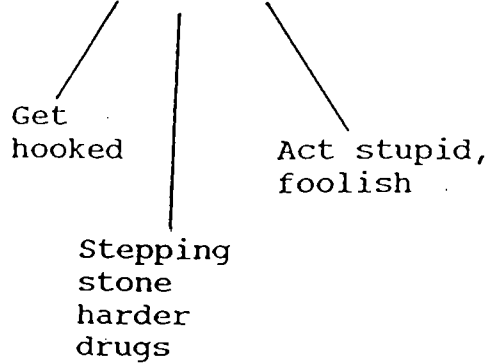


CAUSAL PATH
ANALYSIS

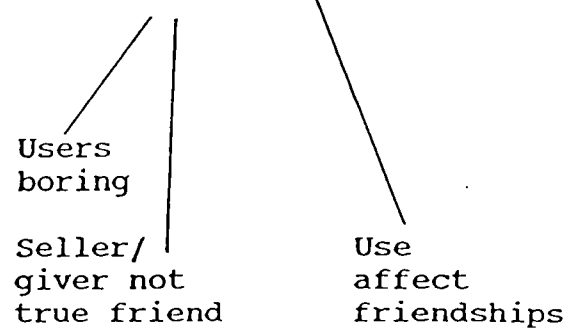
NON-USERS

DRUGS SCARE ME

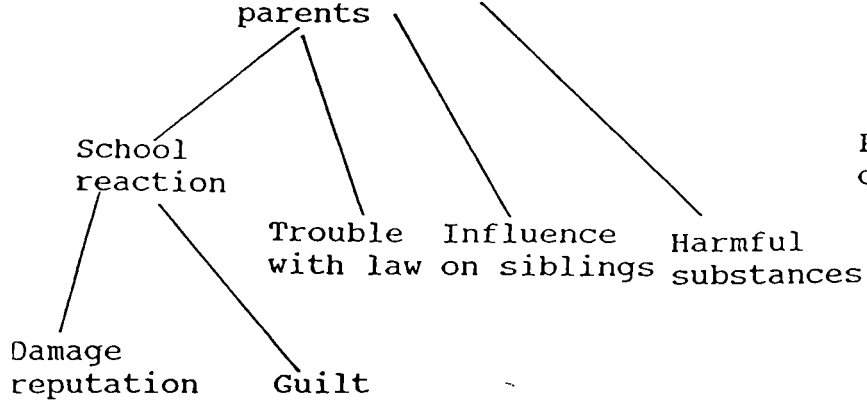
1 Life Effects
Drugs make you
do worse



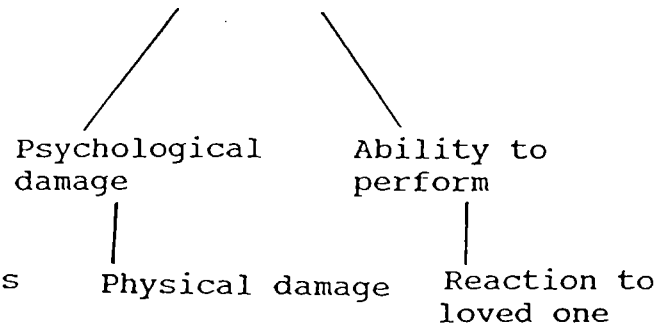
3 Social Effects
Don't want hang
with users



2 Life Effects
Reactions of
parents



4 Addiction
Getting hooked



CAUSAL PATH
ANALYSIS

NON-USERS

DRUGS SCARE ME

1 Life Effects

Drugs make you
do worse

Get
hooked

Act stupid,
foolish

Stepping
stone
harder
drugs

3 Social Effects

Don't want hang
with users

Users
boring

Seller/
giver not
true friend

Use
affect
friendships

2 Life Effects

Reactions of
parents

School
reaction

Trouble
with law

Influence
on siblings

Harmful
substances

Damage
reputation

Guilt

4 Addiction

Getting hooked

Psychological
damage

Physical damage

Ability to
perform

Reaction to
loved one

EXPOSURE TO PDFA ADS

MINORITY INNER-CITY TEENS

	<u>NEVER USED</u>	<u>FORMERLY USED</u>	<u>USE NOW</u>
	%	%	%
<u>SAW/HEARD ADS</u>			
DAILY OR MORE	37	31	23
<u>READ ADS</u>			
DAILY OR MORE	17	18	6

PRIME PROSPECT SEGMENTATION

TEENS ATTITUDES (CONT'D)

	<u>USERS</u>		<u>NON-USERS</u>	
	<u>CORE</u>	<u>FRINGE</u>	<u>AT-RISK</u>	<u>OTHER</u>
	%	%	%	%

FREQUENCY SEEN/HEARD

ONCE A WEEK OR MORE	50	50	51	62
DAILY OR MORE		40	37	40

FREQUENCY READ ADS

ONCE A WEEK OR MORE	25	26	29	29
DAILY OR MORE	14	13	17	15

OFTEN SAW/READ

MAN FRYING EGG	67	65	70	76
FATHER ASK SON	51	49	57	61
GIRL JUMPS POOL	45	44	50	55
WIDOW OF POLICEMAN	10	11	13	9
USER NEW SLAVERY	11	10	13	9
YOUTH HANDED JOINT	17	18	25	24

NEXT TABLES BASED ON ANALYSIS OF THOSE WHO NEVER USED,
FORMERLY USED, AND NOW USE POT

TEEN MARIJUANA ATTITUDES

	<u>NEVER</u> <u>USED</u>	<u>VS. FORMERLY</u> <u>OTHERS</u>	<u>VS.</u> <u>USED</u>	<u>VS.</u> <u>OTHERS</u>	<u>USE</u> <u>NOW</u>	<u>VS.</u> <u>OTHERS</u>
	%		%		%	
DON'T WANT TO HANG AROUND USERS	73	+38	46	-20	25	-44
PEOPLE SELLING DRUGS NOT FRIEND	68	+30	50	-11	26	-39
CHANGE FRIENDS IF THEY USE	54	+29	31	-18	20	-31
DRUGS SCARE ME	83	+36	60	-15	34	-45

TEEN MARIJUANA ATTITUDES (CONT'D)

	<u>NEVER USED</u>	<u>VS. OTHERS</u>	<u>FORMERLY USED</u>	<u>VS. OTHERS</u>	<u>USE NOW</u>	<u>VS. OTHERS</u>
	%		%		%	
POT STEPPING STONE TO HARDER DRUGS 77		+23	69	-2	39	-37
DRUGS MAKE YOU DO WORSE 84		+23	74	-4	48	-35
EASY TO BE HOOKED ON POT 74		+27	58	-10	36	-36
DRUG USERS ACT STUPID 74		+18	70	0	43	-31
DRUG USE AFFECTS FRIENDSHIP 64		+16	54	-6	41	-22
KIDS SHOULD DISCOURAGE KIDS 79		+21	68	-6	49	-28

TEEN MARIJUANA ATTITUDES (CONT'D)

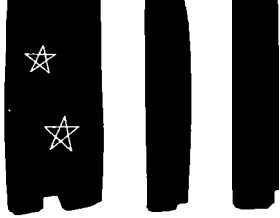
	<u>NEVER</u> <u>USED</u>	<u>VS.</u> <u>OTHERS</u>	<u>FORMERLY</u> <u>USED</u>	<u>VS.</u> <u>OTHERS</u>	<u>USE</u> <u>NOW</u>	<u>VS.</u> <u>OTHERS</u>
	%		%		%	
LIKE BEING HIGH ON DRUGS OCCASIONALLY	6	-45	33	+16	71	+60
DRUGS AT PARTY FUN	7	-40	31	+14	64	+53
LIKE TO TRY POT ONCE	11	-40	39	+19	63	+48
OK TO SMOKE POT IN PRIVATE	14	-35	36	+15	62	+44
DRUGS RELAX YOU SOCIALLY	10	-34	29	+11	60	+47
DRUGS PART OF GROWING UP	13	-36	34	+13	64	+48

TEEN MARIJUANA ATTITUDES (CONT'D)

	<u>NEVER USED</u>	<u>VS. OTHERS</u>	<u>FORMERLY USED</u>	<u>VS. OTHERS</u>	<u>USE NOW</u>	<u>VS. OTHERS</u>
	%		%		%	
MUSIC BETTER	6	-37	26	+12	59	+50
DRUGS ARE FUN	6	-37	25	+11	59	+51
POT NOT HARMFUL OCCASIONALLY	16	-33	36	+12	63	+44
DRUGS HELP YOU FORGET TROUBLES	17	-24	31	+ 9	51	+32
SEX BETTER HIGH	9	-31	25	+ 9	55	+43
POT INCREASES CREATIVITY	16	-29	29	+ 6	61	+43
USER POPULAR	18	-21	31	+ 8	48	+27
OK TO SELL POT TO FRIENDS	6	-28	19	+ 6	49	+41
USERS NO DIFFERENT	21	-28	37	+10	60	+37
DRUGS HELP KIDS HAVING HARD TIME	11	-23	22	+ 6	45	+32

TEEN MARIJUANA ATTITUDES (CONT'D)

	<u>NEVER USED</u>	<u>VS. OTHERS</u>	<u>FORMERLY USED</u>	<u>VS. OTHERS</u>	<u>USE NOW</u>	<u>VS. OTHERS</u>
	%		%		%	
MUSIC BETTER	6	-37	26	+12	59	+50
DRUGS ARE FUN	6	-37	25	+11	59	+51
POT NOT HARMFUL OCCASIONALLY	16	-33	36	+12	63	+44
DRUGS HELP YOU FORGET TROUBLES	17	-24	31	+ 9	51	+32
SEX BETTER HIGH	9	-31	25	+ 9	55	+43
POT INCREASES CREATIVITY	16	-29	29	+ 6	61	+43
USER POPULAR	18	-21	31	+ 8	48	+27
OK TO SELL POT TO FRIENDS	6	-28	19	+ 6	49	+41
USERS NO DIFFERENT	21	-28	37	+10	60	+37
DRUGS HELP KIDS HAVING HARD TIME	11	-23	22	+ 6	45	+32



PREVENTION AND DEMAND REDUCTION EFFECTIVENESS

There are a number of primary studies which, taken together, provide strong quantitative evidence for the effectiveness of demand reduction efforts. These studies and the general experience of a broad range of prevention and treatment experts suggest four important conclusions.

1. **Prevention of use and reduction/cessation of occasional (non-addicted) use of illegal drugs is primarily a function of a process of changing attitudes** towards drugs, their use, and their users. We know that these attitudes are: increased perceptions of risk and social disapproval.

(Enclosed Supporting Analyses: Institute for Social Research at the University of Michigan, factors correlating to the decline in marijuana and cocaine use among high school seniors; Rand Drug Policy Research Center issue paper on cocaine usage trends.)

2. **Urban youth, arguably the most at-risk group for illegal drug use and addiction, are strongly predisposed not to get involved with drugs.** Importantly, even with this group, attitudes are the critical factor determining whether or not they will use illegal drugs.

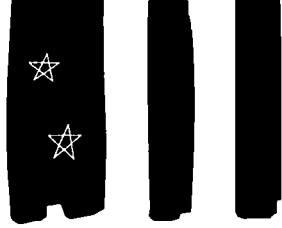
(Enclosed Supporting Analyses: Partnership for a Drug-Free America Teen Segmentation Study and New York Inner City Grade School Study.)

3. **The application of comprehensive prevention components within a community, especially when built around a core of a good in-school education prevention program, yields significant progress in reducing substance abuse of all kinds.**

(Enclosed Supporting Analyses: Project STAR 5-year evaluation by the National Institute on Drug Abuse of community prevention programs in Kansas City and Indianapolis.)

4. **Treatment of drug users in various stages of addiction is cost effective and results in declines in drug usage.** This is true even though we don't know nearly enough about what kinds of treatment work best, and even if the addict is forced into treatment.

(Enclosed Supporting Analysis: Institute of Medicine and National Academy of Sciences report on drug-treatment programs.)



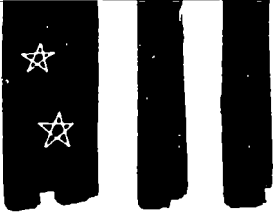
Federal Drug Policy

In 1989, President Bush announced a comprehensive federal anti-drug policy consisting of four strategic components - interdiction, law enforcement, prevention, and treatment. Interdiction and law enforcement are primarily intended to reduce supply of illegal drugs; prevention and treatment primarily intended to reduce demand for illegal drugs.

- Each national component, both supply and demand reduction efforts, is necessary to reducing drug abuse. None of the components, neither supply nor demand, is singularly sufficient to the task.
- Though each component has a specific and distinct objective, all components are interrelated, mutually supportive, and interdependent. For example, "fear of getting caught" is one of the key factors in the overall attitude of "perceived risk" that strongly affects demand. Similarly, since two-thirds of arrestees are drug users and perhaps one-quarter of our addicts are within the criminal justice system, we cannot expect law enforcement to succeed without effective treatment of these populations.
- No compelling information exists to suggest that the overall, comprehensive federal policy should be changed. If anything, the rightness of the four components working together seems even more correct today.

A solid (though circumstantial) case can be made for a more balanced allocation of federal monies and resources between supply and demand efforts. Approximately two-thirds of the federal monies spent behind our current national drug strategy are for supply related efforts with demand reduction efforts receiving one-third. This has remained relatively unchanged since 1989.

- There is no information to confirm that supply reduction efforts are more effective or efficient than demand reduction efforts. What research does exist suggests the opposite.
- Many more prevention and treatment initiatives exist today than in 1989, particularly at the community level. Private and state funds for these efforts are limited and unable to keep pace with the need.
- The drug abuse picture has changed significantly since the development of the initial allocation strategy. As the culture has begun to change, with trial and occasional use declining dramatically, heavy users and the 6 million people "in trouble" represent a far greater proportion of the problem. It is also these people who contribute so deeply to our other social problems like AIDS, crime and violence, education, homelessness, and international competitiveness.
- A federal policy that is unbalanced toward the "punitive" side of the comprehensive strategy is out-of-step with the perceptions of the public, most experts, and the changing needs of the drug issue and drug-using population. Addiction is no longer a choice -- it is a disease. We cannot hope to continue our progress in reducing drug usage without allocating sufficient resources to both preventing and treating this disease.

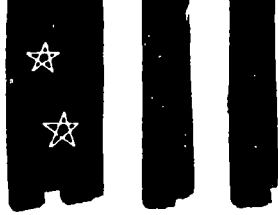


PARTNERSHIP FOR A DRUG-FREE AMERICA

SPECIFIC PDFA "WISH LIST" FOR THE CLINTONS

We believe that Presidential leadership in support of the public's continuing role in reducing illegal drug use is the single most critical factor determining the degree of progress we will achieve in drug abuse prevention. Toward that objective, we propose the following specific recommendations:

1. Once the new drug policy director is named, hold a "Drug Summit" similar to the Economic Summit. The primary purpose and benefit would be a comprehensive review of what's been accomplished, what's worked and why, the impact of drug abuse on healthcare and all our other social problems, and consensus-building toward an agenda of what needs to be done. The most important outcome of this, from our point of view, would be a more balanced allocation of federal dollars between supply and demand reduction efforts -- leading to more emphasis on prevention and treatment.
2. Presidential address to the nation outlining the impact of drug abuse on healthcare and our other key domestic issues, the new federal strategy, and the role each and all Americans must play.
3. Mrs. Hillary Rodham Clinton do a series of PSA's targeted to parents, and other key influencers, to encourage involvement that helps "inoculate" kids against trying drugs. Our objective would be to double the number of Parent's Guides already ordered and significantly increase the number of parents who talk to their kids about drugs. This would also be used nationally, and for all state/community prevention programs.
4. President Clinton do a series of PSA's about illegal drugs, specifically to support community coalitions and drug-free workplace programs. The first PSA would reinforce the essential role of anti-drug community coalitions in America's ability to prevent drug abuse. This would run nationally and be tagged for, and distributed to, all state/local communications programs. The second would be used on a state-by-state basis to support the Drugs Don't Work initiative to small businesses.
5. Mrs. Hillary Rodham Clinton participate in an event to thank and encourage greater participation by the creative community, who specialize in talking with kids and key influencers through the media. This event, tentatively scheduled to take place May 20th in New York City, would benefit immeasurably by Mrs. Clinton's personal request to continue their unique and important task.
6. President Clinton host a White House briefing for key media and entertainment industry leaders, to reinforce the role that only they can plan in "denormalizing" drug use. This event would be planned for early Fall, 1993, and represents an opportunity to persuade (in one meeting) many of the most influential media leaders about their responsibility and participation.



PARTNERSHIP FOR A DRUG-FREE AMERICA

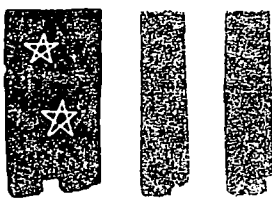
THE IMPORTANCE OF FEDERAL/PRESIDENTIAL LEADERSHIP TO REDUCING DEMAND FOR ILLEGAL DRUGS

Presidential leadership in support of the public's continuing role in reducing illegal drug use is the single most critical factor determining the degree of progress we will achieve in drug abuse prevention. The primary focus of this leadership needs to be the message to anti-drug community leaders that their coordinated, comprehensive, community-based programs are the backbone of America's drug control policy. It should also include three consistent points: the importance of the task to America's future; the roles that all Americans must play; and, an accounting of the progress that we are making.

The essence of our ability to solve the drug issue in America is the extent to which we can, over time, convince individual people not to try or use drugs, and convince individual people addicted to drugs to get into treatment.

This process, which we refer to as "denormalization", has two elements. First the individual behavior/decision changes as the attitudes that affect that behavior/decision change. Second, the most important factors reinforcing the desired behavior are the involvement of the individual's friends, families, peers, siblings, employers, doctors, teachers, and clergy who have the most influence on that individual.

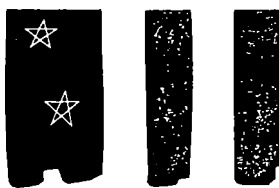
The attitudinal change and influencer involvement essential to demand reduction are mostly driven, we believe, by information and persuasion and not policy or legislation. While a powerful "system" of persuasion catalysts is already occurring through the media, the workplace, and particularly within communities, it is not totally self-sustaining. It requires, like all important movements, personal reinforcement of the importance of the task, an accounting of progress toward an objective, and an understanding of the roles that each of us must play.



PARTNERSHIP FOR A DRUG-FREE AMERICA

Topics of Concern About the Drug Issue Today

1. **Saliency and the Leveling Off of Attitude and Usage Improvements.** How do we rebuild and maintain the perception among various publics that the problem of illegal drugs has a serious impact on all of our lives, and that so much of what concerns them is (directly or indirectly) made much worse by the use of illegal drugs; that it is THEIR PROBLEM?
2. **Community Coalition Support.** How can the critical movement of committed and involved individuals within communities across the county be encouraged, supported, informed, and motivated?
3. **Sourcing and Coordination of Information.** We still do not know nearly enough about usage levels and trends, the factors that affect these levels and trends, treatment effectiveness, and how drug abuse affects our other major social issues. What information does exist is often unanalyzed, unreliable, incomplete or out-of-date by the time it is released. This need exists for both those involved in the issue directly and the general public.
4. **Treatment.** The single greatest need to complement prevention efforts and drive significant progress in demand reduction is a plan to treat the six million people "in trouble". There is no focused effort to build an informed and compelling case for treatment, either nationally or as it affects individual communities (perception of morality/criminality instead of disease).
5. **Illegal Drugs Versus All Substance Abuse.** Do we risk comprising future progress against illegal drugs by combining them as a healthcare issue with all substance abuse? Denormalization levels for both attitudes and usage are not comparable among illicit drugs, alcohol, and tobacco. Does an approach that combines all three give too much ground to legalization? Should/can these substance abuses be "unsold" separately and differently?
6. **Increased Demand From Public and Private Resources.** As more community programs, treatment programs and workplace efforts proliferate and require more and more resources and funding, can some approaches be organizationally cooperative and/or integrated? How can adequate funding be obtained long term?
7. **Complexity of Urban Drug Problem.** Though research among urban youth suggests a high awareness of the dangers of drugs and a strong disposition to not use them, narrow focus initiatives seem unlikely to produce significant progress in the face of enormous environmental pressures/factors.
8. **Increasing Pressure for Legalization/Decriminalization.** With a decline in importance of the problem and increased efforts by some to call punitive measures unsuccessful, should we more actively debate this? Does that risk further credibility/awareness?
9. **Partnership Focus.** How should our organization best capitalize on our "consumer franchise" and allocate our skills and resources over the next two years? Should we concentrate on saliency at the expense of denormalization and attitude change?
10. **Partnership Viability Beyond 1994.** Is there sufficient need for the Partnership's mission and organizational capabilities to maintain it? Can the media, agency volunteerism, and funding resources be maintained? Should/can we be merged with another organization? Should we seek government funding?



PARTNERSHIP FOR A DRUG-FREE AMERICA

NORMALIZATION VS. DENORMALIZATION

The Partnership's mission is to help reduce demand for illegal drugs by using media communications to change the attitudes that affect trial and use. Our strategies include increasing perceptions of risk and social disapproval, while continually reinforcing the tone and public "standard" of denormalization -- that illegal drugs and the usage behavior are not an acceptable, benign part of growing up. That standard means we "accept as normal" no use of any illegal drug by anyone at any time.

The organization NORML and the people who support its objectives stands for the opposite -- normalization. Legalization and/or decriminalization are the means to the end of normalization. It is our view that the process of normalization is responsible for the epidemic levels of trial, use and addiction rates that have resulted over the past two and a half decades. Conversely, the progress that has been achieved over the past six to eight years has been driven primarily by the public's embracing denormalization and accepting that the risks outweigh the benefits.

From a communications point-of-view and understanding the objective of decreasing the number of our children who get involved with drugs, we must continue to reinforce the standard and tone of denormalization. Everything we do drives against that objective. Consequently, we stand squarely between NORML and their objective.

Summary of Findings on Salience/Relevance of Illegal Drug Issue

OBJECTIVES:

This research was conducted by the Partnership for a Drug-Free America to assess the salience and personal relevance of the drug issue to Americans today, and to identify messages which could increase their concern with the issue.

SPECIFIC OBJECTIVES WERE TO:

- Measure the degree of concern with drugs alone and relative to other issues. To determine whether that concern increased or decreased.
- Determine levels of awareness about drug usage effects on key social issues and their personal relevance to Americans.
- Gauge which, if any, of nine facts could raise salience and relevance of the drug issue.

METHODS:

The research was conducted using the Opinion Research Corporation CARAVAN study, an ongoing national probability phone study.

980 adults, 18 years of age and older, were interviewed over the weekend of February 4-7. These topline results are based on total sample. Follow-up analyses will report differences by region, city size, race, age, sex, and income of respondent.

TODAY'S CONCERN ABOUT DRUG ISSUES

Rank Order of "Most Harmful" for 4 Issues to Community:

	<u>#1 Concern</u> %	<u>#1 or #2</u> %
Drugs	[31]	[59]
Crime	26	57
Economy	25	42
Health care costs	16	35
DK/NA	3	4

TODAY'S CONCERN ABOUT DRUG ISSUES

Your Concern with Usage / Effects on Self / Family:

	<u>Extremely</u> %	Very/ <u>Extremely</u> %	<u>Not at All</u> %
Cocaine, Crack, Heroin	37	[67]	(14)
Marijuana	31	54	23

TODAY'S CONCERN ABOUT DRUG ISSUES

Willingness to Take Action:

	<u>Extremely</u> %	Very/ <u>Extremely</u> %	<u>Not at All</u> %
Write a letter to congressman	23	[58]	17
Give hours helping in community	16	43	22
Pay more taxes	(9)	28	[41]

TODAY'S CONCERN ABOUT DRUG ISSUES

Present Concern vs. 3 Years Ago:

<u>More</u>	<u>Same</u>	<u>Less</u>
[56]	37	(5)

How Social Issues Affect Self/Family

	<u>Concern</u>	
	<u>Greatly</u>	<u>Greatly/Somewhat</u>
	%	%
Economy	65	93
Health care costs	62	90
High taxes	61	93
Declining quality of education	61	85
Crime on the streets	45	86
Safety in home	43	79
AIDS	42	70
Homelessness	31	69
Declining work productivity	29	68

How Social Issues Affect Self/Family and Awareness of Drug Influence:

	<u>Concern</u>		<u>Caused</u>
	<u>Greatly</u>	<u>Greatly/Somewhat</u>	<u>by Illegal Drugs</u>
	%	%	%
Economy	65	93	16
Health care costs	62	90	18
High taxes	61	93	9
Declining quality of education	61	85	23
Crime on the streets	45	86	[76]
Safety in home	43	79	29
AIDS	42	70	[54]
Homelessness	31	69	31
Declining work productivity	29	68	19

Influence of Facts on Concern About Drug Issue's Effects on Self/Family:

	<u>More Likely to Act</u>			
	<u>Be More Concerned</u> %	<u>Top of Mind/ Salient</u> %	<u>Give Personal Hours</u> %	<u>Pay More Taxes</u> %
Child abuse has increased 226% in the last 10 years – over half of it involved parents using drugs.	80	38	73	63
Last year alone, drug abuse cost the U.S. economy \$76 billion.	72	5	56	42
Taxes in the U.S. are \$100 billion higher because of drug abuse.	72	10	54	39
The U.S. has the highest murder rate in the world. At least half are drug related.	70	7	56	46
Your insurance premiums are higher because of money needed to take care of drug-exposed babies.	69	12	58	47
Two-thirds of all crimes committed in your area involved drugs.	65	30	60	50
Most new AIDS cases are drug related.	58	15	51	42
Drug use in the workplace seriously reduces the ability of the U.S. to compete internationally.	55	6	47	35
Hospitals in your community are being overwhelmed by drug-related emergencies.	54	11	51	39
None / DK / NA		14	17	27

CONCLUSIONS:

- THE MAJORITY OF AMERICANS ARE HIGHLY CONCERNED ABOUT DRUG USAGE TODAY, EVEN FEARING THE PROBLEM IS WORSE NOW IN THEIR COMMUNITIES THAN THREE YEARS AGO. HOWEVER, THEY DO NOT PLACE IT HIGHER ON THEIR "ACTION LIST" BECAUSE THERE IS LITTLE AWARENESS OF ITS DIRECT EFFECTS ON THE SOCIAL ISSUES OF MOST CONCERN TO THEM, ESPECIALLY:
 - THE ECONOMY
 - HEALTH CARE COSTS
 - HIGH TAXES
 - DECLINING QUALITY OF EDUCATION
- 67% are concerned about harder drugs; 54% about marijuana; 56% are more concerned today.
- 58% would write a letter; 43% give personal hours helping; 28% pay more taxes. Only 1/4 or less would be extremely likely to take any of these actions.
- There is low awareness that drug usage affects the issues that most concern them: the economy, 16% aware; health care costs, 18% aware; high taxes, 9% aware; quality of education, 23% aware. In contrast, 76% say drugs cause crime, and 54% AIDS -issues of great concern to only 4/10.

- OVERWHELMINGLY, THREE OF THE POTENTIAL CREATIVE CLAIMS AROUSE MORE CONCERN, EVEN CAUSING A WILLINGNESS TO PAY MORE TAXES AND GIVE PERSONAL TIME.
 - "Child abuse increased 226% in the past 10 years - over half of it involves parents using drugs."
 - "Two thirds of all crimes in your area involved drugs."
 - "Insurance premiums are higher because of money needed to take care of drug-exposed babies."

Now, thinking of a different subject . . .

- D1 Please rank the following four issues in terms of their harmful effects on your community. Which of the following do you believe is most harmful in terms of its effects on your community? And which do you believe is second most harmful? Which is third most harmful? And fourth most harmful? (READ AND ROTATE)

	<u>MOST HARMFUL</u>	<u>SECOND MOST HARMFUL</u>	<u>THIRD MOST HARMFUL</u>	<u>FOURTH MOST HARMFUL</u>
--	-------------------------	------------------------------------	-----------------------------------	------------------------------------

- 1 Economy
- 2 Crime
- 3 Drug Usage
- 4 Health care costs
- 5 DON'T KNOW/NO RESPONSE

- D2A How concerned are you with usage of illegal drugs like cocaine, crack and heroin in terms of their effects on you and your family? Would you say you are extremely concerned, very concerned, slightly concerned, or not at all concerned?

- 1 EXTREMELY CONCERNED
- 2 VERY CONCERNED
- 3 SLIGHTLY CONCERNED
- 4 NOT AT ALL CONCERNED
- 5 DON'T KNOW/NO RESPONSE

- D2B How concerned are you with usage of marijuana in terms of its effect on you and your family? Would you say you are extremely concerned, very concerned, slightly concerned, or not at all concerned?

- 1 EXTREMELY CONCERNED
- 2 VERY CONCERNED
- 3 SLIGHTLY CONCERNED
- 4 NOT AT ALL CONCERNED
- 5 DON'T KNOW/NO ANSWER

- D3 Overall, would you say you are more concerned, less concerned or about the same in your concern about drug usage as you were three years ago?

- 1 MORE CONCERNED NOW
- 2 LESS CONCERNED NOW
- 3 ABOUT THE SAME NOW
- 4 DON'T KNOW/NO ANSWER

- D4 How willing are you personally to help fight illegal drugs in your community? For each of the actions I mention, please tell me if you would be extremely likely, very likely, slightly likely or not at all likely to take action -- (READ AND ROTATE)

<u>EXTREMELY LIKELY</u>	<u>VERY LIKELY</u>	<u>SLIGHTLY LIKELY</u>	<u>NOT AT ALL LIKELY</u>	<u>DON'T KNOW</u>
1	2	3	4	5

To write a letter to your congressperson
To give hours helping in the community
To pay more taxes

D

- D5 I'm going to read a list of social issues that affect our country. Please tell me how much you feel it affects you and your family? For each one, please tell me, if it affects you and your family greatly, somewhat, or not at all? (READ AND ROTATE)

<u>GREATLY</u>	<u>SOMEWHAT</u>	<u>NOT AT ALL</u>	<u>DON'T KNOW</u>
1	2	3	4

Declining quality of education
Homelessness
AIDS
Health care costs
Crime on the streets
Declining productivity at work
High taxes
Being safe in your own home
The economy

- D6 Now, I'm going to read you the list of nine problems. Please indicate up to three of them which you think are most likely to be caused by illegal drug usage. (READ AND ROTATE. RECORD UP TO 3 RESPONSES)

- 1 Declining quality of education
- 2 Homelessness
- 3 AIDS
- 4 Health care costs
- 5 Crime on the streets
- 6 Declining productivity at work
- 7 High taxes
- 8 Being safe in your own home
- 9 The economy
- 10 NONE OF THESE
- 11 DON'T KNOW

- D7A I'm going to read you a few statements. I'd like you to tell me how each would influence your level of concern about the issue of illegal drugs. Would it make you more concerned, less concerned, or about as concerned as you are now? (READ AND ROTATE)

<u>MORE</u>	<u>LESS</u>	<u>ABOUT AS</u>	<u>DON'T</u>
<u>CONCERNED</u>	<u>CONCERNED</u>	<u>CONCERNED</u>	<u>KNOW</u>
1	2	3	4

Most new AIDS cases are drug related.
Hospitals in your community are being overwhelmed by drug-related emergencies.
Two-thirds of all crimes committed in your area involved drugs.
The U. S. has the highest murder rate in the world. At least half are drug related.
Taxes in the U. S. are \$100 billion higher because of drug abuse.
Your insurance premiums are higher because of money needed to take care of drug-exposed babies.
Drug use in the workplace seriously reduces the ability of the U. S. to compete internationally.
Child abuse has increased 226% in the last 10 years -- over half of it involves parents using drugs.
Last year alone, drug abuse cost the U. S. economy \$76 billion -- the equivalent of four Hurricane Andrews.

D7B Which of the following facts, if any, would make you more likely to give personal hours helping in your community? Please indicate as many as apply. (READ AND ROTATE. RECORD AS MANY AS APPLY)

- 1 Most new AIDS cases are drug related.
- 2 Hospitals in your community are being overwhelmed by drug-related emergencies.
- 3 Two-thirds of all crimes committed in your area involved drugs.
- 4 The U. S. has the highest murder rate in the world. At least half are drug related.
- 5 Taxes in the U. S. are \$100 billion higher because of drug abuse.
- 6 Your insurance premiums are higher because of money needed to take care of drug-exposed babies.
- 7 Drug use in the workplace seriously reduces the ability of the U. S. to compete internationally.
- 8 Child abuse has increased 226% in the last 10 years -- over half of it involves parents using drugs.
- 9 Last year alone, drug abuse cost the U. S. economy \$76 billion -- the equivalent of four Hurricane Andrews.
- 10 NONE OF THESE
- 11 DON'T KNOW

D7C And which of these facts would make you more willing to pay increased taxes to fight drug usage? Please indicate as many as apply. (READ AND ROTATE. RECORD AS MANY AS APPLY)

- 1 Most new AIDS cases are drug related.
- 2 Hospitals in your community are being overwhelmed by drug-related emergencies.
- 3 Two-thirds of all crimes committed in your area involved drugs.
- 4 The U. S. has the highest murder rate in the world. At least half are drug related.
- 5 Taxes in the U. S. are \$100 billion higher because of drug abuse.
- 6 Your insurance premiums are higher because of money needed to take care of drug-exposed babies.
- 7 Drug use in the workplace seriously reduces the ability of the U. S. to compete internationally.
- 8 Child abuse has increased 226% in the last 10 years -- over half of it involves parents using drugs.
- 9 Last year alone, drug abuse cost the U. S. economy \$76 billion -- the equivalent of four Hurricane Andrews.
- 10 NONE OF THESE
- 11 DON'T KNOW

D8 Now that you've heard all these facts, tell me which would influence you the most and cause you to be more concerned about drug usage, in terms of its effects on you and your family? (DO NOT READ LIST. GET RESPONDENT TO MENTION THE ONE OR TWO OF MOST CONCERN TO HIM/HER, IF HE/SHE CANNOT REMEMBER ANY, RECORD "CAN'T REMEMBER ANY")

- 1 MOST NEW AIDS CASES ARE DRUG RELATED.
- 2 HOSPITALS IN YOUR COMMUNITY ARE BEING OVERWHELMED BY DRUG-RELATED EMERGENCIES.
- 3 TWO-THIRDS OF ALL CRIMES COMMITTED IN YOUR AREA INVOLVED DRUGS.
- 4 THE U. S. HAS THE HIGHEST MURDER RATE IN THE WORLD. AT LEAST HALF ARE DRUG RELATED.
- 5 TAXES IN THE U. S. ARE \$100 BILLION HIGHER BECAUSE OF DRUG ABUSE.
- 6 YOUR INSURANCE PREMIUMS ARE HIGHER BECAUSE OF MONEY NEEDED TO TAKE CARE OF DRUG-EXPOSED BABIES.
- 7 DRUG USE IN THE WORKPLACE SERIOUSLY REDUCES THE ABILITY OF THE U. S. TO COMPETE INTERNATIONALLY.
- 8 CHILD ABUSE HAS INCREASED 226% IN THE LAST 10 YEARS -- OVER HALF OF IT INVOLVES PARENTS USING DRUGS.
- 9 LAST YEAR ALONE, DRUG ABUSE COST THE U. S. ECONOMY \$76 BILLION -- THE EQUIVALENT OF FOUR HURRICANE ANDREWS.
- 10 NONE OF THESE
- 11 DON'T KNOW
- 12 CAN'T REMEMBER ANY

D9 One last question about the health care issue. As I read a short list of health care problems, please tell me how much you think it is true that the problem is caused by illegal drugs. Would you say very true, somewhat true or not at all true? (READ AND ROTATE)

VERY	SOMEWHAT	NOT AT ALL	DON'T
TRUE	TRUE	TRUE	KNOW
1	2	3	4

Thirty-six million Americans have no health care coverage.
 Costs for health care are rapidly increasing.
 The quality of health care is declining.

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Cocaine: The First Decade

Overview

It appears that the cocaine epidemic that swept through the nation during the 1980s may now be subsiding, leaving in its wake large numbers of people with long-term dependencies.

Drug use in general, and the problems associated with it, are still at very high levels by historic standards, and the street violence surrounding drug trafficking may yet grow worse over the next several years, especially in the inner city. However, available indicators of drug use show that both initiation rates and the total number of people using drugs are declining.

The composition of the drug-using population has also begun to change. The data indicate that the sharpest reductions in drug use have occurred in suburban areas and among the educated middle class. It is likely that changing attitudes (e.g., increasing concern about the dangers of drug use and decreasing social approval) rather than enforcement efforts have influenced occasional users to quit using drugs.

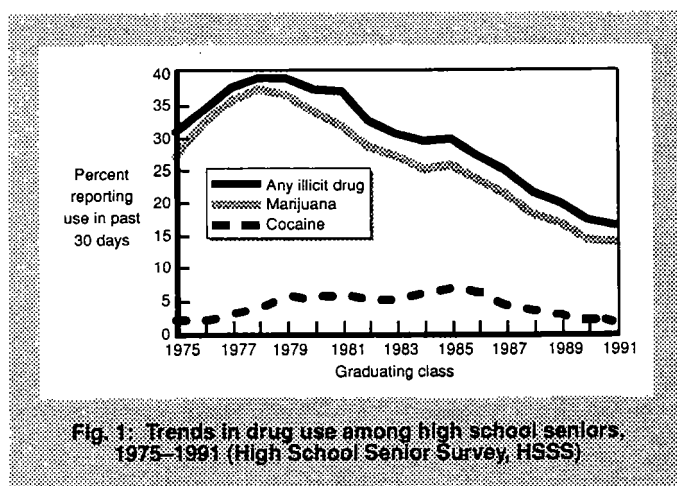
Unfortunately, over the last decade as cocaine became cheaper, more readily available, and more addictive in the smokable form of "crack," it appears that both poor and criminal segments of the population, especially in the inner cities, began to use the drug more heavily. As a result, these people now represent a larger share of the drug-using population. The data also point to an increasingly strong association between cocaine use and health problems, and cocaine use and crime. This in part may explain why, in the face of declining drug use, we may see continued or even increasing drug-related health problems and violence in the inner cities.

Below we describe some of the apparent changes in the trends and composition of the cocaine-using population over the last decade.

Drug Abuse (NIDA): the High School Senior Survey (HSSS), conducted annually by the University of Michigan; and the periodic National Household Survey on Drug Abuse (NHSDA), which reports on drug use in the general population.

The weaknesses of the surveys are well known, but they are not likely to distort general trends. For example, the surveys exclude populations known to be rich in drug users: The HSSS does not include school dropouts, and the NHSDA excludes institutional populations (such as those in prison) and the homeless. The surveys also rely on the willingness of individuals to report disapproved behavior. Since approval of drug use has declined over the last decade, it is likely that the willingness to report such use has also declined. Thus, one cannot use the data to estimate the number of heavy drug users, and the trends may be less sharp than they appear in the surveys. However, the trendlines certainly point in the correct direction.

Figure 1 shows the percentage of successive high school classes reporting use of marijuana, cocaine, or any illicit drug within the last 30 days.



After a steep rise in the late 1970s, drug use in general (dominated by marijuana use) declined sharply. For cocaine,

National Surveys of Drug Use

The most widely reported measures of drug use are provided by two national surveys funded by the National Institute on

TREATING --- DRUG --- PROBLEMS

VOLUME 1

A Study of the Evolution, Effectiveness, and Financing
of Public and Private Drug Treatment Systems

Committee for the Substance Abuse Coverage Study
Division of Health Care Services

INSTITUTE OF MEDICINE

Dean R. Gerstein and Henrick J. Harwood, editors

NATIONAL ACADEMY PRESS
Washington, D.C. 1990

NOTICE: The project that is the subject of this report was approved by the Governing Board of the National Research Council, whose members are drawn from the councils of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine. The members of the committee responsible for the report were chosen for their competencies and with regard for the appropriate balance.

The report has been reviewed by a group other than the authors according to procedures approved by a Report Review Committee consisting of members of the National Academy of Sciences, the National Academy of Engineering, and the Institute of Medicine.

The Institute of Medicine was chartered in 1970 by the National Academy of Sciences to enlist distinguished members of the appropriate professions in the examination of policy matters pertaining to the health of the public. In this, the Institute acts under both the Academy's 1863 congressional charter responsibility to be an adviser to the federal government and its own initiative in identifying issues of medical care, research, and education. Dr. Samuel O. Thier is president of the Institute of Medicine.

This study was supported by the National Institute on Drug Abuse, U.S. Department of Health and Human Services, under Contract No. 283-88-0009 (SA).

This Summary is available in limited quantities from the Institute of Medicine, Committee for the Substance Abuse Coverage Study, Division of Health Care Services, 2101 Constitution Avenue, N.W., Washington, D.C. 20418.

The complete volume of *Treating Drug Problems, Volume 1*, from which this Summary is extracted, is available for sale from the National Academy Press, 2101 Constitution Avenue, N.W. Washington, D.C. 20418.

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Printed in the United States of America

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Preface

The committee members and staff appointed in 1988 to conduct the Institute of Medicine's Substance Abuse Coverage Study were given a three-part task:

- investigate the extent of private and public funding of treatment for the chronic, relapsing disorders of drug abuse and dependence;
- evaluate the adequacy of funding patterns to meet the national need for rehabilitation of individuals with these disorders; and
- make recommendations to responsible parties, such as the U.S. Congress, which originally requested the study, regarding what they should do to meet the needs identified by the investigation.

Based on its legislative title, the Substance Abuse Coverage Study seemed destined to focus on the design of health insurance benefits, which had entered the picture of drug treatment financing in a major way in the 1980s. But after carefully reviewing the charge, the character and organization of the treatment system, and the concerns that third-party payers on both the public and private sides persistently voiced about treatment programs and clients, the committee adopted a more comprehensive definition of its task. That definition is suggested by the title and descriptor chosen for this report: *Treating Drug Problems; A study of the evolution, effectiveness, and financing of public and private drug treatment systems*. The various chapters of the report discuss the history of ideas governing drug policy, the nature and extent of the need for treatment, the goals and effectiveness of treatment, the need for research on treatment methods and

services, the costs and organization of the two-tiered national treatment system, the scope and organizing principles of public and private coverage, and recommendations tailored to each kind of coverage. Seven papers commissioned to inform and accompany the report are in a companion volume.

Notwithstanding this broad range of issues, there are still some very important constraints and limits on what the committee has done and how this report should be understood. First, the report is about drug treatment and not about drug policy in general. Although the committee is careful to note where treatment fits within the context of prevention and law enforcement approaches to drug problems, it did not study these other approaches comprehensively. Consequently, its recommendations concerning additional resources for treatment do not derive from a systematic comparison of allocations for treatment versus allocations of comparable resources to law enforcement or prevention, but rather from a consideration of treatment needs alone. Comparison of the relative marginal benefits of these different approaches ultimately must be made, based on appropriate studies (which the report calls for), but it was not part of the committee's charge to perform this more encompassing task.

A second limitation is that the committee's recommendations are confined to and reflect drug treatment in the United States. There is relevant scientific literature from other countries pertaining to treatment modalities in the United States, and the committee has explored these important sources. An adequate investigation of treatment systems in other countries, however, would require the same level of historical analysis, expert workshops, intensive site visiting in various localities, and other procedures that the committee employed in the United States. This type of careful international comparative study was beyond the committee's scope and resources.

A third limitation is that the report does not delve into the treatment of alcohol problems. The committee recognizes that alcohol and drug problems overlap in a substantial proportion of the cases now being seen, a fact manifested by the range of problems most programs are willing to treat and the variety of services they provide. The limitation in scope here is largely due to a parallel study of alcohol treatment in the Institute of Medicine, chaired by Robert D. Sparks and directed by Frederick B. Glaser and Herman I. Diefenhaus; their committee's report, *Broadening the Base of Treatment for Alcohol Problems* (1990), is readily available from the National Academy Press.

The alcohol study derived from the same legislation that initiated this study; however, the specific requests proceeded through separate federal channels and followed different timetables. Readers of both reports will

easily see that problems associated with the two kinds of substances (legal alcohol and illegal drugs) and their partially divergent treatment systems justify separate investigations, even though the two have much in common. Both committees tried to maintain clear perspectives on each others' work while the studies were in progress. Mark V. Pauly served as a member of both committees, and there was other extensive liaison, including joint staff work. Now that both studies are completed, we are hopeful that a way will be found to draw the results even closer together, perhaps in a future report that focuses on the overlap of alcohol and drug problems.

A fourth limitation is that the committee did not devote major energies to examining the relationship between drug treatment and AIDS (the acquired immune deficiency syndrome). Another committee of the National Academy of Sciences has recently completed two comprehensive studies of AIDS in its behavioral and social contexts, and their reports include a consideration of drug problems from the perspective of AIDS research and policy. We therefore refer the reader to *AIDS: Sexual Behavior and Intravenous Drug Use* (1989) and *AIDS: The Second Decade* (1990), which are both available from the National Academy Press. The latter report is particularly notable for its thorough analysis of women, adolescents, and AIDS.

A final limitation on the scope of the committee's work was imposed by the scarcity of research data since the onset of the crack-cocaine era concerning treatment for drug dependence in women who are pregnant or mothers of young children. Of particular importance here is the question of how such treatment affects not only these women but also the quality of prenatal development, parental care, and environmental conditions in which their children are raised; and how, in turn, the children's health, behavior, and opportunities in life are affected when treatment intervenes. Another disheartening problem is the fragmentary knowledge base underpinning the treatment of drug abuse and dependence among adolescents. The absence of systematic research is perpetuated by excessive barriers to conducting treatment follow-up studies among individuals under 18 years of age. These obstacles arise because of inappropriate and unrealistic requirements at the federal level and in many states to obtain written parental consent for minors to participate (generally, through confidential interviews) in treatment services research.

Although the committee was limited in these respects, we believe the report is fully responsive to its original charge, which expresses a legitimate and urgent national need. Perhaps in part because of the urgency of this need, the committee received willing assistance from many sources. Scores of individuals provided valuable information and trenchant ideas in extensive correspondence with the committee and in the formative workshops

it organized during 1988 in Washington, D.C., and Irvine, California. The contributions of M. Douglas Anglin, who took part in both workshops and assisted the committee in other respects, deserve special mention.

The committee is also indebted to programs and agencies that hosted committee site visits in New York, Miami/Dade County, Pittsburgh, St. Louis, the San Francisco Bay area, Los Angeles and Orange Counties, and Portland and Salem, Oregon. Closer to home, James M. Kaple and Albert M. Woodward, the study's project officers at the National Institute on Drug Abuse, were unfailingly helpful, constructive, and circumspect in facilitating the progress of the study. Charles R. Schuster, Salvatore di Menza, Edgar Adams, and other past and present staff of the National Institute on Drug Abuse were also instrumental in the acquisition of important data.

The Research Triangle Institute, which performed the Treatment Outcome Prospective Study and the 1988 National Household Survey on Drug Abuse, among other signal contributions to the field, provided invaluable assistance in developing this report, and its staff, particularly J. Valley Rachal and Lynn E. Guess, have earned the committee's thanks. Two former members of the Lewin/ICF staff, Nina E. Teicholz and Karen F. Monborne, directly assisted the chair, as did Lewin/ICF colleagues Jack Needleman and Robert J. Rubin.

The authors of commissioned papers made major contributions to the committee's thinking and responded graciously to its many requests for more, less, different, or clarifying information. The committee does not necessarily concur with every conclusion drawn by these authors; nevertheless, we learned a great deal from them and are pleased to publish their papers in a second volume of the report.

The committee also benefited from a perceptive and unusually extensive set of review comments solicited by the Institute of Medicine. These reviews stimulated many specific improvements in the draft report, and their contributors represent an admirable tradition of unsung, voluntary professional service to the public interest. We are grateful to be among its beneficiaries.

Speaking for ourselves and for the members of the committee, we cannot praise too highly the quality and dedication of the Institute of Medicine staff. Linda B. Kearney, administrative secretary, and Elaine McGarraugh, research associate, performed coolly and indefatigably in disposing of an unending succession of logistical and technical requirements. The ingenuity, eye for detail, and good judgment of these veterans kept the study on track in the face of numerous complications. Technical editor Leah Mazade carefully graced and polished every line of text in preparing the report for publication. Henrick J. Harwood, associate study director and co-editor of the report, left late in the study to serve in the White

House Office of National Drug Control Policy—but not before organizing and leading several intensely valuable site visits, completing state-of-the-art literature reviews and data analyses, and generally earning the very highest regard of the committee.

Finally, we are fortunate to have a committee whose members are thoroughly distinguished in their professional achievements, demanding in their intellectual standards, congenial and unassuming in person, and thoughtful, persistent, and generous in their abiding commitment to the public good. On behalf of this splendid group, we are pleased to submit the report of the Substance Abuse Coverage Study.

Lawrence S. Lewin, *Chair*
Dean R. Gerstein, *Study Director*

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Summary

QUESTIONS THE REPORT ANSWERS AND THOSE IT LEAVES UNRESOLVED (CHAPTER 1)

The Anti-Drug Abuse Act of 1986 called for the Institute of Medicine (IOM) to conduct a study of the extent and adequacy of coverage by public programs, private insurance, and other sources of payment for the treatment and rehabilitation of drug abusers. The act also requested IOM to recommend the means by which the needs identified in the study could be addressed. In responding to this charge, the committee established to conduct the study has covered the following major questions in its report:

- The role of treatment—What is the role of treatment in the ideas that govern and shape drug policy? (Chapter 2)
- The need for treatment—In light of the patterns of drug consumption and consequent problems, what is the estimated extent of the need for drug treatment? (Chapter 3)
- The goals of treatment—What should drug treatment seek to accomplish in the context of treatment seekers' motives and medical-criminal drug policies? (Chapter 4)
- The effects of treatment—What are the available modalities of drug treatment? What are their expected and actual clinical accomplishments? Why do the results of treatment programs vary? What are their respective benefits and costs? (Chapter 5)

- The organization of treatment—How, in general, is the supply of treatment organized and financed? (Chapter 6)
- Public coverage—What is the rationale, the priorities, and the optimal level of public coverage of drug treatment? How can public coverage be best arranged and managed? (Chapter 7)
- Private coverage—What are the responsibilities of private coverage for drug treatment in terms of eligibility, benefit and service design, costs, and care management? (Chapter 8)

In answering these questions, and more detailed ones within each chapter, the committee relies on the preponderance of rigorous evidence (where enough evidence is available to be weighed) and judiciously uses expert judgment, including specification of the new knowledge needed to strengthen this judgment, where logic and experience point strongly but rigorous evidence is scant. In view of the severity and complexity of the drug problem and the public's determination to respond, the committee tries to recommend policy decisions regarding drug treatment that are most consistent with the current state of knowledge.

There are three important questions relevant to the drug problem that the committee returned to more than once but could not answer in this study. In one case, neither evidence nor experience were sufficient to counsel a specific judgment; in the other two cases, the questions—and the expertise and evidence needed to answer them—were outside the committee's charge and resources. The most urgent unanswered questions in this regard are the following:

- With sufficient resources and related services, would different drug treatment modalities than the ones now available be more effective for adolescents and mothers of younger children?
- How efficient and effective is the current distribution of criminal justice responses to the drug problem?
- How can society intervene more effectively in socioeconomic environments to prevent drug initiation and discourage rather than facilitate relapse?

IDEAS GOVERNING DRUG TREATMENT POLICY (CHAPTER 2)

The national response to drugs has always been governed by simple, powerful ideas about the nature of the drug problem and how to control it (see Figure 2-1).¹

¹ The tables and figures referred to in this summary appear at the end of this summary.

- From Revolutionary times to the Reconstruction era, the drug problem was a minor concern, left at first to the realm of private behavior, and later managed in a loosely enforced regulatory framework; this approach derived from *libertarian* ideas.
- A *medical* conception of opiate and other addictions was formulated in the late 1800s, explaining clinical observations among drug-consuming older women and other groups. Various treatment approaches were devised, including detoxification and, where total abstinence was deemed unachievable, medically supervised maintenance.
- From 1910 to the 1920s, medical approaches were almost wholly swept aside by the rise of a *criminal* conception of the problem focusing on underworld characters who used heroin and other drugs. That conception held sway, with little effective challenge, for 40 years.

In the 1960s and 1970s, medical ideas reappeared in more sophisticated forms, taking much more explicit account of the various criminal contexts of drug use. During 1965–1975, a national medical-criminal treatment policy was made viable chiefly by the emergence of promising new treatment modalities: methadone maintenance and therapeutic communities for heroin and outpatient nonmethadone programs oriented toward nonopiate drugs. In the same period the federal government sponsored the buildup of a substantial public tier of community-based drug treatment programs. This system of programs was the leading edge of national drug policy, complementing criminal justice efforts in responding to drug-related crime.

Other factors that contributed to the reemergence of medical ideas were a shift in attitudes during the “Great Society” period that brought a greater assumption of collective responsibility for the casualties of socioeconomic forces. This shift was followed by the Nixon administration's energetic search for responses to large-scale unrest, particularly the social problems of increasing crime and heroin use.

From 1975 to 1986, federal dollar support for drug treatment eroded, although states moved to replace this support to some degree. The growth of the community-based public tier of treatment stopped while the criminal justice system as a whole entered a period of unprecedented sustained increase. The momentum of medical ideas shifted to a rapidly expanding private tier. In the 1980s, chemical dependency programs, largely comprising hospital-based alcohol treatment providers, began treating growing numbers of heavy alcohol and drug consumers (mostly of cocaine and marijuana) who could afford to pay with private insurance coverage or personal assets.

The public tier of drug treatment has been the neglected front in the drug wars of the 1980s. In formulating the federal anti-drug abuse

legislation of 1986 and 1988, the great bulk of the debate and the new sums actually spent were directed toward enforcement against traffickers and prevention among nonusers. Outside of concern with isolating the growing acquired immune deficiency syndrome (AIDS) epidemic, public treatment was all but ignored.

With the rise in alarm about crack-affected children and neighborhoods, however, the pendulum of public policy is once again moving. Modalities of treatment attuned to medical-criminal ideas again seem increasingly attractive. It is becoming widely appreciated that the drug problem does not lend itself to simple characterization or solution, that a combination of ideas and policies is the most fruitful way to respond to it, and that treatment programs can and should reflect this principle of combination.

DRUG PROBLEMS AND THE NEED FOR DRUG TREATMENT (CHAPTER 3)

Patterns of Drug Consumption

The nation's drug problem is a complicated evolving composite of millions of individual patterns of drug-consuming behavior and consequences that may differ according to time and place and that change as the marketing, technology, and reputations of drugs evolve. Crack-cocaine, heroin, marijuana, amphetamines, and all other illicit drugs are consumed in patterns that range from experimental use to dependence. To determine the extent of need for treatment in the population, drug consumers must be categorized based on the frequency and amount of their drug consumption and the severity of associated problems and consequences.

A conceptual paradigm of individual drug consumption, consequences, and societal responses is presented in Figure 3-1. Although individual patterns are not always so orderly, patterns or types of drug taking in this simplified scheme occur in progressive stages of use, abuse, and dependence, each more hazardous and intrusive than the one before. Each stage entails the risk of further progression, but progression is not inevitable. A minority of experimental users reach the stage of abuse, fewer yet the stage of dependence.

The bulk of initial, experimental drug use occurs during the teenage years. Very few children aged 10 or younger have begun to use drugs. Nearly as few people begin using drugs—or even any particular type of drug, unless it was never previously available—after reaching 25 years of age.

For many years, the introduction to drugs in the great majority of cases that go on to further stages has proceeded in a general cumulative

sequence: alcohol and tobacco, to marijuana, to other inhalable or orally ingestible substances, to hypodermic injection of opiates or powerful stimulants (cocaine, amphetamines). This sequence is almost always initiated between the ages of 12 and 15, and the injection phase, when reached, generally begins between the ages of 17 and 20. The sequencing phenomenon is thought to reflect drug availability and the degree of opprobrium attached to respective types of drugs. However, as the marketing of cocaine continues to expand and that of marijuana diminishes, the sequence of introduction to these drugs may become less uniform.

The mixture of drug effects that consumers seek or are satisfied with tends to change subtly over time, moving *typically* from just "getting high" or being sociable in the early stage of use to the achievement of temporary relief from the persistent desire or learned need for a drug (which persists even after short-term withdrawal is completed) in the stage of dependence. Drug-seeking behavior is highly volitional during initiation and continuation of use, although profoundly influenced by the environment. But the initial voluntary component of drug-seeking behavior is typically compromised by the psychological, physiological, and social aspects of the dependence process, which dramatically increases the probability that treatment will be needed to extinguish drug-seeking behavior.

Dependence

Dependence (not only on illicit substances but also on such licit agents as alcohol and tobacco) is the most extreme pattern of drug consumption. It is the persistent seeking and consumption of one or more types of drugs in excessive amounts, despite such high costs as the accumulation of harm to health and functioning, viewed broadly by social standards and judged specifically according to clinical diagnostic criteria. The most severely drug-impaired individuals are dependent on one drug and make heavy use of one or more others (including alcohol), perhaps to the point of multiple dependencies. Many such individuals also have serious mental illnesses and medical complications.

There is a range of individual vulnerability to drug dependence when environmental conditions are held constant. But social environments are not constant, and variation in environmental conditions correlates strongly with ecological variation in drug dependence rates.

Recovery and Relapse

Drug dependence is characteristically a chronic, relapsing disorder. Drug abuse often assumes this character as well, but not as often. Dependent drug-seeking behavior and the strong desire or craving for drugs

that is its subjective aspect are difficult to lose completely, or extinguish, once they have been established. It is easier to complete detoxification (the short-term transition from being acutely dependent to being free of dependence symptoms) than it is to sustain that asymptomatic state beyond the short term—that is, to avoid relapse. Nevertheless, individuals can successfully put a complete stop to an established pattern of chronic dependent behavior. Not only can they safely stop using drugs in the short term, with or without formal assistance, but they can also avoid the recurrence of drug seeking that ends in relapse. This extinguishing of individual drug-seeking behavior is the most fundamental element in the recovery process.

Studies of the life history of dependent individuals indicate that there is usually a complicated path to recovery. Individuals with severe problems (including deficits in their social environment) that precede their drug dependence or abuse—for example, family disintegration, lack of legitimate job skills or opportunities, illiteracy, or psychiatric disorders—will probably continue to have these problems unless specific services are available to deal with them. These individuals are also at intrinsically high risk of relapse.

Many individuals are too damaged by the consequences of drug dependence or other factors, too bereft of alternative behavioral skills and supports, to complete (sometimes even to begin) the recovery process without lengthy or continuing help in coping with psychological, social, economic, or pharmacological problems. For these individuals, recovery is not only a matter of extinguishing drug-seeking behavior but also of addressing directly a range of functional impairments that usually preceded drug seeking and were worsened by it. Recovering functionality in society to whatever degree is possible is a more comprehensive definition of recovery.

Treatment of drug problems, therefore, often addresses itself not only to drug consumption as such but also to the chronic personal impairments and social and economic deficits that often characterize those who enter treatment. Individuals without accompanying problems, who have long-term assets such as a stable job and supportive family, are not likely to need specific adjunctive services and have been found to be intrinsically less likely to relapse.

It is characteristic of recovery processes from any type of drug dependence that, although many people do recover, recovery is seldom achieved, or even begun, before the individual recognizes that he or she has suffered and caused significant personal and social harm—an understanding that often requires overcoming a strong tendency to denial. The more severe and prolonged the periods of dependence or severe abuse, the greater the need for help in extinguishing drug-consuming behavior.

Autonomous cessation, or self-recovery, although not uncommon, is not universal. Many, probably the majority, of those who are dependent or

severe abusers relapse after their first (and later) attempts at self-recovery. Most people who enter drug treatment have tried self-recovery previously but did not succeed. Most people who recover after treatment do so after more than one treatment episode.

Determining the Need for Treatment

Drug treatment is (or in most cases should be) an intensive, personalized intervention. Treatment is not an appropriate or efficient response to the most common patterns of drug consumption, namely, experimental and occasional use, and may not be needed in cases of abuse in which impairment is slight or the pattern of abuse is new. Other interventions, such as brief preventive counseling, educational services, and disciplinary sanctions, may be legitimate, useful, or effective in promoting cessation and abstinence in these instances.

Formal diagnostic criteria for determining the appropriateness of treatment have evolved over the years and now encompass a constellation of drug-related problems rather than focusing exclusively on classical signs such as tolerance and withdrawal symptoms. Practice in diagnosis is highly variable; nevertheless, the majority of individuals entering drug treatment programs are dependent or severe abusers by any reasonably discriminating criteria.

In the committee's judgment, drug treatment is justified and appropriate for an individual if there are clinically significant signs of dependence or chronic abuse. Assessment of individual problem severity and the degree of help needed for recovery is thus exceedingly important. These factors are usually but not always taken into account in matching individual treatment seekers with appropriate modalities and in "fine-tuning" treatment by choosing among specific therapeutic components.

Estimating the Aggregate Need for Treatment

An estimated 5.5 million Americans clearly or probably need treatment at this time, which is somewhat more than 2 percent of the total population over 12 years of age. About one-fifth of the estimated population needing treatment—and two-fifths of those who clearly need it—are under the supervision of the criminal justice system as parolees, probationers, or inmates (see Table 3-4).

In the household population not under criminal justice supervision, those clearly or probably needing drug treatment are two-thirds male and heavily concentrated among adults aged 18 to 34. Youths under the age of 18 make up about 9 percent (about 400,000 persons) of the total household group needing treatment, and adults over 34 account for about 16 percent

(roughly, 725,000 persons). Most of the household adults—75 percent—hold some type of job at least part of the time, 10 percent are unemployed (twice the national average), and 15 percent are in school, retired, disabled, or carrying household responsibilities.

Current survey and surveillance data indicate that, although lighter drug consumption—experimental and occasional use—is becoming less prevalent, the problem of severe drug abuse and dependence is growing larger, more difficult, and more costly. The difficulties are due both to the expanded menu of drugs that are now widely consumed—most prominently, marijuana and cocaine, barbiturates and other depressants, amphetamines and PCP in some parts of the country, and heroin—and to the complications induced by AIDS, chronic unemployment, and extended family disintegration in the inner cities. Because of the complex, protean, time-extended character of the drug problem, aggregate treatment needs are not necessarily closely linked to the current overall societal prevalence of drug involvement. Total social costs are especially difficult to estimate, being subject to many uncertainties of measurement. The costs of drug problems in the form of treatment for AIDS, prevention programs, and drug treatment programs are not insubstantial, but they are clearly much smaller than the costs incurred as a result of drug-related crime.

THE GOALS OF DRUG TREATMENT (CHAPTER 4)

To know whether treatment is appropriate and whether the money it costs is well spent, the goals of treatment need to be made explicit. Lifetime abstinence from all illicit drug consumption is the central goal of drug treatment. However, in light of the chronic, complex nature of drug problems, the more pragmatic day-to-day objective is to reduce illicit drug consumption by as large a fraction as possible relative to the consumption one might expect in the absence of treatment. Reduction of illicit drug consumption produces socially and personally valuable results and may serve as a critical intermediate step to lifetime abstinence. A useful shorthand for the pragmatic goal of drug treatment is that it tries to initiate, accelerate, and help sustain the recovery process.

The goals of the treatment delivery system are not confined to reducing the drug consumption of specific individuals. These goals, assigned overtly or implicitly by public policy or private payers, are multiple and may include the following:

- reduce the overall demand for illicit drugs;
- reduce street crime;
- change users' personal values;
- develop educational or vocational capabilities;

- restore or increase employment or productivity;
- improve the user's overall health, psychological functioning, and family life; and
- reduce fetal exposure to drug dependence.

Success in achieving one set of these goals may be related to but is not equal to success in achieving the others. Generally, the more severely the user is impaired with respect to these various goals when he or she enters treatment, the more services will be needed for drug treatment to be effective.

Motivations for Treatment

The nature and success of drug treatment is complicated by the typical reluctance of dependent or abusing individuals to seek treatment or stay in it. The main reason for this reluctance is that drug consumers like drugs; drugs "work" for them and provide the effects they seek, which vary from pleasure to relief. Drug dependence or abuse, in and of itself, is often not what sends people to treatment, at least, not initially. Individuals often enter treatment as a strategy of partial rather than full recovery—that is, to help manage serious problems with the law, their family, their mental or physical health, other drug consumers or dealers, a threat involving criminal justice supervision, or an abrupt loss of customary income. In other words, they may enter treatment to establish better control over their drug behavior or its consequences but not necessarily to extinguish the behavior entirely. Another factor that contributes to some individuals' reluctance to enter or stay in treatment is that drug treatment is often demanding, imposing schedules and controls and requiring extensive work on the part of the client to overcome social deficits and heal psychological impairments.

Overall, because of the inherent disinclination toward drug treatment, some form of perceived threat or pressure is nearly always present as a triggering element when treatment is sought. The pressure can derive from an internal or an external problem, which is usually but not necessarily a direct consequence of drugs. The most common internal pressure is the cumulative and demoralizing realization that the increasing trouble that comes with sustained drug abuse or dependence leads to a dead end.

Clients formulate exterior motives for entering treatment as "to get [someone] off my case." External pushes are usually allied to some degree of positive pull or motivation to change. The positive motives are often not strong enough in themselves to initiate or sustain recovery, but reinforcement through external pushes into treatment and therapeutic pressure within treatment can be effective in doing so. The specific mixture and source of motives vary with the circumstances. For someone with a

high-paying, prestigious job, the direct threat of losing that livelihood and position can carry a great deal of weight. For someone who is unemployed and unskilled, no threat short of a long prison sentence may carry a comparable degree of weight or pressure. The civil liberties implications of this inequity are troubling, but such is currently the state of affairs.

Treatment and Criminal Justice

The treatment system and crime control systems in this country share important goals—especially, the attainment of less criminal and drug-involved lives by their clientele. On a given day, out of 1 million persons in confinement, there are probably 40,000 individuals in jail or prison custody who are also in drug treatment programs. More broadly, many courts and correctional systems use commitment or referral to community-based treatment programs, usually ones involving close supervision, as alternatives or adjuncts to probation or parole status. Half or more of the admissions to typical community-based residential and outpatient drug treatment programs (except perhaps for methadone) are on probation or parole when they enter treatment. These statistics are a direct manifestation of the criminal-medical policy idea regarding the drug problem.

The criminal justice system is already the largest single source of external pressure on individuals leading them to enter drug treatment. In most cases, the court (or another criminal justice agency) has simply ordered the individual to stay free of drugs and crime or else be remanded to custody. In this instance the individual chooses to seek treatment under the assumption that avoiding drug use (or at least avoiding abuse or dependence, which are far more troublesome and difficult to conceal) will be facilitated by treatment. In more direct cases the court or other agency offers the client a choice, generally between a term in prison and a period of probation or parole with treatment.

Criminal justice referral to treatment occurs for several reasons, including relief of court and prison overcrowding. Treatment takes responsibility for a case somewhat out of the criminal justice system, reduces the high cost of continuing incarceration, and assures a degree of supervision beyond what probation or parole offices may be able to afford. When referral occurs to relieve overcrowding, however, the stipulation "go to treatment and comply with the program or risk being returned to custody" loses its credibility. The more overcrowded and strained the criminal justice system, the less pressure it can muster to help push any particular individual into seeking and complying with treatment.

There is frequent favorable reference today to "mandatory," "compul-

sory," or "required" treatment. Contrary to earlier fears among clinicians, criminal justice pressure does not necessarily vitiate treatment effectiveness and probably improves retention. Yet the most important reason to consider these or related schemes to compel more of the criminal justice population to seek treatment is not that coercion may improve the results of treatment but that treatment may improve the rather dismal record of plain coercion—particularly imprisonment—in reducing the level of intensively criminal behavior that ensues when the coercive grip is relaxed.

EFFECTIVENESS OF TREATMENT (CHAPTER 5)

In the context of a medical-criminal policy, the practical objective of treatment at present is primarily to reduce illicit drug consumption and other criminal activity, secondarily to increase success in conventional activities such as employment and child rearing, and to improve health status, including, most recently, reducing AIDS risk behavior among clients. The standard for success is whether behavior during and after treatment is appreciably better than what would probably occur in the absence of treatment.

Does drug treatment achieve these goals? It varies; for a more discriminating answer, it is necessary to pose a more sophisticated set of questions.

- *What are the basic concepts or modalities of treatment?* That is, what are the underlying designs or theories of treatment, what specific types of drug problems or population groups are being addressed by each design, and what are the best results that have been obtained under ideal conditions?

- *How well does each modality work in practice? If a modality works less well than might be expected, what are the reasons for this variance?* For example, is the implementation or replication of the modality flawed or incomplete? Are the wrong kinds of clients being treated? Are there unexpected side effects? Does the environment neutralize the effectiveness of the treatment?

- *Do the benefits of treatment justify the costs?* In other words, is treatment a good investment?

- *In addition to the above questions about treatment as it exists: How might further research help to improve treatment?*

All of these questions must be asked, but they cannot all be answered

at present. There are four major modalities of drug treatment for which answers of varying confidence can be supplied: methadone maintenance clinics, residential therapeutic communities, outpatient nonmethadone treatment, and chemical dependency units. The most extensive and scientifically best-developed evidence concerns methadone maintenance. A lower although still suggestive level of evidence is available for therapeutic communities and outpatient nonmethadone programs. An even lower level of evidence is available for drug treatment in the chemical dependency modality. Except for a description of the model, there are virtually no data to answer any of the critical questions for the quasi-treatment modality of mutual self-help groups, such as Narcotics Anonymous.

The most extensive usable results of research on the effectiveness of drug treatment are from several planned experiments and natural or quasi-experiments and from prospective longitudinal studies involving thousands of clients. There have been two large-scale, multisite, federally sponsored studies: the Drug Abuse Reporting Program (DARP), a 12-year follow-up of a 1969-1971 national admission sample cohort, and the Treatment Outcome Prospective Study (TOPS), which involved a 10,000-person national sample of 1979-1981 admissions to 41 drug treatment programs in 10 cities, followed for up to 5 years. DATOS (the Drug Abuse Treatment Outcome Study), a third large-scale national prospective study, is scheduled to begin in 1990; important related studies are under way.

Drug users and treatment programs do a substantial amount of selection according to client characteristics and modality. The modalities were designed for different types and severities of problems, and prospective clients often have very set ideas about what type of treatment they want. As a result, the profiles of clients admitted to the major modalities are quite different, and one cannot compare the performance or results of each modality with the others as if they were all simply interchangeable.

Methadone Maintenance

Methadone maintenance is a treatment for extended dependence on opiate drugs (usually heroin). A sufficient daily oral dose of methadone hydrochloride, which is a relatively long-acting narcotic analgesic, yields a very stable metabolic level of the drug. Once a newly admitted client has reached a stable, comfortable, noneuphoric state, without the psychophysiological cues that precipitate opiate craving, he or she is amenable to counseling, environmental changes, and other social services that can help shift his or her orientation and lifestyle away from drug seeking and related crime toward more socially acceptable behaviors.

Methadone programs are nearly always ambulatory, with daily visits to

swallow the methadone dose under observation in the clinic, except for traditional Sunday take-home doses. After several months in the program with a "clean" drug testing record and good compliance with other program requirements, one or more daily doses may be regularly taken home between less-than-daily visits; however, this convenience is a revocable privilege. Some methadone clients voluntarily reduce their doses to abstinence and conclude treatment after some time, whereas others remain on methadone indefinitely, particularly if earlier attempts to leave methadone have ended in relapse.

Methadone maintenance has been the most rigorously studied modality and has yielded the most positive results for those who seek it. Yet it is also the most controversial treatment, largely based on the judgmental grounds that methadone clients have "merely" switched their dependence to a legal narcotic and that many clients continue to use heroin and other drugs intermittently and to commit crimes, including the sale of their take-home methadone.

In the committee's judgment, these controversies and reservations are neither trivial nor in themselves compelling. Methadone is an opiate drug, but consumption of a stable, clinically appropriate oral methadone dose is not behaviorally or subjectively intoxicating and does not impair functioning in clinically detectable ways. Toxic side effects during long-term treatment are extremely rare, and the general health of methadone clients improves markedly compared with their status when using heroin. Prior to admission, the great majority of methadone clients had been consuming high levels of illicit drugs and committing other crimes (including drug selling) on a daily basis. Some programs have very good and others very poor client compliance with rules against illicit drug use and criminal activity.

The issues are to what extent undesirable behaviors are reduced and positive behaviors increased as a result of methadone maintenance, in comparison to no treatment or to alternative measures, and whether poorly performing programs can be improved. Regarding behavior and treatment, the extensive evaluation literature on methadone maintenance yields firm conclusions as follows:

- There is strong evidence from clinical trials and similar study designs that opiate-dependent individuals have better outcomes on average in terms of illicit drug consumption and other criminal behavior when maintained on methadone than when not treated at all, when simply detoxified and released, or when methadone is tapered down and terminated as a result of client request, program expulsion, or program closure.
- Methadone clinics have significantly higher retention rates for opiate-dependent populations than do other treatment modalities for similar clients.

- Although methadone dosages need to be clinically monitored and individually optimized, clients have better outcomes when stabilized on higher rather than lower doses within the typical ranges currently prescribed (30 to 100 milligrams per day).

- Following discharge from methadone treatment, clients who stayed in treatment longer have better outcomes than clients with shorter treatment courses.

It is important to note that most of these results date from the 1970s to the early 1980s. Since then, the expanding cocaine market has created additional strains on many methadone programs. Methadone has no direct pharmacological bearing on the metabolism of cocaine (as it does on that of opiates); in addition, most methadone programs' counseling and other clinical resources have been substantially eroded or limited as a result of fiscal constraints. Moreover, the high seroprevalence of human immunodeficiency virus (HIV), which is generally acquired long before program admission, and the prevalence of AIDS symptoms and deaths create a heavy medical and psychological burden on methadone programs (and others, such as therapeutic communities, which serve the most severely impaired drug-using groups) in cities in which the AIDS epidemic is far advanced.

Therapeutic Communities

Therapeutic communities (TCs) are residential programs with expected stays generally of 9 to 12 months, phasing into independent residence with continuing contact for a variable period. TC programs are highly structured blends of resocialization, milieu therapy, behavioral modification practices, progression through a hierarchy of occupational training and responsibility within the TC, community reentry, and a variety of social services. TCs originally used very rigid program models and relied extensively on recovering "graduates" as program staff. They have become more flexible in program design and more multidisciplinary in staffing over time while retaining their core features, including an absolute prohibition on any drug use or violent behavior by clients during treatment.

Therapeutic community clients are more diverse in their drug use patterns than methadone clients because the modality is not specific to any particular class of drugs. From the 1960s to the early 1980s, a majority of TC clients were primarily dependent on heroin. In the later 1980s, cocaine dependence began to predominate in many programs. Therapeutic communities are designed for individuals with major impairments and social deficits, including histories of serious criminal behavior.

The primary conclusions on therapeutic communities are as follows:

- TC clients demonstrate better behavior (drug use, criminal activity, social productivity) during treatment and after discharge than before admission.

- The minimum retention necessary to yield posttreatment improvement in long-term users seems to be at least 3 months, with further improvement continuing to be evident for full-time treatment of up to 12 to 18 months.

- TC clients demonstrate better outcomes at follow-up than individuals who contacted but did not enter the same treatment programs.

- Graduates of TCs have better outcomes at follow-up than dropouts from the same programs.

- The length of stay in a TC is the strongest predictor of outcomes at follow-up.

- Attrition from TCs is typically high—above the rates for methadone maintenance but below the rates for outpatient nonmethadone treatment.

Outpatient Nonmethadone Programs

Outpatient nonmethadone programs display a great deal of heterogeneity in their treatment processes, philosophies, and staffing. The clients are generally not opiate dependent but otherwise vary across all types of drugs. They also tend to have less serious criminal histories than methadone or TC clients and to include more nondependent individuals. Outpatient nonmethadone programs generally provide one or two visits per week for individual or group psychotherapy/counseling, with an expected course averaging about six months.

Despite the heterogeneity of programs and their clients, the limited number of outcome evaluations of outpatient nonmethadone programs have generated conclusions qualitatively similar to those from studies of TCs:

- Outpatient nonmethadone clients during and following treatment show better performance than before treatment.

- Those clients actually admitted to programs have better outcomes than clients contacting but not entering programs (and clients only undergoing detoxification).

- Graduates have better outcomes than dropouts.

- Outcome at follow-up is positively related to length of stay in treatment.

- Retention in nonmethadone outpatient programs tends to be poorer than for methadone maintenance or therapeutic communities.

Chemical Dependency Programs

Chemical dependency (CD) programs generally are residential or inpatient, with a three- to six-week duration, followed by up to two years of attending self-help groups or a weekly outpatient therapy group. CD programs are based on an Alcoholics Anonymous (12-step) model of personal change and the belief that vulnerability to dependence is a permanent but controllable disability. Its goals are those of total abstinence and lifestyle alteration.

Chemical dependency programs largely treat primary alcoholism, and they have not been carefully evaluated for treatment of drug problems. A few follow-up studies of individuals who have completed CD treatment indicate that clients whose primary problem is drugs have poorer outcomes than clients whose primary problem involves alcohol.

CD programs are often located in hospitals. In the committee's judgment, none of the model therapeutic core elements of this modality require the presence of acute care hospital services. There is no evidence that hospital-based CD programs are either more or less effective for drug problems than CD programs not sited in hospitals.

Detoxification

Detoxification is therapeutically supervised withdrawal to abstinence over a short term, that is, up to 21 days but usually 5 to 7 days, often using pharmacological agents to reduce client discomfort or the likelihood of medical complications. Detoxification is seldom effective in itself as a modality for bringing about recovery from dependence, although it can be used as a gateway to other treatment modalities. Detoxification episodes are often hospital based and may begin with emergency treatment of an overdose. However, clinicians generally advocate that, because of the narrow and short-term focus and very poor outcomes in terms of relapse to drug dependence, detoxification not be considered a modality of treatment in the same sense as methadone, TCs, outpatient nonmethadone, and CD programs.

Much drug detoxification (an estimated 100,000 admissions annually) is now taking place in hospital beds. It is doubtful that hospitalization (especially beyond the first day or two) is necessary in most cases, except for the special problems of addicted neonates, serious sedative dependence, and concurrent medical or severe psychiatric problems, and for clients with a documented history of complications or flight. In this committee's judgment, detoxification may be undertaken successfully in most cases on a nonhospital residential, partial day care, or ambulatory basis.

Variations in Effectiveness of Programs Within Modalities

Effectiveness measurement was a critical early issue in the development of the drug treatment system. Data from the 1970s indicated that client retention and discharge status varied significantly across geographic areas. Aside from methadone studies, however, there is no published literature examining whether these differences were systematically related to client characteristics or to differences in the therapeutic process—or, indeed, whether such variations might be expected to occur as a result of chance.

Studies of methadone treatment indicate that program characteristics such as inadequate methadone dosage levels, staff turnover rates, and differences among counselors (which are not fully defined) are significantly related to differences in client performance while in treatment. Currently, however, program effectiveness measures are virtually unused in the management of the treatment system.

Treatment in Prisons

About 30 percent of state prison inmates report drug consumption patterns serious enough to indicate a need for treatment. According to the most recent (1986) sample survey of state penitentiaries, 15 percent of all inmates reported some episode of voluntary drug treatment *while in prison* (during the individual's current or previous confinement). At least two-thirds of prison treatment episodes are probably equivalent to the outpatient nonmethadone modality—periodic individual or group therapy sessions. The other episodes are similar to stays in a therapeutic community, including separation from the general prison population for the expected 6 to 12 months until graduation from the program.

Because the correctional system has custody of so many individuals in need of treatment, it would seem to be an important site for drug treatment programs, and numerous such programs have been established at various times over the years. Most prison drug treatment programs studied, including specialized "boot camp" or "shock incarceration" facilities, have not reduced the typically high postrelease rates of recidivism (return to criminal behavior) among untreated prisoners. However, a small number of controlled prospective studies of well-established prison TCs with strong linkages to community-based treatment programs indicate that prison TCs can reduce the treated group's rate of *rearrest* by a worthwhile margin. These studies also yield, within the treated group, the strong correlations between outcome and length of retention in treatment that are found in studies of community-based modalities.

Costs and Benefits of Treatment

There is qualified evidence that methadone maintenance, therapeutic communities, and outpatient nonmethadone treatment are cost-beneficial. The qualification is necessary because, first, there have been very few cost/benefit studies; second, although those performed have been consistent in finding positive results, they have not been derived from fully controlled clinical trials but rather from controlled observational studies.

Methadone treatment, when implemented at the resource levels observed in the late 1970s, provides individual and social benefits over a term of at least several years that are substantially higher than the costs of delivering this treatment. The benefits of TC treatment are also substantial, but the short-term costs are higher than those of methadone treatment, yielding generally somewhat lower benefit/cost ratios but ones that still favor the use of this treatment. The benefits of outpatient treatment are smaller than those of methadone or TC treatment, but the cost of the treatment is low and the yields thus are favorable. There are no cost/benefit analyses for chemical dependency programs, detoxification, or prison-based treatment.

Comparison of Data on Effectiveness and Expenditures for the Major Treatment Modalities

Table 5-6 summarizes, for the four principal treatment modalities, the type and amount of available treatment effectiveness data, from the most rigorously conducted randomized clinical trials,² to natural experiments, to controlled observation studies using multivariate analysis (the DARP and TOPS), to simple studies of treatment cohorts with limited comparisons and analyses. Methadone has received far more analysis than any other modality, followed by therapeutic communities and outpatient nonmethadone. Chemical dependency programs have had by far the least study.

In contrast to the weight of the effectiveness data are the numbers of clients treated by different modalities and the annual revenues (discussed more extensively in Chapter 6). Chemical dependency is the treatment modality with the highest revenues, probably the second largest number of clients, and the smallest scientific basis for assessing its effectiveness. Outpatient nonmethadone programs treat more clients than all other modalities

²The scientific attractiveness of clinical trials of a treatment versus a placebo or of treatment A versus treatment B is clear in principle, but such trials have proven very difficult to conduct with the major modalities of drug treatment. The modalities are quite different (and therefore hard to make "blind" to clients or clinicians), require extended duration (creating attrition problems), involve reluctant and socially troubled clients (leading to difficulties in achieving random assignment, compliance, and retention), and deal with complicated prognoses, especially owing to the chronic, relapsing nature of the problem (creating problems of participant selection, measurement, and comparability).

combined, and although there have been two major studies (DARP and TOPS) that examined the effectiveness of multiple programs, the literature on this modality does not adequately deal with the diversity of treatments and client differences subsumed in this category. Methadone maintenance has been studied much more extensively than any other modality, has the smallest annual revenues of the four major modalities, and is appropriate only for long-term treatment of opiate-dependent individuals. Therapeutic communities have been studied much more than outpatient nonmethadone programs but substantially less than methadone programs.

Needs and Priorities for Research on Treatment Services and Methods

Research on drug treatment is a core responsibility of the National Institute on Drug Abuse (NIDA) and has been a roughly constant proportion of NIDA's program for a number of years. NIDA's total research funding declined by nearly half in real terms from 1974 to 1983, but it has greatly increased since then and is projected to reach triple the 1983 level in 1990.

Major treatment research questions that need to be addressed for the major modalities of public treatment are the following: What client and program factors influence treatment-seeking behavior, treatment retention and efficacy, and relapse after treatment? How can these factors be better managed? Treatment-seeking factors include community outreach, family and employer interventions, and program intake and triage procedures. Retention and efficacy factors include optimal durations and schedules, pretreatment motivations, counselor or therapist behavior, incentives and conditions of employment, clinic procedures, criminal justice contingencies, and ancillary services. Posttreatment factors include relapse prevention interventions, abstinence monitoring, and environmental reinforcement.

Despite the difficulties of maintaining the integrity of controlled experiments in treatment programs, these studies provide the most incontrovertible evidence about comparative treatment effects, and efforts to conduct them should be strongly encouraged. A more detailed understanding of treatment processes through ethnographic and case study methods is also badly needed. This work is the basis for the design and interpretation of survey instruments.

Studies should be initiated within as well as across each major treatment modality to answer the following question: What are the relations of treatment performance (that is, differential outcomes, taking initial client characteristics into account), the content and organization of treatment (specific site arrangements, service offerings, therapeutic approaches, staffing practices), and the costs of treatment?

Health services research is a critical element in building treatment

systems. An important foundation for services research as well as program accountability is the development, maintenance, and analysis of a system of data acquisition on treatment programs and client performance. Results from these kinds of studies will permit more fully optimal, cost-effective selection of facility quality, staff salary and training levels, services coordination methods, intensity of services, and other components.

Systems of this sort were established in the 1970s but were effectively disassembled as a matter of federal policy in the 1980s. Treatment data acquisition systems must be rebuilt and effectively managed and utilized if the improvement of treatment knowledge and practice is to be evaluated and facilitated in the 1990s. Data on treatment effectiveness and costs should become the cornerstone of decisions about treatment coverage by public and private programs.

Chemical dependency programs are the least well studied of the drug treatment modalities. The aggressive marketing that many such programs have deployed has created suspicion about these programs in many quarters that cannot be allayed without investment in objective treatment research and evaluation. The optimal site of delivery and length of programming, including the duration of intensive treatment and aftercare periods, and the inclusion of specific therapeutic elements need to be more closely investigated.

Only a few chemical dependency treatment providers have played positive roles in providing data and research opportunities for effectiveness studies; many more need to do so in order to answer these questions: What is the effectiveness of chemical dependency treatment for drug-impaired clients of varying characteristics? Are there variations in program effectiveness, and if so, why? What are the actual costs and benefits of the most effective components of chemical dependency treatment?

The major efforts to date to investigate treatment efficacy occurred prior to the epidemiological reemergence of cocaine in the 1980s. There is reason to believe that some findings about treatment modalities—such as the importance of time in treatment—will prove robust in the face of changing drug markets, but others may not. The infrastructure of treatment research centers decayed during the stagnation of drug research funding, and as this capability is rebuilt, it should specifically address the following questions about cocaine treatment: What are the most effective treatment elements for cocaine dependence and abuse? To what degree can current modalities be effective for crack-cocaine? What new or existing pharmacological and nonpharmacological treatment elements can improve the clinical picture?

The majority of individuals in treatment are young adult males (20 to 40 years old), and their responses dominate treatment research statistics. The major findings of research to date on the effectiveness of different

modalities and elements of treatment seem to apply roughly as well to adolescents and women with young children (including pregnant women) as to the more prevalent demographic groups. However, the potential significance of child-rearing/child-bearing women and young clients in terms of the future benefits of present treatment (or future costs of present nontreatment) is great. Research plans in all areas need to devote special attention to differentiated knowledge about these populations. The committee recommends that a special study initiative be undertaken by the National Institute on Drug Abuse, in conjunction with other relevant agencies of the Public Health Service, on the treatment of drug abuse and dependence among adolescents and women who are pregnant or rearing young children.

THE TWO-TIERED STRUCTURE OF THE TREATMENT SYSTEM (CHAPTER 6)

There are two highly contrasting tiers of treatment programs—a public and a private—distinguished fundamentally by their mode of financing. This distinction generates and sustains differences in clientele, services offered, and current readiness to accommodate new admissions.

As reported in a 1987 survey, the public tier supplied 636,000 treatment episodes with revenues of \$791 million, about four-fifths financed by public funds; it comprised largely not-for-profit and some publicly owned outpatient clinics (2,434 nonmethadone and 267 methadone), more than 900 residential programs, 159 public hospitals, and 72 prison programs (see Table 6-1). This tier served mostly indigent clients, and in high-prevalence parts of the country it was at or above effective capacity.

The public tier was developed about 20 years ago with federal leadership, a role that has largely shifted to the states, few of which have come close to covering the big reductions in federal contributions that have taken place since 1975. This tier continues to treat as many individuals as in the past but with less adequate facilities, services, and personnel. It is operating short of current demand in some but not all parts of the country.

The private tier in 1987 supplied 212,000 drug treatment episodes with revenues of \$521 million, three-fourths from privately paid fees and reimbursements; it comprised 801 proprietary and not-for-profit hospital programs (offering in almost all cases chemical dependency treatment), 331 for-profit outpatient programs, 76 proprietary residential programs, and 67 methadone programs.

The private tier treats mainly insured working-class, middle-class, and upper class cocaine and marijuana clients (within a larger program serving mostly alcohol clients); in most instances it has been treating drug cases

for less than 10 years and has grown very rapidly. Per diem charges in private-tier outpatient programs (methadone and nonmethadone) appear similar to those in the public tier, but residential and hospital per diem charges are three to four times greater. The private tier reports abundant reserve capacity.

In 1987, reports of reserve treatment capacity were highest (more than 50 percent above the current census) in private and public hospitals and in private-tier residential facilities; reserve capacity was lowest in public-tier methadone and outpatient facilities. There were substantial regional differences in public-tier availability; when these are taken into account, it appears that some areas of the country are sorely pressed for public residential treatment as well.

There is a need to selectively expand the public tier—but with a very important reservation. The current resource intensity of the public-tier programs is marginal at best. Expansion will almost certainly reduce and dilute this intensity unless aggressive measures are instituted. The need for more resource-intensive treatment appears equal in importance to the need for increases in capacity. Research data on returns to more intensive resources per patient are scarce, but the most sensible course is to increase public resources to restore earlier levels of service intensity, facility quality, and staff skills, as well as to increase the capacity for new admissions.

In selected regions, the public tier needs greater investments in both intensity and capacity. The private tier appears at this time to be heavily committed to acute care hospital treatment for cocaine and marijuana problems and may benefit most from either a shift toward greater use of nonhospital residential and outpatient modalities or, if such a shift cannot be effected, a move toward cost or charge structures that will permit and encourage the more extended periods of care typical of these modalities, in contrast to the short stays and high per diem charges now characteristic of hospital-based chemical dependency treatment.

PUBLIC FINANCING OF DRUG TREATMENT (CHAPTER 7)

The Goals and Priorities of Public Coverage

Two basic principles justify public coverage of drug treatment, and these principles in turn suggest specific priorities for the expansion of the public tier that is now under way largely as a result of the recent federal anti-drug legislation. The first principle is that public coverage should seek to reduce external social costs—in particular those relating to crime and family role dysfunctions. The second principle is that public coverage should remedy constraints arising from inadequate income. Based on these

principles, the general goal of public coverage should be to provide adequate support for appropriate and timely admission, as well as completion or maintenance, of good-quality treatment for individuals who cannot pay for it (fully or partly) whenever such individuals *need* treatment, according to the best professional judgment, and *seek* treatment or can be *induced* through acceptable means to pursue it, assuming there is some probability of positive response.

The committee estimates that 35 million individuals qualify as indigent with regard to private purchase of any form of drug treatment; that is, they are neither adequately insured nor able to pay out of pocket for appropriate forms of specialized treatment if needed and thus would have to rely on public services. For residential drug treatment, the committee's estimate of those who are unable to afford it if needed rises to 60 million.

The resources still needed to achieve the general goal of public coverage represent a major increase in public support for treatment, and even under the current conditions of extraordinary public concern about the drug problem and the possibility of commensurate appropriations, everything cannot be done at once. Priorities for treatment thus need to be defined. The committee recommends the following priorities for public-tier expansion:

- end delays in admission when treatment is appropriate, as evidenced by waiting lists;
- improve treatment (by raising the levels of service intensity, personnel quality and experience, and retention rates of existing modalities; by having programs assume more integrative roles with respect to related services; and by instituting systematic performance monitoring and follow-up);
- expand treatment through more aggressive outreach to pregnant women and young mothers; and
- further expand community-based and institutionally based treatment of criminal justice clients.

The upgrading of performance and quality levels is intrinsic to the other three priorities and would be needed even if expanded treatment admissions were not an objective. The recent decade-long hollowing-out of treatment programs through resource attrition, together with research findings about substantial variations in program performance, and the consistent importance of retention in predicting outcome all support the need for restoration of funding and quality levels in treatment.

The upgrading of staff capabilities and morale and modest but critically needed renovation of decrepit facilities and furnishings have multiple significance. Good staff morale and decent facilities increase the attractiveness of treatment programs and thus their ability to recruit and retain staff.

These factors also affect client interest in program admission and retention. Most critically, the competence, quality, and continuity of care givers may well be a critical element in explaining the differential effectiveness of treatment programs.

It is possible to estimate the amount of new public financing needed to meet these priority objectives, although to do so, key assumptions must be made about such parameters as capital costs, training expenses, and the number of individuals who could be induced to enter treatment at various levels of effort. The committee judges that the amount needed to upgrade and expand the drug treatment system, beyond current spending rates, is \$2.2 billion in annual operating costs (plus \$1.1 billion in one-time costs) for a comprehensive plan, \$1 billion annually (plus \$0.5 billion up front) for a core plan, or \$1.6 billion annually (plus \$0.8 billion in up-front costs) for an intermediate plan. Details are provided in Table 7-1. Because data supporting the costs of the recommended strategies are uncertain, it is essential that relevant data collection be developed very quickly and its products analyzed as soon as possible.

The committee's recommended strategies lead to a consideration of needed changes in how to manage the public tier. These issues divide into the following: the roles and interrelations of the states, the federal government, and public-tier providers; the most appropriate shorter and longer term financing mechanisms for providing public support (direct service programs versus public insurance); and the controls needed to make the most effective and efficient use of public funds.

Federal and State Roles

State governments have played the major role in financial administration and quality control of drug treatment programs in recent years, but there has also been cyclical movement between state and federal leadership. The federal government originally built most of the public tier of providers and then transferred responsibility for regulating and supporting this tier largely to the states; it is now moving back into the lead role. This expansion of federal support should be accompanied by more active, centralized direction and control of treatment resources.

States will continue to have the major operational responsibility for implementing new drug treatment priorities and standards. The increasing streams of federal monies must be allocated so as to help support the critical data collection, training, and technical assistance functions to be deployed through state offices. In the recommended expansion of support, it is appropriate for the federal government to take the lead in the short term in upgrading program quality and extending outreach to critical populations. In so doing, there are two important near-term management

objectives. One objective is to ensure the most efficient and effective expenditure of existing and incremental funds, preserving as much discretion as possible on the federal level so that federal agencies have the flexibility to encourage states to reach the new goals. The second objective is to maximize coordination with other anti-drug abuse activities (including public safety, justice, and correctional institutions) and other social welfare and health services.

In lieu of fixed formulas for the allocation of funds received by the states (which, as most recently revised, are based on population weighted somewhat by degree of urbanization), the committee recommends that state agencies be required to submit plans that analyze the conjunctions and mismatches among the most current epidemiological information and known treatment capabilities; it further recommends that the states be required to propose annual spending patterns that reflect this information. In addition, a portion of the federal dollars must go into technical assistance and data system building to ensure at the state, local, and program levels that this planning effort will have a factual basis.

One other notable element of the federal role is support for veterans. The Veterans Administration has previously targeted drug programs for drastic budget reductions in order to meet overall fiscal limitations. At the very least, outpatient or residential drug treatment services—furnished directly or by contract—should be made available to meet the needs of former inpatients.

Mechanisms for Providing Public Support

At present, the public sector provides access to drug treatment through two distinctly different financial mechanisms: direct program financing through service contracts and grants to formally defined and certified addiction treatment programs, versus individual insurance financing through Medicaid and similar programs. The largest and most important guarantee of access to drug treatment is the program of public grants or contracts with public-tier treatment providers, who serve virtually all of the medically indigent population (the poor, uninsured, or underinsured) needing drug treatment. Continued expansion of the dollar level of this form of support is the primary means recommended by the committee to address public coverage goals and priorities over the next 5 years.

Emphasis on direct service is an appropriate model for directed system building, but long-term system maintenance may be better served by a proportionately greater use of public insurance financing, supplemented by direct service grants to ensure critical program elements such as outreach and other important services to the many individuals for whom low income is not the only barrier to seeking and responding well to treatment. The

ground should be prepared to "mainstream" drug treatment more fully in the next 5 to 10 years, incorporating it as much as possible into public health care insurance for the poor, that is, the set of state programs presently gathered under the tent of federal Medicaid.

Currently, eligibility for Medicaid among poor people is sharply circumscribed for those between the ages of 18 and 65 who are not permanently disabled. There are large gaps in eligibility in the health insurance programs of the 50 states and the District of Columbia, all of which participate in the federal Medicaid matching program. Medicaid does provide significant health care coverage for low-income women (especially if they are pregnant) and their children who are less than 18 years old (especially if the children are less than 6 years old). All states, however, exclude nondisabled single men from coverage, and there is great variation across states in the family income ceilings for Medicaid eligibility, which can be and often are well below the federal "poverty line."

Fewer than a handful of states with the broadest eligibility and benefits now account for a large majority of all Medicaid support for drug treatment. Yet even in these states, the programs cover only some of the services needed in—or adjoined with—drug abuse treatment (e.g., medical examination at intake, visits for methadone dispensing, hospital-based services), and payment levels are often much lower than the cost of covered services.

There are five steps that would be particularly useful as incentives toward a larger role for Medicaid in treating drug problems and that would not compromise the efficiency of the direct service support mechanism. The first step is to require all parties to cooperative agreements, grants, or contracts involving federal funds to develop and display evidence of progress toward the long-term goal of increasing the receipt of funds from the Medicaid system. Examples of potential strategies include facilitating the registration of clients eligible for Medicaid benefits and meeting relevant accreditation standards familiar to Medicaid, such as those of the Joint Commission on Accreditation of Healthcare Organizations or the Commission on Accreditation of Rehabilitation Facilities.

The second useful step is to begin stipulating matching requirements rather than maintenance-of-effort requirements for increases in grant support to the states. By determining the matching ratio with the same formula used to determine Medicaid matching, the incentive to states to use Medicaid structures will be increased, and the disincentive—states must match every new Medicaid dollar but can get more block grant dollars without increasing state appropriations—will be removed.

The third step is for the federal government to require state Medicaid programs to include drug treatment as part of the standard package of benefits offered to all current (and any newly added) Medicaid-eligible per-

sons. The drug benefit package should cover methadone treatment, outpatient nonmethadone treatment, and residential treatment in state-accredited freestanding (nonhospital) as well as hospital-affiliated residential facilities and outpatient programs. No special copayments or limitations—that is, no copayments or limits not generally applicable to medical/surgical benefits—should be applied to drug treatment. For those states with private insurance mandates for drug treatment insurance coverage, the Medicaid drug treatment benefit should be at least as comprehensive as (which does not mean identical with) the mandated private insurance benefit.

The fourth step is to reduce gross inconsistencies in the way drug problems are handled in eligibility determinations for Medicaid, Aid to Families with Dependent Children, Medicare, Supplemental Security Income, and other income maintenance, education, and housing assistance entitlement programs. These inconsistencies create a bureaucratic nightmare for the drug treatment programs and state agencies that draw on more than one such source of funds—which most of them try to do. The Office of National Drug Control Policy should analyze definitional inconsistencies among federal programs and lay out a plan to minimize resulting problems.

The fifth step is to develop a thoroughgoing system of public utilization management (a term describing arrangements to define access to effective treatment while keeping costs at efficient levels). Good utilization management works to ensure that a fully appropriate and needed range of services is used and that different service components are coordinated. Many of the components of such a system were developed in the early 1970s but subsequently disestablished. These components are described in the next section.

Utilization Management

The most fundamental principle of utilization management is that access to and utilization of care should be controlled and managed on a case basis by "neutral gatekeepers" or central intake personnel (although this triage or central intake function may need to be dispersed geographically). These personnel should be regulated by certification standards and undergirded by time-limited, performance-accounted licenses and contracts. Client assessment, referral, and monitoring of progress in treatment should be reviewed (or performed) independently of the treatment provider. These personnel should have appropriate clinical credentials that include the understanding that longer residential and outpatient durations are strongly correlated with beneficial results among public clients. Effective utilization management should recognize that drug abuse and dependence are chronic, relapsing disorders and that for any one client, more than one

treatment episode may be needed and different types of treatment may need to be tried. "Gatekeepers" should have access to ongoing performance evaluation results and responsibility for implementing cost-control objectives.

There should be rigorous preadmission and concurrent review of all residential drug treatment admissions, and especially of hospital admissions, and concurrent review of outpatient treatment. Unlike the objective in utilization management of acute hospital care for most medical conditions, which is basically to hold inpatient lengths of stay to a minimum, the objective for drug treatment services should be to increase client retention in appropriate, cost-efficient treatment settings.

The major cost-control concern in this area is the use of high-cost treatment when lower cost alternatives could be as effective. This hazard attaches principally to acute care hospital inpatient services for detoxification or rehabilitation treatment. The public tier generally has not been heavily invested in hospital-based drug treatment, and this should continue to be the case—but not as a matter of rigid exclusion. The committee recommends that hospital-based drug services be reimbursed at the same level as nonhospital residential treatment rates, unless there is evidence that a client specifically requires continuing acute care hospital services. Hospital-based drug detoxification should only be covered in the event of medical complications such as those noted below or the lack of appropriate residential or outpatient facilities nearby. Indications for hospital-based inpatient drug detoxification are the following:

- serious concurrent medical illness such as tuberculosis, pneumonia, or acute hepatitis;
- history of medical complications such as seizures in previous detoxification episodes;
- evidence of suicidal ideation;
- dependence on sedative-hypnotic drugs as validated by tolerance testing (therapeutic challenge) to determine the appropriate length of stay; and
- history of failure to complete earlier ambulatory or residential detoxification versus completion in inpatient settings.

As perhaps the most important and immediately needed utilization management requirement, the committee recommends that all drug treatment programs receiving public support be required to participate in a client-oriented data system that reports client characteristics, retention, and progress indicators at admission, during treatment, at discharge, and (on a reasonable sampling basis) at one or more follow-up points. There should be periodic, independent investigation on a sampling basis of the quality and accuracy of the data system or systems, and the systems should be designed to dovetail or link with ongoing services research and data collection in other government agencies and units concerned with drug

be designed to dovetail or link with ongoing services research and data collection in other government agencies and units concerned with drug problems (see the discussion of research needs in Chapter 5). Certification for public support should be time limited and based on performance—especially client retention and improvement—rather than on process standards. Performance is to be demonstrated by outcome evaluation, and the standards of performance adequacy should be informed by past and ongoing treatment effectiveness research on retention and outcomes.

PRIVATE COVERAGE OF DRUG TREATMENT (CHAPTER 8)

Extent, Costs, and Trends of Coverage

The private tier of drug treatment providers is largely oriented toward treating the employed population and their family members. The majority of this population, about 140 million individuals, have specifically defined coverage for drug treatment in their health insurance plans. About 48 million others who are privately insured do not have specifically defined coverage for drug treatment, although coverage may occur *de facto* under general medical or psychiatric provisions. As of 1988, the health plans of about 67 percent of full-time employees of firms with 100 or more employees offered specifically defined coverage for some types of drug treatment, although the actual extent of benefits under these defined coverage provisions is uncertain.

Actuarial studies of claims experience yield rather modest estimates for the overall cost of covering drug treatment. Drug treatment expenditures tend to be buried under more inclusive headings and behind "horror stories" involving troubled adolescents with multiple diagnoses spending months in psychiatric facilities. Nevertheless, the committee estimates that a health plan with typical coverage now spends 1 percent or less of its total outlays for explicit drug treatment, most of it for hospital inpatient charges—with a large fraction of that cost devoted to detoxification. There has been a substantial apparent growth in the rate of drug treatment claims in recent years, although it is unclear how much of this increase is due to more revealing or accurate drug problem diagnoses versus increased demand for drug treatment.

Although this growth is disturbing to the degree it increases the aggregate cost of health insurance premiums, it is desirable if it means that more of those who need treatment are seeking and receiving it, particularly if the treatment delivered is appropriate, effective, and reasonable in cost. Some payers, however, reacting in part to the high costs of a small number of cases and the high incidence of recidivism, have strongly questioned the

value of drug treatment episodes, and they have moved to differentially limit reimbursement of drug treatment to help trim increasing overall costs.

Mandating Drug Treatment Coverage

There are legislative mandates in 18 states plus the District of Columbia requiring that certain categories of employer-supplied group health plans specifically cover—or offer optional coverage for—drug and alcohol treatment. (Another 19 states require some degree of coverage for alcohol treatment only.) In the committee's judgment, private coverage of drug treatment is beneficial to individuals and employers and should be included in every health package; however, legislative mandates at the state level have not necessarily proved to be an effective way, and are clearly not the only way, to induce adequate coverage. Most insured individuals whose plans include explicitly defined coverage for drug treatment reside in states that do not have legislative mandates for such coverage. Moreover, the political process has often produced less-than-optimal mandatory provisions that are difficult to adjust, overly rigid, and pay too much attention to limits on the length of stay and the number of visits rather than to the cost and effectiveness of treatment. Most mandatory provisions have the constraining effect of funneling people toward one particular modality of treatment by favoring inpatient stays of prespecified lengths.

The committee believes that the development of soundly derived standards for admission, care, and program performance will do more at this time to generate appropriate coverage than a further set of mandates. If mandates are to be used, efficiency and fairness dictate that they be applied to all competing insurers. Yet if the private market leaves large numbers of the insured population without coverage for drug treatment, it may be necessary for government to intervene. Such action could involve subsidies for drug treatment coverage, tax preferences for certain kinds of coverage, or mandates, with the choice dependent on judgments about the incidence, efficiency, and equity of alternative ways of financing coverage.

Optimal Coverage Provisions

Private insurance provisions (including most legislatively mandated benefits) often include financial incentives for beneficiaries to seek more expensive hospital or residential treatment. Although residential drug treatment, including hospital treatment, often serves clinically important functions such as permitting intensive therapy and isolating the patient from an adverse environment or treating concurrent psychiatric or medical complications, hospital-specific components (e.g., 24-hour onsite medical coverage) do not seem to be the therapeutically important elements in

drug treatment programs that are sited there, even though the availability of these components is used to justify charging acute care hospital rates for all clients.

The committee recommends that curbs on unit-of-service costs for inpatient care be strengthened and that payers insist on the generation of reliable performance/outcome data. Drug treatment services at hospital sites should be reimbursed separately from other diagnoses or hospital services; there appears to be no compelling reason why these services for most drug treatment patients should routinely command fees comparable to acute care rates rather than to reasonably competitive residential treatment rates.

Insurers and employers need to become better informed about drug treatment and to structure their benefits to support controlled access to a broad range of the most appropriate, effective, and efficiently priced treatments rather than to a narrow (and expensive) band of options that are similar in form to the treatment of acute medical conditions. Private plans should cover appropriate, adequate, cost-effective drug treatment and not reimburse the cost of excessive, inappropriate treatments or charges (see Table 8-2 for placement guidelines).

The committee recommends that private risk bearers, in lieu of arbitrary payment caps or exclusions, institute rigorous, independent preadmission review (where possible) and concurrent review of all hospital and residential admissions as a way to control access and utilization, ensure appropriate placement, and manage costs. Preadmission review may not be necessary for such admissions, but early concurrent utilization review is important for such treatment to ensure that diagnostic criteria are observed and charges are reasonable. Employee assistance programs can serve as utilization managers in cases in which their personnel have appropriate training for matching patients to treatment. Hospital utilization should be managed under the same terms as those recommended for public coverage (see the section on utilization management in Chapter 7).

The committee further recommends that private payers insist that providers participate in and agree to the publication of regular, independent follow-up surveys to determine client outcomes, taking into account data on admission characteristics such as problem severity. Providers and payers should be able to compare treatment results with overall program norms to ensure the maintenance of good performance and the identification of poor performance when it occurs.

The committee recommends that the provisions of drug treatment benefits, including deductibles, copayments, stop-loss measures, and scheduled caps, be similar to provisions for treatment of other chronic, relapsing health problems. Except in terms of limitations on the length of stay and number of visits, such provisions are mostly the rule today. Sound

utilization management that includes reliable performance and outcome measurements is likely to obviate the need for separate length-of-stay and dollar caps on coverage. Nonhospital residential and outpatient treatment delivered in state-certified treatment programs should be covered. Coverage limitations, charge schedules, and cost-containment incentives (e.g., copayment schedules) should be adjusted to reflect the findings of research on appropriate models, lengths, and costs of drug treatment—especially the recognition that longer residential and outpatient stays are strongly correlated with more beneficial results.

CODA

The drug problem is not a fixed constellation but a restless, ever-changing composite. Within this pharmacological and sociological diversity, treatment addresses the chronic, relapsing disorders of drug dependence and abuse. The best treatment interventions have been shown to “work”—reversing drug-seeking behavior, related criminal activity, and other dysfunctions—only partially; that is, the different treatment methods encourage recovery from these imperfectly understood disorders to a greater or lesser degree. Moreover, each modality of treatment can attract and affect only some of the people in need.

Success in treatment is not guaranteed and is often not complete, but even if it managed to be both, there would still be a major problem: most people who need treatment seek it only reluctantly, after failing at self-help, after much harm has been done, and after much pressure—interior and exterior—has been brought to bear. However, as with heart disease and cancer in the health domain, theft and assaultive behavior in the realm of violent crime, or homelessness and family dissolution in the area of social welfare, the lack of a panacea does not excuse society from responding to the best of its ability. The overall costs of drug problems are so high that reducing them even modestly is worthwhile. The committee is persuaded that the treatment methods available today can at least potentially realize benefits that well exceed the costs of delivering these services. Treatment makes sense on the grounds of utility as well as humanity.

The treatment system should do a better job of knowing itself and acting on that knowledge. Much of the knowledge gained in the past about the elements and optimal costs of effective treatment was brushed aside in the 1980s in the zeal to cut public spending and increase private revenues. In the 1990s, a different perspective seems to be gaining ground. Solutions to the challenge of improving drug treatment can be achieved if current financial trends continue and if leaders of the public and private tiers of drug treatment bend their efforts to the modest but necessary task of making the system learn its lessons.

FIGURES AND TABLES FROM FULL REPORT

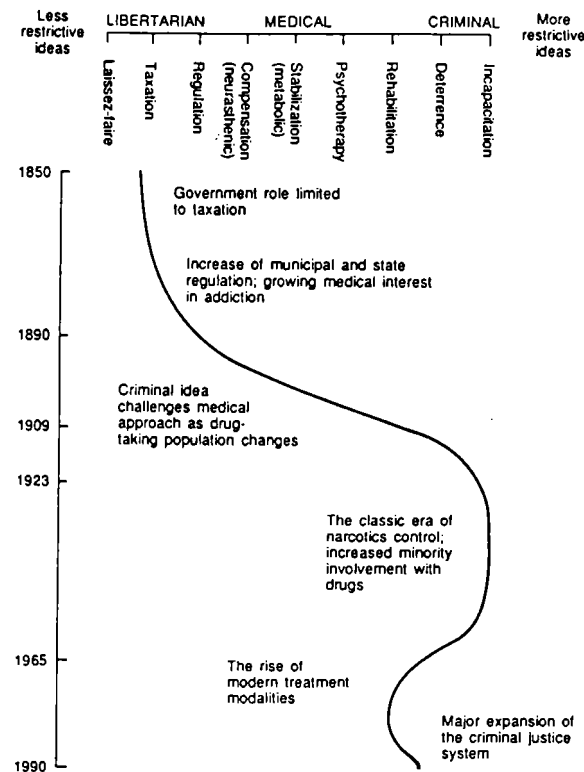


FIGURE 2-1 A simplified spectrum of governing ideas about drugs. The historical changes represented in this figure by a continuous trend line constitute the committee's summary judgments about the ideological “center of gravity” in the country from 1850 to 1990, based on the evidence reviewed by Courtwright and Besteman (both 1990) and elsewhere in the report, particularly Chapters 4 and 6.

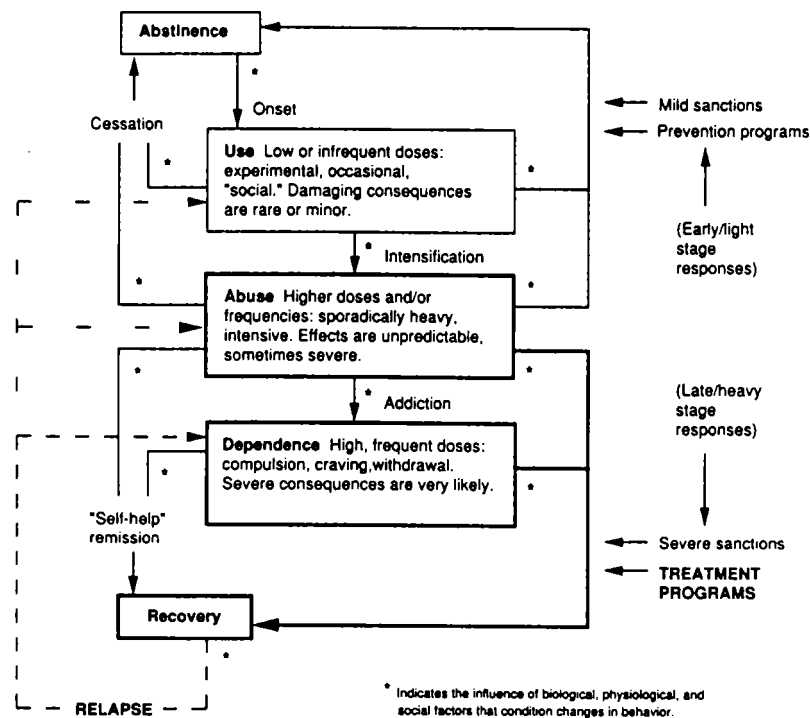


FIGURE 3-1 A model of individual drug history.

TABLE 3-4 Estimated Need for Drug Treatment (in thousands) Among Surveyed Adult and Adolescent Populations, 1987-1988

Population	Total	Those Who Need Treatment
Household	198,000	
Clear need		1,500
Probable need		3,100
Homeless (sheltered, street, and transient)	1,225	170
Criminal justice clients		
Correctional custody	925	320
Probation and parole	2,600	730
Pregnancies (live births)	3,875	105
(Less overlaps) ^a		(- 470)
Total needing treatment		5,455

^aIn theory, the need for treatment among parolees and probationers should be counted in the household surveys because it is generally a condition of parole and probation that certain signs of social stability, such as a fixed address in the community, be maintained. However, enforcement of such conditions is spotty. The efficiency of coverage of parolees and probationers in the national drug abuse household survey has not been examined. It would be simple to do so, however, by asking respondents whether they were currently on probation or parole. Such an item should be no more subject to nonresponse or validity problems than questions about illicit drugs. In the 1988 national survey on drug abuse, at least 70 of 5,800 adult respondents (including oversampled subgroups) would have been on probation or under parole supervision in the event of standard demographic likelihoods of participation.

There is some basis for estimating the efficiency of sampling probationers and parolees in the household survey. Criminal recidivism among parolees is very high; around two-thirds of all parolees are rearrested within a few years, and the figure is higher for those needing treatment. On this evidence, parolees have much reason to conceal themselves and are not likely to be residentially stable or accessible enough for complete enumeration and good representation in a household survey. The committee estimates that only 30 percent of those needing treatment, or 45,000 persons, are represented. About 20 percent of all probationers do not successfully complete probation. Those needing treatment clearly fail at a higher rate, probably 40 to 50 percent (see, e.g., Toborg and Kirby, 1984). This recidivism rate is not as high as for parolees, but it does suggest a reduced likelihood of being identified for participation in a household survey. The committee estimates that 50 percent, or 270,000 probationers needing treatment, may be represented there.

Overlap with the homeless estimate seems to require reasoning in the other direction. No data were located on rates of probation or parole status among the homeless. Yet the incidence of such status in this group seems likely to be higher than among the residentially stable. With the latter proportion placed at about 15 percent, doubling that yields 30 percent of the homeless drug-dependent or drug-abusing individuals on parole or probation—50,000 individuals.

The overlap of women who are pregnant (and give birth to live babies) with the household and other population figures is virtually total. The overlap of pregnancy, probation, and parole groups with homeless and household populations needing treatment is thus estimated at 470,000 persons.

Source: Institute of Medicine analysis of data from the National Household Survey on Drug Abuse conducted by the Research Triangle Institute; Innes (1988); Flanagan and Jamieson (1988); Greenfeld (1989); and Institute of Medicine (1988b).

TABLE 5-6 Comparison of Types and Strength of Evidence on Effectiveness, Numbers of Admissions, and Revenues for the Major Drug Treatment Modalities

Element	Treatment Modalities			
	Methadone Maintenance	Therapeutic Communities	Outpatient Methadone	Chemical Dependency
Evidence of effectiveness ^a				
Randomized clinical trials	**	—	—	—
Quasi-experiments ^b	**	*	—	—
Controlled observations ^c	***	***	**	—
Simple observations ^d	***	***	***	**
Annual number of admissions (in thousands) ^e	130	110	430	140
Annual revenues (in millions of dollars) ^e	200	200	300	500

^a * = A single study of this type; ** = a few such studies; *** = studies of numerous programs with varied study designs; — = no such studies conducted.

^b For example, the introduction of a new treatment modality, a program closing, or an incompletely randomized trial that used multivariate analysis.

^c Studies of treatment cohorts, usually including treatment refusals and using multivariate analysis.

^d Studies of single treatment cohorts without nontreatment comparisons and using only univariate or bivariate analyses.

^e The source of these modality statistics is the Institute of Medicine analysis of the 1987 National Drug and Alcoholism Treatment Utilization Survey (see Chapter 6 for discussion of these admission and revenue estimates).

TABLE 6-1 Comparison of Selected Characteristics of the Public and Private Tiers of Drug Treatment

Characteristic	Total	Private	Public
Annual admissions (in thousands)	848	212.4	636.0
Current census (in thousands)	263	47.5	215.9
Capacity (in thousands)	329	72.2	256.5
Capacity utilization	80%	66%	84%
Additional capacity	25%	52%	19%
Revenues (millions of dollars)	1,312	521	791
Revenue per admission	1,550	2,450	1,240
Facilities	5,121	1,275	3,846
Hospitals	960	801	159
Residential	990	76	914
Outpatient	2,765	331	2,434
Methadone	334	67	267
Corrections	72	0	72
Clients per counselor			
Inpatient	9.1	7.2	9.7
Outpatient	38.5	37.3	38.8
Outpatient appointments/week	1.7	1.9	1.65

Source: Institute of Medicine analysis of the 1987 National Drug and Alcoholism Treatment Utilization Survey. Data were provided by the National Institute on Drug Abuse.

TABLE 7-1 Three Strategy Options for the Public Tier of Drug Treatment: Estimated Incremental Costs and Client Projections Relative to 1989

Cost Element	Strategy Type		
	Core	Comprehensive	Intermediate
Annual Costs^a			
Reduce waiting list	330.0	330.0	330.0
Restore funding	412.5	412.5	412.5
Counselor training	19.6	30.1	24.9
Performance data	75.9	112.8	94.4
Expectant mothers			
Outreach	18.8	112.5	56.3
Treatment	87.9	263.7	175.8
Child care	45.9	77.5	61.7
Probation/parole	0.0	660.0	330.0
Prison	0.0	156.3	78.1
Total	990.6	2,155.4	1,564.5
One-Time Investments^a			
Expand residential facilities	278.8	746.2	512.5
Renovate residential facilities	90.0	90.0	90.0
Renovate outpatient facilities	118.1	118.1	118.1
Train new staff	33.2	116.8	75.0
Total	520.1	1,071.1	795.6
Number of clients served^b			
Average daily census ^c	387	607	497
Total annual admissions ^d	1,012	1,505	1,258

^aIn millions of 1989 dollars.^bIn thousands.^cThe average daily client census in 1987 was 212,000; it was estimated at 275,000 in 1989.^dTotal annual admissions to public-tier treatment in 1987 were 636,000; total admissions for 1989 were estimated at 815,000.

Source: See Appendix 7B for calculations.

TABLE 8-2 Preferred Sites or Types of Treatment for Selected Categories of Drug Treatment Clients

Types of Service Needed or Client Characteristic	Inpatient/Residential ^a		Outpatient/Ambulatory ^a	
	Hospital	Nonhospital	Methadone	Counseling
Drug overdose	P	X	X	X
Detoxification	X	S	P	P
Rehabilitation				
High criminality	X	P	P	S
Low criminality	X	S	P	P
Job jeopardy only	X	S	P	P
Adolescent	X	S	X	P
Domiciliary (permanent drug-induced organic brain syndrome)	X	P	X	X

^aP = Primary site/modality of the most appropriate treatment; S = secondary or less likely site for treatment (nevertheless, for some clients this may be the primary or preferred site owing to their specific circumstances or needs); and X = generally inappropriate site/modality for this type of client.