

Remission From Drug Abuse Over a 25-Year Period: Patterns of Remission and Treatment Use

ABSTRACT

Objectives. Using an epidemiologically obtained sample, we examined patterns of illicit drug use, abuse, and remission over a 25-year period and recent treatment use.

Methods. The surviving members of the cohort (n=841), previously surveyed in 1972 and 1974, comprised 3 subsamples of Vietnam War enlisted men and civilian controls. Retrospectively obtained year-to-year measures from the 1996–1997 survey included use and remission of sedatives, stimulants, marijuana, cocaine, and opiates, as well as substance abuse and psychiatric treatment use.

Results. Relatively stable patterns of frequent use in adulthood were found, with the mean duration from initiation to the last remission ranging from 9 to 14 years. A majority attempted to quit; however, most did not use traditional drug treatment in their last attempts. Fewer than 9% of the then-current drug users were treated in inpatient or outpatient settings at the time of data collection.

Conclusions. Most drug abusers who had started using drugs by their early 20s appeared to gradually achieve remission. Spontaneous remission was the rule rather than the exception. Nonetheless, considerable unmet needs existed for those who had continued use into middle age. (*Am J Public Health.* 2001;91:1107–1113)

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Drug abuse, despite its dreadful consequences, is not a terminal condition for most individuals. Nonetheless, the natural history of remission from illicit drug abuse is still not well understood. To fully examine patterns of remission, it is necessary to systematically sample illicit drug users from a community population and follow them over many years. In most long-term follow-ups of abusers of illicit drugs,^{1–4} however, subjects have been recruited through either treatment centers or criminal justice systems. School-based studies that follow cohorts into adulthood^{5–7} have a sampling basis more generalizable than studies in which subjects are recruited from treatment centers or criminal justice systems. For a natural history (nonexperimental and longitudinal) study of abuse of less commonly used illicit drugs such as heroin, however, the expense of a long-term follow-up of a general population sample would be prohibitive. Thus, studies of remission patterns and predictors using community samples have largely been limited to alcohol,^{8,9} cigarette smoking,¹⁰ and marijuana.^{11,12} Although there is a body of descriptive literature on remission from abuse of illicit drugs in community settings,^{13–15} studies employing a systematic assessment of the course of remission for a variety of illicit drugs over a long period of time remain rare.^{11,16,17}

Our 25-year follow-up of a Vietnam War-era cohort, the Washington University Vietnam Era Study Phase III (VES-III), provides such an opportunity with relative economy, owing to oversampling of those addicted to opiates while stationed in Vietnam. Although not a sample of the general population, the veteran population may be considered a general-population sample weighted to a slightly lower socioeconomic status. Vietnam veterans' drug use patterns generally followed those of non-veterans in the same age cohort,¹⁸ except for a slightly increased use of heroin among the veterans.¹⁹ In the present report, measures were obtained separately for sedatives, stimulants, marijuana, cocaine, and opiates to examine

patterns of current and past remission from abuse of a wide variety of illicit drugs covering a 25-year period after baseline interviews in 1972.

Spontaneous remission—that is, remission without the use of traditional treatment programs—is a contentious topic.^{20–22} It is better documented for alcohol-related problems^{22–24} than for abuse of illicit drugs,^{13,25,26} reflecting the greater difficulties in finding people who remit from illicit drug abuse on their own.²⁷ In fact, the original study of this cohort was one of the few epidemiologic studies to document a high level of spontaneous remission from opiates. In the 1972 survey, heroin use before subjects' arrival in Vietnam was reported by 1% of its simple probability sample; this figure rose to 35% during service in Vietnam. While in Vietnam, 20% of this sample reported opiate addiction, with the rate dropping to 1% within 12 months after their departure from Vietnam.²⁸ These findings remain controversial.²⁹

To delineate the nature of remission since 1972, a limited examination of spontaneous remission was attempted by focusing on subjects' most recent remission episodes. Because spontaneous remission implies that existing drug abuse treatment is either unnecessary or ineffective, we further examined whether current or recent use was associated with underuse of services and, if so, whether this underuse was related to a lack of access to the health care system or a failure to receive specialty services. While such an examination does not provide a direct assessment of the role of treat-

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This article was accepted August 23, 2000.

TABLE 1—Characteristics of Washington University Vietnam Era Study Sample

	DEROS-Positive (D+) Veterans ^a	DEROS-Negative (D-) Veterans ^b	Nonveteran Controls ^c	Total
Target sample size	512	431	284 ^c	1227
Interviewed in 1972, n (%) ^e	484 (94.5)	414 (96.1)	.. ^d	898 (73.2)
Interviewed in 1974, n (%) ^{e,f}	309 (60.4)	262 (60.8)	284 (100)	855 (69.7)
Interviewed in 1996–1997, n (%) ^e	323 (63.1)	320 (74.3)	198 (69.7)	841 (68.5)
Demographic Characteristics of Those Interviewed in 1996–1997 (n = 839)^g				
Mean age in 1996 (SD)	46.5 (2.0)	48.0 (4.1)	46.9 (1.6)	47.3 (3.0)
Race/ethnicity, %				
White	62.2	82.5	88.8	76.2
Black	28.5	9.4	6.1	16.0
Hispanic	5.3	5.3	4.6	5.1

^aDEROS-positive (D+) veterans were those whose urine tested positive for opiates, amphetamines, or barbiturates in the Date Eligible for Return From Overseas (DEROS) program. This sample consisted of those who were drawn randomly from the D+ veteran pool of 1400 army enlisted men who left Vietnam in September 1971, and it includes 39 who were also included in the general sample.

^bSelected randomly from the 13760 army enlisted men who left Vietnam at the same time, excluding those who also were selected in the D+ sample.

^cSelected from the Selective Service records of men who had never been in service and matched individually to the “general” sample surveyed in 1974. Because a series of replacements was allowed, the “target sample” could not be clearly defined.

^dNot included in sample.

^ePercentages in parentheses are based on the total target sample for each sampling category.

^fBy design, career soldiers who had been in the military for longer than 3 years and those living in sparsely populated states were dropped.

^gThe demographic characteristics are based on subjects interviewed in 1996–1997 for each sampling category, excluding 2 respondents for whom most data were missing (D+ veterans, n = 323; D- veterans, n = 319; and nonveterans, n = 197).

ment for those who achieved remission, it does allow an assessment of the need for improvement in existing health care systems for those who continue to use drugs into middle age. Assessment of current or recent alcoholism and posttraumatic stress disorder (PTSD) was based on the diagnostic criteria of the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*,³⁰ which allowed comparisons of rates of treatment use by drug users and those with other persistent comorbid conditions.

Methods

Sample

The VES cohort of 1227 men originated from surveys in 1972 and 1974 that were initiated by the White House Special Action Office for Drug Abuse Prevention (Table 1). About half of the veterans in the target sample were randomly drawn from the list of army enlisted returnees in pay grades E1 to E9 who, at the time of their departure from Vietnam in September 1971, had urine tests positive for opiates, amphetamines, or barbiturates as determined by the Date Eligible for Return From Overseas (DEROS) program (DEROS positive, or D+). This D+ population comprised an estimated 10.5% of all 13760 army enlisted returnees in September 1971. The other half of the sample, the general sample of the 1972 survey, was randomly drawn from the same group of army enlisted returnees leaving Viet-

nam in September 1971. For simplicity, 39 D+ returnees who also appeared in the general sample³¹ are included here only in the D+ sample. Thus, D+ veterans (n=512) and DEROS-negative (D-) veterans (n=431) are mutually exclusive. Nonveteran control sample members (n=284) were recruited from Selective Service registrations and individually matched to those in the target general sample of the 1974 survey with respect to draft eligibility, draft board location, age, and education completed by the time their matched veterans entered service.³²

The response rates for the 2 follow-ups reflect design attrition, deaths, failure to locate respondents, and interview refusals. By the time of the 1996–1997 survey (VES-III), 10.5% of the entire cohort was lost through death³³; more than 93% of the surviving members (n=1024) were located. The fieldwork was discontinued after the recruitment goal of 830 interviews was surpassed, resulting in an 82.1% interview rate (n=841). Respondents were in their middle to late 40s at the time of the VES-III surveys (Table 1). Racial composition still reflected that of army enlisted men in 1971, except that the percentage of African Americans was lower in VES-III. This was largely because of a higher death rate among D+ African Americans, who were overrepresented in this category.

Measures

Sources and time periods. With the aid of a detailed life history chart,³⁴ we retrospectively obtained most measures covering the 25-

year follow-up period from the 1996–1997 survey. We obtained the measures of drug and alcohol use and problems by assessing each year beginning with 1972. Successive quit attempts since 1972 were assessed. Use of treatment for drug problems was limited to the most recent treatment. Symptoms of PTSD were assessed with information on onset and duration of symptoms. A general assessment of health care use was followed by an assessment of specific treatments received. Inpatient use of health care was limited to the past 5 years and outpatient use of health care to the past 6 months. Drug use information from the 1972 and 1974 surveys was limited to computing incident cases since 1972 and duration measures since initiation to the most recent remission, as the 1996–1997 survey focused on drug use behaviors since 1972.

Drug use. For each class of drugs, respondents who reported illicit use 5 times or more since 1972 were asked to recall years when they “used drugs most frequently.” For each class of drugs, the remission measures were derived from year-to-year variables, each representing an “on” year (most frequently used) or “off” year (not most frequently used). The on and off years were counted to compute intervals of continuous frequent use and of non-frequent use among those who reported at least 1 year of most frequent use. These measures were considered optimal for assessing remission years because they avoid counting a year as a remission year if the respondent was still symptomatic after a period of experiencing a more severe clinical state; they also avoid defin-

ing a remission as a state of complete abstinence. For each class of drugs, clinical measures that can be compared with the measures of "most frequent use" were obtained from a total of 11 *DSM-IV* criterion symptoms of drug dependence or abuse. The numbers of criterion symptoms, which varied from year to year, were represented by 25 separate measures.

Measures of recent overall drug use were available for all respondents ($n=839$); the measure of drug use over the past 5 years was derived from age at last use for 9 classes of drugs (sedatives, stimulants, marijuana, cocaine, opiates, phencyclidine [PCP], hallucinogens, inhalants, and any other), and the measure of use for the past 3 months was obtained from separate questions about use of stimulants, marijuana, cocaine, opiates, and PCP.

To compute periods of frequent use before 1972, we searched variables from the 1972 and 1974 surveys to obtain measures most comparable to the measures of "most frequent use" in the 1996–1997 survey. Veterans were asked in the 1996–1997 survey about their use in Vietnam of all 5 classes of drugs. This information was used to fill in missing cases for remission and measures of use before 1972. Information on age at initiation was also derived from variables available from the earlier surveys. For cocaine, "any use" was substituted for "frequent use" before 1972, and for marijuana, computation for frequent use before 1972 among comparison nonveterans differed from that among veterans. Consequently, the number of new frequent users of cocaine since 1972 could have been underestimated, and new frequent users of marijuana among nonveterans since 1972 could have been slightly overcounted. (Further details are included in an appendix available from the first author.)

Treatment use. The question "Have you ever intentionally stopped using a drug for 3 months or longer?" was asked of those who reported using a class of drugs 5 times or more, and at least a few times a month at some point since 1972. Subsequent questions were asked about years when quit attempts were made; for the most recent quit attempt, inquiries were made about types of treatment used, including inpatient, outpatient, aftercare, Narcotics Anonymous, other methods, or quitting "cold turkey," defined as a quit attempt without treatment. The timing of the last quit attempt and the last year of most frequent use were used to examine the sequence of quit attempt and remission among users with at least 1 year of most frequent use.

From the health care utilization section of the 1996–1997 survey, up to 4 most recent contacts with health care professionals were compiled to compute the "contact" rates in either inpatient or outpatient settings; treatment

or counseling for drug use, alcohol use, or emotional problems, anxiety, or nerves was used to compute the rates of "treatment provision." The contact rate is the probability of contact with inpatient facilities in the last 5 years and with outpatient facilities in the last 6 months. The conditional rate of treatment provision is the probability of treatment for the specific problem, given a contact with the health care system. The product of the 2 rates yields the percentage treated for substance use or identified psychiatric problems.

Comorbidity

Substance abuse and psychiatric comorbidity are associated with poor prognosis³⁵ and higher rates of treatment use.³⁶ Our ongoing analyses of this cohort have shown the chronic nature of PTSD, as well as its association with drug use continuing into adult life.³⁷ In this report, 3 groups were identified as likely to benefit from specialty treatment: drug users (drug abuse treatment), alcoholic persons with or without drug use who met the *DSM-IV* alcohol dependence or abuse criteria (alcohol abuse treatment), and those meeting *DSM-IV* criteria for PTSD with or without drug use (psychiatric treatment). Although our criteria for individuals potentially needing drug abuse treatment differ from others,³⁸ the inclusion of all current and recent drug users was judged optimal, given the long-term nature of drug use in this cohort.

We obtained *DSM-IV* diagnostic measures for alcohol dependence or abuse for those who met minimum drinking criteria since 1972 (ever having 7 or more drinks in 1 day; 1 or more drinks every day for 2 weeks; 6 or more drinks a day once a week for several weeks) by coding all years in which they experienced each of the *DSM-IV* criterion symptoms. The numbers of criterion symptoms and dependence or abuse measures were obtained for each year.

The *DSM-IV* PTSD measures were assessed separately for traumas that originated during the Vietnam War and for traumas experienced since 1972. The onset and duration years of each symptom were used to compute year-to-year variables of criterion symptoms, from which the diagnostic measures were derived for all years since 1972.

To measure the presence of a specific problem during the periods within which inpatient or outpatient use was reported, we tried to choose durations of drug use, alcoholism, and PTSD that corresponded as closely as possible to the durations of utilization measures. For inpatient care, drug use, alcoholism, and PTSD were measured for the past 5 years. For outpatient settings, 3-month use was available for illicit drugs, and past-year *DSM-IV* diagnoses were computed for alcoholism and PTSD. Relative differences in the contact rate,

the treatment provision rate, and the rate of treatment between those with alcoholism or PTSD with or without comorbid drug use were assessed with the χ^2 statistic for differences in proportions.

Results

Patterns of Remission

As expected, the prevalence rates for use 5 or more times since 1972 were highest among the D+ veterans for all 5 classes of drugs (Table 2). The rates also were higher among D- veterans than among nonveterans for all classes of drugs. When the 3 sampling groups were combined, the proportion who started frequent use in 1972 or later among those with at least 1 year of most frequent use was smallest for opiates (6.6%), in large part because of the high level of veterans' exposure to opiates in Vietnam. In contrast, the proportion was 35.4% among cocaine users. The distributions of incident cases over time showed that, while almost all new cases of frequent opiate use occurred by 1977, new cases of cocaine use appeared up to 1996 (data not shown). The percentage of users in the year before the 1996–1997 survey was highest for marijuana (17.8%) and lowest for stimulants (5.4%).

The mean duration of drug use from first use to the point of continuous remission ranged from 9.1 years for sedatives to 14.1 years for marijuana (Table 2). The largest difference between years of most frequent use and years of remission in the mean number of symptoms of drug dependence or abuse was for opiates (4.32 vs 0.10), and the smallest was for marijuana (1.29 vs 0.06), reflecting the less symptomatic nature of marijuana use in this cohort. The mean percentages of person-years in remission since the first year of frequent use varied from 59.3% for marijuana to 76.5% for opiates. The number of discrete remissions since 1972 ranged from 0 to 5, with the mean ranging from 1.1 for marijuana to 1.5 for cocaine. The mean duration of a discrete remission ranged from 11.1 years for cocaine to 15.0 years for opiates.

Spontaneous Remission

Of those who had at least 1 year of most frequent use since 1972, more than 73% attempted to quit for 3 months or longer. Rates were somewhat higher for sedative users (78.1%) and opiate users (78.7%) (Table 3). Only a minority reported multiple quit attempts, ranging from 17.8% for stimulants to 24.6% for marijuana. When "cold turkey" quit attempts are limited to the most recent (either multiple attempts or single attempts), the lowest percentage is for opiates (55.1%), followed by cocaine (70.5%), stimulants (81.1%), marijuana

TABLE 2—Use and Remission Patterns for 5 Classes of Drugs Over a 25-Year Period, Among Vietnam War Veterans and Controls

	Sedatives	Stimulants	Marijuana	Cocaine	Opiates
Reporting Use 5+ Times Since 1972					
DEROS-positive veterans (n = 323), %	38.7	44.3	72.1	44.6	31.0
DEROS-negative veterans (n = 319), %	15.1	19.8	37.3	14.4	9.1
Nonveterans (n = 197), %	8.1	10.2	26.4	12.7	5.1
No. of respondents with at least 1 year of most frequent use since 1972	183	219	383	209	136
Frequent use starting in 1972 or later, % ^a	32.8	28.8	13.6	35.4	6.6
Frequent use in past year, %	6.4	5.4	17.8	9.0	8.8
Mean duration from first use to last year of most frequent use, y (SD) ^a	9.1 (7.3)	9.6 (7.4)	14.1 (8.8)	10.8 (8.0)	10.5 (8.7)
Mean no. of drug problems in most-frequent-use years/in-remission years ^b	2.44/0.09	2.28/0.09	1.29/0.06	3.14/0.06	4.32/0.10
Mean % of person-years in remission since 1972 (SD) ^c	76.4 (24.6)	76.0 (22.4)	59.3 (34.2)	73.2 (24.8)	76.5 (26.6)
Mean no. of remissions since 1972 (SD)	1.3 (0.6)	1.3 (0.6)	1.1 (0.7)	1.5 (0.6)	1.4 (0.6)
Mean no. of years per remission since 1972 (SD) ^d	14.8 (6.5)	14.6 (6.2)	12.0 (7.7)	11.1 (5.5)	15.0 (7.2)

Note. Data are based on the Vietnam Era Study Phase III (VES-III) sample (n = 839, excluding missing cases). Measures were derived from questions in the 1996–1997 VES-III survey, unless noted otherwise. For definition of DEROS-positive and DEROS-negative veterans, see footnote a to Table 1.

^aComputation of these measures involved variables obtained from the previous 1972 and 1974 surveys and the 1996–1997 survey. Details are provided in an appendix available from the first author.

^bDerived from a total of 11 criterion symptoms to diagnose drug dependence or abuse meeting *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* criteria.

^cThe number of years varied for new cases since 1972.

^dMean of discrete remissions.

TABLE 3—Spontaneous Remission From Abuse of Illicit Drugs Among Vietnam War Veterans and Controls

	Sedatives	Stimulants	Marijuana	Cocaine	Opiates
No. of respondents reporting use 5+ times, with at least 1 year of most frequent use	183	219	383	209	136
At least 1 quit attempt since 1972, % (n) ^a	78.1 (143)	77.2 (169)	73.1 (280)	74.6 (156)	78.7 (107)
Multiple quit attempts among those with quit attempts since 1972, % (n) ^{a,b}	23.8 (34)	17.8 (30)	24.6 (69)	22.4 (35)	24.3 (26)
Last quit attempts that were “cold turkey,” % (n) ^c	84.6 (121)	81.1 (137)	82.5 (231)	70.5 (110)	55.1 (59)
Last “cold turkey” quit attempts associated with continuous remission, % (n) ^{c,d}	90.1 (100)	95.4 (123)	88.3 (188)	95.0 (94)	96.3 (52)

Note. Data are based on those who reported use 5 or more times since 1972 among the sample interviewed in 1996–1997. A “cold turkey” quit attempt means a quit attempt without treatment.

^aIntentional quit attempt lasting 3 months or longer.

^bIncludes those who reported specific sequences of quit attempts and those who reported “too many quit attempts to remember.”

^cOf the most recent of multiple quit attempts, or single quit attempts, lasting 3 months or longer.

^dIncludes those who remitted in the same year as the year of most recent quit attempt and those who stopped frequently using the drug prior to the most recent quit attempt. The denominators (n_d) are those who reported quitting “cold turkey” when attempting to quit most recently, excluding respondents for whom timing information was missing (sedatives, n_d = 111; stimulants, n_d = 129; marijuana, n_d = 213; cocaine, n_d = 99; opiates, n_d = 54).

(82.5%), and sedatives (84.6%). Among those attempting to quit cold turkey, over 95% did not experience frequent use of stimulants, cocaine, and opiates in later years; percentages were lower for marijuana and sedatives (88.3% and 90.1%, respectively). For last quit attempts that reportedly followed the last year of most frequent use, the percentages of those who maintained remission ranged from 33% for stimulant users to 48% for marijuana users (data not shown).

Unmet Needs

The inpatient contact rate during the past 5 years ranged from 41.1% for active illicit drug users to 61.8% for those with PTSD and concurrent active drug use (Table 4). Among those admitted as inpatients, the rate of being treated for their specific problems (drug use, alcohol dependence, psychiatric problems) ranged from 20.8% for drug treatment to 55.3% for psychiatric treatment among those

with PTSD with concurrent drug use. Consequently, 8.5% of drug users received inpatient drug treatment during the 5-year period, but the rates were higher for alcohol abuse treatment and for psychiatric treatment among those with PTSD. Among those with PTSD, the contact rate and the rate of psychiatric treatment provision were significantly higher for those with concurrent drug use than for those without (61.8% vs 42.6% and 55.3% vs 37.5%, respectively). However, comorbidity of alco-

TABLE 4—Unmet Needs for Treatment of Substance Abuse and Psychiatric Problems Among Vietnam War Veterans and Controls

Problems Identified in Past 5 Years	Drug Use (n = 246) ^f	Alcohol Dependence or Abuse (n=161) ^a		PTSD (n = 170) ^{a,b}	
		With Drug Use (n=96)	Without Drug Use (n=65)	With Drug Use (n=76)	Without Drug Use (n=94)
Inpatient					
Hospitalized in past 5 years, % ^c	41.1	51.0	36.9	61.8*	42.6*
Treated for (problem), given hospitalization, % ^d	20.8	38.3	41.7	55.3*	37.5*
Received treatment for (problem), % ^e	8.5	19.8	15.4	34.2*	16.0*
Problems Identified in Past Year	Drug Use (n = 168) ^f	Alcohol Dependence or Abuse (n=81) ^a		PTSD (n = 163) ^{a,b}	
		With Drug Use (n=43)	Without Drug Use (n=38)	With Drug Use (n=53)	Without Drug Use (n = 110)
Outpatient					
Visit in past 6 months, % ^c	50.0	46.5	63.2	56.6	64.5
Counseled/treated for (problem), given visit, % ^d	4.8	10.0	8.3	46.7*	28.2*
Received counseling/treatment for (problem), % ^e	2.4	4.7	5.3	26.4	18.2

^aMeeting *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)* criteria for the specified duration.

^bPosttraumatic stress disorder.

^cReasons for hospitalization or outpatient visit were not necessarily substance abuse or psychiatric problems.

^dTreated for problems for the specific category (drug use, alcohol dependence, psychiatric problems).

^eProduct of hospitalizations/outpatient visits and treatments received. The percentages may not be exact owing to rounding.

^fDrug use measure covered past 3 months.

* $P < .05$ (χ^2).

holism with drug use did not yield differential rates.

Outpatient use patterns during the past 6 months were similar to patterns for inpatient use. The least frequently received category of treatment was drug abuse treatment (2.4%). While concurrent drug use was associated with higher psychiatric treatment use for PTSD patients (46.7% vs 28.2%) among those who used outpatient services, concurrent drug use for patients with alcoholism did not yield higher alcohol treatment (10.0% vs 8.3%).

Discussion

The results were obtained from one of the few long-term studies of illicit drug users who were epidemiologically sampled. They suggest relatively stable patterns of drug abuse and remission over time for all 5 major classes of drugs. Respondents in this cohort used illicit drugs frequently during about 25% of their adult life, extending into middle age. Marijuana had the highest proportion of current users, the longest duration of use, the smallest mean number of remissions, and a remission duration second in brevity only to that for cocaine. However, the active abuse period was characterized by less symptomatic use than for other drugs.

Most drug abusers experienced only a single major quit attempt in their adulthood. Most who attempted to quit did not obtain help

from traditional drug abuse treatment toward the end of their drug use experience. The lowest rate of spontaneous remission was observed for opiates, consistent with well-established pharmacologic treatments for opiate addiction. A substantial proportion of those who successfully quit on their own appeared to have already reduced drug use before the decision to quit.

Those who were still active substance users in midlife infrequently came into contact with the traditional health care system, although their utilization rate was higher than that of the general population.³⁹ Their substance abuse problems often went untreated even when they did come into contact with the health care system. The rate of treatment provision was highest for those diagnosed with PTSD who were also drug users.

This study has some limitations. The results are not generalizable to the entire population of Vietnam veterans, as our cohort represents a later cohort of Vietnam veterans and excludes commissioned officers. Furthermore, more than 10% of the original cohort was lost through premature death. The study results, however, are more generalizable than are long-term follow-ups of illicit drug abusers obtained from treatment or criminal justice systems. The measures used were based on self-reports. Drug use patterns were derived from retrospective reports covering 25 years. Selective recall may have led to remission patterns⁴⁰ appearing more stable than if prospective follow-ups had been

carried out annually. Identification of new frequent users relied on various measures obtained from the 1972 and 1974 surveys. Depending on the threshold level of frequent use, the proportion of new cases differed somewhat. Nevertheless, the trends in new cases were consistent with knowledge of drug availability in Vietnam during the war and in the United States after the war. Even if the durations of short use were forgotten by respondents or underestimated because of complications of case identification, major and distinctive periods of frequent use appear to have been correctly captured. Clear differences in levels of symptoms between the “on” and “off” years support the appropriateness of our measures in assessing remission patterns.

In studies that recruit research subjects from treatment settings, drug addiction is often portrayed as recalcitrant. When a sample is recruited from a community, however, the remission-to-relapse cycle does not appear to be repeated for most drug abusers in their adulthood. Spontaneous remission appears as a rule, not an exception, at the end stage of drug abuse. Our follow-up was not designed to assess efficacy of treatment.^{29,40} Nonetheless, the findings on spontaneous remission are consistent with the view, currently held by some investigators, that drug abuse treatment is most effective for reducing the severity of addiction until drug abusers are ready to change their behaviors.^{41,42} For some users, the cumulative benefits of treatment over time may have led to

less frequent use at the time of last successful remission.⁴³

Other general-population service use studies^{44,45} suggest that our utilization rates may not differ much from rates for those with similar problems in the general population. The lack of increased use of services for those with comorbid alcohol and drug problems was also found in other studies.³⁶ Health care use among illicit drug users in this study was not notably lower than use among those identified as alcoholics. Higher rates of contact and treatment provision for those with PTSD may suggest a higher sensitivity to PTSD among both patients and care providers. The rates were even higher among those with concurrent drug use, suggesting that integrated care for both substance abuse and mental health services could provide cost-effective improvement in care for those with comorbid conditions.

Lower use of drug abuse treatment among drug users, compared with alcohol treatment use among patients with alcoholism or psychiatric treatment use among those with PTSD, primarily was a result of a lower rate of provision of drug abuse treatment, given differential access to the health care system. While it is conceivable that their long history of drug use indicates controlled use, negative measures of well-being such as unemployment, divorce, adverse events, and psychiatric comorbidity were found to be strongly associated with continued drug use.⁴⁶ In our opinion, the spontaneous remission achieved over time by most of the surviving members of our cohort occurred in a context of compromised well-being. Repeated early interventions may have acted to shorten the time to successful remission. Given that detection of drug use problems by nonspecialty service providers is rare in most circumstances, it would be worthwhile to examine how illicit drug abusers in the community come to recognize and disclose their drug problems.⁴⁷ Without insights into drug abusers' thinking and decision making regarding changing their behavior, their needs for intervention may continue to be insufficiently met. □

Contributors

All authors contributed to the conception or design, analysis, and writing of the paper. R. K. Price, the senior author, contributed to all of the activities involved in the project. N. K. Risk and E. L. Spitznagel contributed to the design of the study, construction of measures, and statistical analyses.

Acknowledgments

This study is supported in part by an Independent Scientist Award and National Institute on Drug Abuse research grants (K02DA00221, R01DA07939, R01DA09281) to R. K. Price.

Acknowledgments are due to co-investigators and consultants, particularly Dr Lee N. Robins, principal investigator of the studies of this cohort in 1972 and 1974; Washington University School of Medicine research staff members Keith S. Murray, Jacquelyn A. Mallmann, and Dustin L. Stwalley; St Louis Veterans Affairs Medical Center; St Louis Vet Center; and Research Triangle Institute, NC. The constructive criticisms of 3 anonymous reviewers helped improve the quality of this article substantially. Contributions by the study respondents were by far the most important.

This study has received human subjects approval from an institutional review board, and data were collected with the informed consent of participants.

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