# Is Alcoholism Treatment Effective?

*It's better than nothing, but as health costs rise more refined strategies are called for, and more known about what works for whom*

THE costs of treatment for alcoholism and alcohol-related disorders are approaching 15% of the national health bill—most of it spent on patients who are not diagnosed as problem drinkers (*Science*, 6 March, p. 1132). But as the pervasiveness of drinking disorders has become increasingly recognized, so has the need for research on which of the multitude of treatments available are the most effective, and for whom.

From the standpoint of cost-effectiveness, the chief candidate for critical examination is the lengthy (usually 28 days) inpatient stay that has become the cornerstone of alcoholism treatment in the United States. This is the main feature of the growing number of insurance plans that cover alcoholism, despite the fact that studies have indicated that inpatient programs do not result in any better outcome for the alcoholic population as a whole than does treatment on an outpatient basis.

Alcoholism treatment has evolved into a major industry, particularly within the past few years. But the scientific basis for treatment remains elusive. Early theory and practice developed largely outside the mainstream of medicine, with self-help groups and peer counseling based on the principles of Alcoholics Anonymous (AA). Since 1957, when the American Medical Association officially recognized alcoholism as a chronic and progressive "disease," lay and professional treatment approaches have become increasingly intermingled. This has resulted in a "haphazard mixture of largely unvalidated approaches" in the words of Enoch Gordis, director of the National Institute on Alcohol Abuse and Alcoholism (NIAAA).

The picture is beginning to change, though. Most attempts at scientific treatment have been based on a unitary concept of alcoholism as a disease, and, says one NIAAA official, the goal has been to find a "magic bullet" that will work with all (or most) alcoholics. As the heterogeneous nature of alcoholism and alcohol abuse is increasingly recognized, the focus has turned to identifying characteristics that will predict whether a patient will benefit from treatment, and to "matching" particular patients to particular treatments.

Alcoholism is now seen by most experts as a "final common pathway" arrived at through a multitude of factors including genetic vulnerability, environmental stresses, social pressures, psychiatric problems, and personality characteristics. Although advanced chronic alcoholics look very much alike, the course of the disorder is by no means uniform or predictable. Physical deterioration, physical and psychological dependency, behavior changes, and general dysfunctionality progress at different rates for different people. Drinking patterns vary widely. Some, for example, may drink alcoholically for a period and then revert to normal drinking. Some are compulsive drinkers from the beginning; others take decades to become dependent on the drug. As Thomas McLellan of the Philadelphia Veterans Administration Hospital says, "absolutely anything you want to say about alcoholics is true about some of them and not true about all of them."

***"Absolutely anything you want to say about alcoholics is true about some of them and not true about all of them."***

That also applies to the treatment of alcoholics, a subject teeming with conflicting opinions. Whether or not alcoholism should be called a disease is still debated. Some see the "medical model" at war with the nonprofessionalized "social model" in which recovering alcoholics help each other. Some say that an alcoholic to stay sober must make fundamental changes in his attitudes and relationships (as implied in the principles of AA), whereas others believe that intervention to alter specific behaviors is sufficient. Many insist that abstinence is the only "cure" for an alcoholic, while some contend that controlled drinking is a more realistic goal for some problem drinkers.

Many of these differences are more theoretical than real because, in practice, comprehensive treatment programs offer a great variety of services such as education, psychotherapy, relaxation training, vocational counseling, family therapy, AA, antidepressants, and Antabuse. But what are the "active ingredients" in these wide-ranging programs? The literature is rife with treatment studies, but they have produced little definitive knowledge other than that treatment is better than no treatment for those who stay with it for a reasonable amount of time.

Assessing treatments is fraught with difficulties: the attrition rate in all programs is extremely large—probably over 50%—and no one knows what happens to the dropouts. Controlled comparisons are difficult because, says Gordis, little is known about "the natural history of the untreated alcoholic." Self-reports of drinking behavior are notoriously unreliable, and no biological test exists to verify reports of abstinence. Short-term follow-ups may be misleading because someone who resumes drinking may quit later. It is difficult to say whether an outcome measure is a measure of treatment effectiveness or a measure of motivation.

Some of the most noteworthy studies of recent years seem to reveal more about what is not known than what is known. The famous Rand studies of controlled drinking in the 1970s, for example, in which only a small fraction of subjects were able to moderate their alcohol intake, cast that approach in disrepute. But they did not demonstrate whether controlled drinking is a feasible goal with a carefully selected sample of drinkers whose problem had not become severe.

As for inpatient versus outpatient treatment, a recent much-cited study concluded that treatment setting has no bearing on outcome. Authored by William R. Miller of the University of New Mexico, the paper, in the July 1986 *American Psychologist*, reviewed 26 controlled comparisons and concluded that they "have consistently shown no overall advantage for residential over nonresidential settings, for longer over shorter inpatient programs, or for more intensive [meaning cost-intensive] over less intensive interventions. . . . "

Another review, by Helen Annis of the Addiction Research Foundation in Toronto, concluded that lengthy inpatient programs showed no better success than brief hospitalization, "partial hospitalization" (day treatment) programs, or outpatient programs.

The mystery of "what works" was strikingly evidenced by a famous earlier study, published in 1977 by Griffith Edwards and colleagues of Maudsley Hospital in London. Edwards took a group of 100 married male alcoholics and subjected half of them to several weeks' inpatient treatment, followed by counseling sessions held over the period of a year. The other half had a single "advice" session with their wives and a counselor, followed by monthly check-up calls from a counselor to the wife. At the end of a year the outcomes were not significantly different. Fifty-nine percent of the "advice" group and 63% of the "treatment" group reported "improvement"—usually reduction, not abstinence—in drinking (ratings by the wives were 39 and 50%, respectively). The authors concluded that "rather minimal treatment intervention is as effective as a more intensive regimen. . . . " They also noted that "patients in both groups were generally rather unimpressed by any helping intervention other than the initial counseling. . . . "

Annis says that "one of the disappointments over the past 10 years" has been that neither the intensity nor the type of treatment is a good predictor of success with unselected groups of problem drinkers. What has emerged, rather, is that, as the Institute of Medicine put it in a 1980 report: "the best predictor of patient outcome is the patient."

This does not imply that all treatment is equally effective; rather, it has become clear that much treatment research fails to find differential effectiveness because different types of patients have been clumped together in study populations. As the Office of Technology Assessment stated in a 1983 report, most treatment research is "flawed because the effects of treatment variables cannot be distinguished from the effects of patient variables."*

Characterizations of patients have been oversimplified in the past, with primary reliance often being on measurements of the severity of alcohol abuse. But this, as it turns out, is not as important as other factors such as employment status, marital status and social stability, and degree of preexisting psychopathology.

For example, McLellan in Philadelphia has reported that a group of 460 alcoholics and 282 drug addicts was divided according to the severity of their psychiatric symptoms (the major categories are personality disorders and affective disorders—anxiety and depression), and subjected to six different treatments. The 15% in the "most severe" category did poorly in all treatments, which

**Helen Annis.** *Neither the type nor intensity of treatment is a good predictor of outcome with unselected groups of drinkers.*

ranged from residence in a therapeutic community to methadone maintenance, whereas the "least severe" group did well in all the treatments.

Similarly, Marc Schuckit of the San Diego Veterans Administration Hospital says the best predictor is the "primary diagnosis." Alcoholics with minimal abuse of other drugs and alcohol abusers whose history suggests a primary diagnosis of depression did considerably better in treatment than primary drug abusers or substance abusers with a diagnosis of antisocial personality. (Depression is far more amenable to psychiatric treatment than are personality disorders.)

Researchers say we now have a fairly good picture of who will do well, regardless of the treatment: people with jobs, stable relationships, minimal psychopathology, no history of past treatment failures, and minimal involvement with other drugs. Programs specially designed for impaired physicians, for example, seem to have very high success rates, according to the AMA.

Most alcoholics, of course, do not fall in this favored category. Methodology is now developed to the point where meaningful research can be done on matching patients to treatment. This has been facilitated by refinements in diagnostics—for example, the psychiatric Diagnostic and Statistical Manual in 1980 took alcoholism out of the "personality disorder" category and created two categories: "alcohol dependence" and "alcohol abuse." This permits an alcohol-related diagnosis that includes more reliance on behavior changes and not as much on physical dependency. A number of reliable questionnaires have been developed for uniform assessment of drinking problems. Treatment manuals offer guides for uniform treatment for some kinds of psychotherapy. Measures of outcome have also become more sophisticated, with a variety of factors covering general life functioning and well-being replacing a single-minded focus on drinking behavior.

Some programs already try to fashion treatment programs according to the needs of the individual. A jobless person will get vocational counseling, for example, or inpatient referrals will be limited to those with severe medical or psychiatric problems or when a patient needs to be removed from a destructive environment. But at present, says Thomas F. Babor of the University of Connecticut School of Medicine, "there are no generally accepted models for differentiating among patients."

As evidence accumulates that treatment setting is not a crucial variable, more needs to be done to determine what are the most powerful elements in the variety of treatment regimens available. The future of alcoholism treatment lies in the realm of behavior change rather than pharmacology, in McLellan's opinion. Antabuse (disulfiram), which can make a drinker violently ill, is an effective deterrent, but only for those who are motivated to take it. Gordis would like to see the development of a drug that blocks alcohol craving, as methadone does for heroin, but as experience with addicts has demonstrated, this would be no more than a useful treatment adjunct. If biological craving were the primary cause of excessive drinking, the average alcoholic would be home free after a few months of enforced sobriety.

The field is clearly in need of more refined treatment strategies based on a better understanding of the needs of individual drinkers. Research on Alcoholics Anonymous, which is by far the most widely used recovery program, would provide invaluable information on what helps what kinds of alcoholics stay sober, but AA does not like to have researchers around, and the shifting population in any case is difficult to follow.

Meanwhile, costs of inpatient rehabilitation continue to rise but insurers are reluctant to move away from their traditional emphasis on inpatient coverage in absence of better data on what works. Inpatient detoxification (usually a week or less) is also a routine practice, despite research indicating that more than 90% of alcoholics can be safely detoxified in a nonmedical setting.

In other countries, particularly England, Canada, and Australia, there is growing emphasis on attempting minimal interventions and outpatient-based care with problem drinkers, with hospital referral only for

*"The Effectiveness and Costs of Alcoholism Treatment," Office of Technology Assessment, Washington, DC, March 1983.

medical complications or after other approaches have failed. In the United States, though, inpatient facilities for alcoholism treatment are on the increase. According to Miller of New Mexico, "the financial interests of alcoholism treatment providers . . . run precisely counter to the directions that seem wise and prudent in light of current research evidence." Offering alcoholism rehabilitation is an excellent way for general hospitals to fill surplus beds, although sometimes outpatient programs are more comprehensive as well as more appropriate. There has also been a rapid proliferation of nonhospital-based for-profit organizations, which are turning the treatment of substance abuse into big business, with some charging up to $10,000 a week for residential programs. These organizations engage in sophisticated advertising oriented to the very people who may do just as well in outpatient programs. Services for family members of alcoholics are also becoming quite elaborate—Susan Blacksher of the California state program reports that she has even heard of beds being offered for "the disease of co-dependency." (Close relatives develop their own syndromes of maladaptive behavior in response to long-term living with an alcoholic, which has led to alcoholism being labeled a "family disease.")

Despite the turbulence and uncertainties in the field, the picture for alcoholism treatment is getting brighter. The quality of research is getting better as substance abuse has gained in legitimacy as a scientific field, and although available funding is still disproportionately very low, the money situation has been improving. The research budget for NIAAA has gone up by 145% in this decade (the proposed fiscal 1988 budget is $68.9 million). The government is putting increased emphasis on refining treatment research—a grant announcement issued last fall calls for new pilot projects addressing treatment regimens, treatment settings, and client classification. And, the National Academy of Sciences, in response to the new drug abuse law passed last year, will conduct a 2-year study on alcoholism treatment.

The increasingly public nature of the problem is leading to a more realistic apprehension of the insidious and varied ways alcohol problems can creep up on people. Higher success rates because of earlier intervention—in the old days most alcoholics were in an advanced state of deterioration by the time they got to a hospital—have taught people that alcoholism is not the hopeless disease many have thought. The search for a "magic bullet" has given way to recognition that the disorder is as complex as the person who suffers from it. ■

CONSTANCE HOLDEN

# The Navy After Lehman: Rough Sailing Ahead?

*Navy Secretary John Lehman presided over a major buildup of the fleet but critics charge that there may not be enough money to equip and operate all those new ships; dissent did not flourish in Lehman's Navy*

SECRETARY of the Navy John Lehman announced last month that he will step down after six contentious and eventful years in office. His tenure has been marked by controversy over the Navy's ambitious shipbuilding program, its aggressive, offensively oriented war-fighting plans, and Lehman's own hard-charging, bare-knuckled administrative style.

Lehman's chief accomplishment was overseeing an impressive naval buildup, reversing a decline in the size of the fleet that began after World War II and reached its low point in the mid-1970s. During the Carter Administration, the fleet stabilized at around 470 ships, but the 1980 Republican platform called for a 600-ship Navy. Lehman, 44, a brash and outspoken former member of Henry Kissinger's National Security Council staff, made this goal the Navy's own when he became the service's civilian chief in 1981.

"America must regain . . . command of the seas," Lehman told Congress in 1982, and his vigorous advocacy of U.S. maritime superiority helped usher in an era of unprecedented prosperity for the Navy. Its budget for purchases of ships, submarines, aircraft, and weapons increased more than 10% per year (before inflation) from 1981 to the present. The fleet has now reached 557 ships, and Navy officials say that the 600-ship Navy, including 15 aircraft carriers, will become reality by 1990.

Lehman's success in pushing through the fleet buildup, however, may come back to haunt his successor, ex-Marine James Webb. According to some analysts, the Navy ordered more ships than it can afford to support and outfit. As the Pentagon feels the bite of fiscal austerity, Webb will be hard pressed to cope with worsening shortfalls in manpower, maintenance, and ammunition that could cripple the fleet.

According to a 1985 study by the Congressional Budget Office, the Navy will require annual budget increases of at least 3% above inflation—possibly 6 to 8%—if it is to maintain its expanded fleet.

The Navy, in its own study of the issue, used revised numbers that reflected a slowdown in modernization plans, and arrived at a much lower estimate. According to the still unreleased study, Navy goals could be achieved with 1 to 2% real budget growth. Other analysts, however, say that neither study took adequate account of cost increases that result from the increasing complexity of new weapons. They warn that timely replacement of ships in the future will probably require annual real increases of at least 6 to 8%, and possibly more.

**John Lehman.** *His goal of a 600-ship Navy could be realized by 1990.*

If the defense budget does not rise above inflation during the next few years, as seems likely, the Navy will need to abandon at least some of its ambitious goals. According to outside analysts, the Navy could accept a smaller and older fleet, or permit the fleet to be hobbled by cuts in funds for manpower, fuel, ammunition, and repairs.

So far, the Navy shows few signs of willingness to scale back shipbuilding plans. Lehman has dismissed pessimistic budget forecasts in the past as defeatist and self-fulfilling, say former Navy officials. "John's