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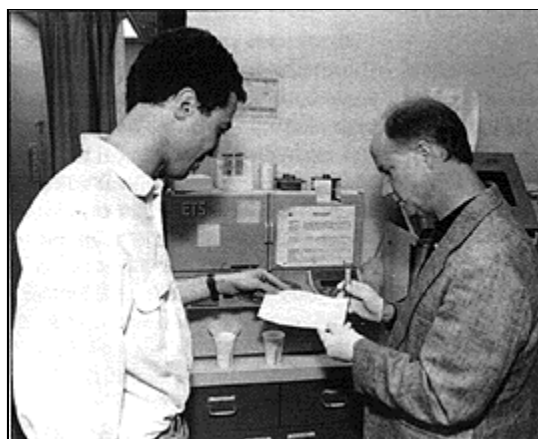
## Voucher System Is Effective Tool in Treating Cocaine Abuse

By **Michael D. Mueller**, NIDA NOTES Contributing Writer

One of the biggest challenges in treating cocaine abuse is getting cocaine abusers to stay in treatment long enough to take the first difficult steps toward recovery. However, the voucher-based approach developed by Dr. Stephen Higgins and his colleagues at the University of Vermont may help cocaine abusers take those vital first steps.

"This voucher-based strategy that has come out of Vermont represents important progress," says Dr. John Higgins, NIDA program officer overseeing this research. "The vouchers help hold cocaine abusers in treatment."

The Higgins approach allows cocaine abusers to build up points during outpatient treatment. The points, earned from providing urine specimens that test negative for cocaine, are recorded on vouchers, which can be exchanged for items that promote healthy living. These items include YMCA passes and continuing education materials.



*Dr. Stephen Higgins (right) gives a patient a voucher that can be exchanged for items that promote healthy living. The voucher, similar to the one shown further down the page, is earned with urine specimens that test negative for cocaine.*

"Cocaine abusers never receive cash-only vouchers," emphasizes Dr. Higgins. "The patients and counsel on the items to be purchased with the vouchers."

Urine specimens are collected three times a week, and the vouchers increase in value the longer the person abstains from cocaine. Patients receive bonus vouchers at the end of the week if all three urine specimens have tested negative.

Cocaine is highly addictive; 1 to 2 million Americans are dependent on it. Up to 80 percent of cocaine abusers complete treatment programs, according to Dr. Higgins.

Further, Dr. Higgins points out, "The demand for cocaine abuse treatment is so large, and the environment of the addiction process so powerful, that we must find ways to help cocaine abusers on an outpatient basis. We can't treat them in the hospital, but then they return to their home communities, where they face old influences and alternatives and skills to withstand the lure of cocaine."

The voucher-based system creates an alternative, builds coping skills, and strengthens social relationships. The program involves more than regular urine tests and vouchers for points. It also includes intensive counseling, job training, employment, recreation, relationships, skills training, and structuring the day. Family and friends are involved in the counseling process. Patients who are alcohol dependent are also given Antabuse therapy to treat their dependence.

Thus, the Higgins approach to treating cocaine dependence focuses on behavior, creating paths for behavior change, rewarding positive change, and strengthening social relationships that reinforce healthy choices. The program has several parts, but the voucher piece seems particularly strong, notes Dr. Higgins.

To many, stacking vouchers against cocaine addiction is like pitting David against Goliath. However, the vouchers have proven to be more effective than expected.

|   |
|---|
| <p>This voucher certifies that _____<br/>has received _____ points today, to equal<br/>a total of _____ points to date.</p> <p>Date: _____ Staff Signature: _____</p> |
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"It surprises many people that a stack of paper can outweigh the powerful urge to use cocaine," says Dr. Higgins. "The voucher system makes sense in terms of what we know about why people use drugs. Also, cocaine users reach a point where they need help."

The key to the success of the vouchers is that they have a "reinforcing effect" that competes with the urge to use cocaine. They are an alternative that is available immediately, but only if cocaine is not used. This is the theory that drives the treatment strategy.

Cocaine produces powerful reinforcing effects. When cocaine abusers use cocaine, the drug acts directly on areas of the central nervous system, which makes the user want to use cocaine again, often producing cycles of repeated use or "binges."

The voucher, on the other hand, is reinforcement for not taking cocaine. Although the dollar value of the voucher is not great, the value of this alternative, immediate reinforcer can be quite high.

"Many areas of research support the concept of alternative reinforcement as important to preventing and reducing cocaine abuse," observes Dr. Higgins. "Quite simply, reinforcement is a basic principle of human behavior. When discussing cocaine use, we're talking about behavior that is very sensitive to its consequences."

Cocaine abuse is not guided by a moral compass or free will. The drug acts on "reward centers" in the brain. Some researchers believe that the effects of cocaine on these reward centers are just as powerful as the effects of sex, notes Dr. Higgins.

Dr. Higgins and his colleagues are searching for ways to apply these principles of behavioral pharmacology to cocaine abuse treatment.

Dr. Higgins is quick to point out that, "Though cocaine is a powerful reinforcer, its use is context-dependent. The lifestyles of cocaine abusers are in such a state that their natural reinforcers for healthy behavior are often unavailable."

"Cocaine abusers, and especially 'crack' abusers, often come from deprived environments," he says. "Many inner-city neighborhoods provide an almost ideal environment for cocaine to exert its powerful reinforcing effects. We need to develop prosocial alternatives."

"We need to work toward creating environments in which those reinforcing effects are less powerful-in which there are positive, drug-free alternatives."

Dr. Higgins and his colleagues began researching the voucher-based strategy in 1990. First, they compared the voucher-based package to a more traditional outpatient counseling program in a study of 28 cocaine abusers over a 24-week period. The more traditional program operates on the premise that cocaine abuse is a treatable disease; it includes individual counseling, lectures, videotape presentations, self-help sessions, and working with a sponsor.

Eleven of the 13 patients assigned to the behavior change program completed 12 weeks of treatment, compared to 15 patients in the traditional program. The researchers found that patients in behavioral treatment had longer periods with cocaine-free urine. The findings were much the same for a subsequent study of 38 patients over 24 weeks.

Next, Dr. Higgins narrowed his research to the voucher part of the treatment program. He found that 90 percent of the voucher group completed a 12-week treatment program, compared to 65 percent in the no-voucher group. At 24 weeks, 75 percent in the voucher group, versus 40 percent in the no-voucher group, completed treatment. To achieve continuous cocaine abstinence, the voucher group averaged 11.7 weeks; the no-voucher group, 6 weeks.

Recently, the researchers reported on a followup of patients who took part in the 24-week study. Cocaine abstinence was evaluated 3 months and 6 months after the completion of the 24-week program. Again, the voucher-based package produced significantly greater cocaine abstinence than the more traditional approach.

Although the findings are encouraging, Dr. Higgins and others caution that most research to date has been conducted with males in Vermont, a rural State. Further studies are needed to determine the effectiveness of the voucher program over longer periods of time and among women, urban populations, and other cultural groups.

Dr. Higgins' research results are supported by those of Dr. Kenzie Preston of NIDA's Division of Intramural Research Programs.

Dr. Kenneth Silverman of Johns Hopkins University, and their colleagues, who found that the voucher s effective in treating inner-city cocaine abusers. (See [Inner-City Cocaine Abusers in Baltimore Respond Based Treatment](#))

"An immediate application of the voucher approach-which has demonstrated its short-term effectiveness reduce cocaine abuse among pregnant women," suggests Dr. Higgins. The voucher-based intervention c healthier newborns. It would also be cost-effective, as neonatal intensive care units are extremely expen.

Some observers question the acceptability of "paying" cocaine abusers not to use cocaine. In answer, Dr "We don't view it as paying them to do the right thing. No cash changes hands. We are finding ways to p alternative positive reinforcement. We combine the vouchers with behavioral therapy so that when the v gone, the individual can then find support for a cocaine-free lifestyle among his or her natural resources.

Dr. Higgins' academic training dovetails with what he learned about drug abuse during his youth in Phil. up around a lot of drug abuse. What I saw on the streets agrees with the scientific studies that tell us that we should be doing to give young people alternatives to cocaine," he says.

"We need to look for forms of alternative reinforcement or incentive programs that can be used in comm he continues. "Perhaps local merchants would be willing to contribute goods and services. Access to spc coaches are examples of healthy alternatives. We need to think creatively."

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