

## How Much Do Federal Agencies Really Spend Combating Drug Use?

Congress created the Office of National Drug Control Policy (ONDCP) in 1988 to ensure that federal agencies are following a coordinated, coherent strategy to control drug use and that they are spending enough money to execute that strategy. To facilitate this, dozens of federal agencies annually identify the drug-related portions of their budget requests. The director of ONDCP, the nation's "drug czar," must certify that the requests are sufficient to carry out the strategy. He has not, however, had an independent means of verifying that they accurately reflect the resources the agencies devote to drug control activities. To fill this gap, the ONDCP asked RAND to review the methods used by ten federal agencies in estimating their drug control budgets.

DPRC researchers found that three of the agencies had developed methods that appeared to accurately represent the portion of their resources devoted to anti-drug programs. The Coast Guard uses a timekeeping system, the Bureau of Prisons bases its estimates on the percentage of prisoners sentenced for drug offenses, and the Department of Defense accounts for the military assets dedicated to anti-drug activities.

Three other agencies take approaches that are valid in concept but flawed in execution. The FBI uses a timekeeping system in one of its units but relies on judgment and extrapolation to estimate the bulk of its efforts. The Department of Veterans Affairs (VA) identifies the number of its patients suffering from drug ad-

diction but counts within its antidrug efforts all medical care directed to those patients, whether or not it is relevant to their drug use. The Department of Education also counts monies not specifically devoted to drug control.

The other four agencies were the Immigration and Naturalization Service, the Substance Abuse and Mental Health Services Administration (SAMHSA), the U.S. Customs Service, and the Health Care Financing Administration. These agencies base their drug control estimates on some mixture of educated guesses, arbitrary assumptions, expert judgment, and old data.

The DPRC researchers were able to estimate the degree of inaccuracy in three of the agency estimates—those for the Department of Education, the VA, and SAMHSA. They found that, taken together, these three agencies overestimated their antidrug expenditures for fiscal year 1998 by as much as \$1.2 billion. The discrepancies ranged from 25 percent to 66 percent of the actual amount. It is of particular interest that all of these budgets fall within the minority of the federal anti-drug effort devoted to reducing the demand for drugs (through prevention or treatment) rather than that reducing supply (interdiction). These three overestimates alone would reduce by more than 20 percent the \$5.4 billion the federal government purportedly spent on prevention and treatment.

RAND recommended that ONDCP get the agencies to correct their estimating methods by ensuring that they are based

on current data and are comprehensively and consistently applied across the agency. To get the most out of this effort, ONDCP should work with the agencies to see that those involved in similar activities use similar means to estimate their budgets.

The DPRC researchers recognized that preparing better estimates would be more costly. However, agencies do not need to institute a comprehensive timekeeping system or have all grantees track their spending to improve their budget estimates. In many cases, it should be sufficient to sample different parts of the agency in different years. Furthermore, the gain from better estimates is likely to be worth the cost. They will help ensure that the notion of a national drug control strategy is not simply an empty exercise and that the funds to accomplish it are actually requested. In addition, they should help agencies in their broader efforts to measure performance and to manage and plan their activities. ■

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# Getting More Substance Abusers into Treatment

## DIRECTORS' MESSAGE



DPRC codirectors Audrey Burnam and Martin Iguchi

When people think about reducing the demand for illicit drugs in the United States, they are more likely to think of prevention programs offered in the schools than of treatment as a drug use reduction alternative. Although treatment's success rates are quite low, research at DPRC has shown that, for cocaine and other drugs not now in the initial stages of an epidemic, treatment can be more effective at reducing consumption *per dollar spent* than prevention.

Therefore, treatment should be part of any effort to reduce the demand for drugs. Unfortunately, there are several barriers to treatment for drug users, e.g., capacity, location, convenience, cost, and incarceration. Many of the DPRC's projects, as outlined in this newsletter, aim at reducing barriers to treatment.

U.S. treatment capacity is currently quite limited. The Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that, in 1996, 9.4 million Americans needed treatment for drug abuse problems, and that only about 2 million—one in five—received it. Even in locations with adequate

treatment availability, the wait to be admitted can last from days to weeks. Better tracking of how much federal agencies actually spend on combating drug use (as discussed in the first article) could lead to increased treatment capacity.

Additionally, many treatment facilities are in poor, inner-city locations, where gang activity and fear of violence limit access. Others are in out-of-the-way places, poorly served by public transportation. (One of us used to run a treatment program, and not surprisingly, two strong predictors of whether people stayed in the program were how far they were from the clinic and whether they had a valid driver's license). While everyone acknowledges the need for treatment programs, few want such programs located near them. However, two innovative programs have overcome such attitudes. In Baltimore, a bus brings treatment to drug abusers in their own neighborhoods. The treatment agencies involved established a unique partnership with churches in higher-risk communities that allowed the mobile facility to park in their lots. In another effort in Rancho Cucamonga, California, the Matrix drug treatment program provides adolescents with drug treatment in collaboration with the YMCA, where participation in treatment comes with the additional incentive of free access to the Y's facilities.

Capacity and location are not the only elements to take into account when trying to get more people through drug treatment. Convenience is another factor. Those seeking treatment while employed often find it difficult to locate treatment that does not conflict with work hours. And people with children face even more difficulties in having to choose between treatment and other fundamental life responsibilities and schedules. In some instances, overcoming the barriers to treatment entry involves simple changes. For example, we were once faced with a 50 percent no-show rate for intake appointments at our crack cocaine treatment program. We found that we could increase the rate of kept appointments to approximately 80 percent by decreasing the wait between first contact and admission to treatment. And the extra people admitted were no less serious about treatment: The rate of attrition following intake did not rise.

Another notable barrier to treatment is cost. Those without insurance or some form of public assistance face serious financial barriers. In Jersey City and Newark, we demonstrated that eliminating the initial cost barrier dramatically increased the likelihood of an individual's entering treatment. We distributed over 5,000 coupons redeemable for free

## Substance Abuse and Assault Victimization Among the Homeless

methadone treatment to injection drug users. More than half of the recipients brought in their treatment coupons and entered treatment. About half of those who redeemed coupons had never been in treatment before.

Lastly, bringing treatment to those involved with the judicial system is another important area for consideration. We reviewed many drug courts around the country for a project sponsored by the National Institute of Justice, and we found numerous reasons for optimism. The imposition of criminal justice sanctions for continued drug use and the possibility of reduced or eliminated sanctions as a reward for abstinence appear to provide powerful motivation for treatment participation. Society may also substantially benefit in that drug use may be decreased without having to pay the costs of imprisoning thousands of nonviolent offenders.

Besides those in the judicial process, there are large numbers paroled each year with continuing substance abuse problems. In California, over 150,000 felons were released or reinstated on parole in fiscal year 1998–1999. Approximately 28 percent had been convicted for a drug offense. Reentry courts with mandatory drug abuse treatment have been suggested and may hold considerable potential for decreasing the large number of people who undoubtedly return to drug use in their communities.

Again we return to the need for sufficient capacity. We have to be careful that those *voluntarily* seeking treatment are not deprived of the opportunity because all slots are filled with individuals mandated to be there. ■

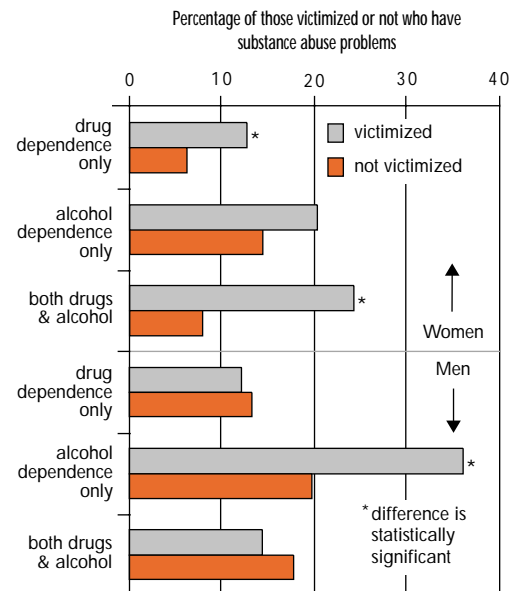
A strikingly common hazard experienced by the homeless is being raped or otherwise physically assaulted, and substance abuse appears to play an important role in increasing vulnerability to victimization. These are the principal conclusions of RAND and UCLA researchers who studied the correlation between rape and health indicators in homeless women and analyzed the antecedents of physical and sexual assault in homeless women and men. The two sets of analyses draw from data collected for studies that rank among the largest and most conclusive yet conducted of the homeless. They have important implications for the delivery of social services to this vulnerable population.

The researchers found a correlation between rape victimization among homeless women and lifetime drug abuse or dependence.<sup>1</sup> Sixty-three percent of the homeless women raped during the preceding year suffer from drug abuse or dependence, while 46 percent of homeless women who were not raped suffer from drug abuse or dependence. The corresponding percentages for alcohol abuse or dependence were 50 and 38. Those abusing or dependent on drugs were more likely to have been raped than those not; the same was true for those using drugs during the past 30 days. Other health indicators associated with victimization were major depression and schizophrenia.

In the second set of analyses,<sup>2</sup> 23 percent of homeless women and 21 percent

of homeless men reported being physically or sexually assaulted in the month prior to the interview. Out of the homeless women who had been victimized, 13 percent had been diagnosed as dependent on drugs (but not alcohol) within the previous six months. Of those not victimized, only 6 percent had been so diagnosed (see

Substance Abuse Correlates for Victimized Women Differ from Those for Victimized Men



first two bars in the figure). The corresponding rates for dependence on both drugs and alcohol were 24 percent and 7 percent (third pair of bars). Women dependent on both alcohol and drugs were more likely to have been victimized than women dependent on neither—and more likely than men dependent on both or neither. For men, the relevant connection was to alcohol dependence: 36 percent of victimized men had been diagnosed as dependent on alcohol (but not drugs), compared to 20 percent of nonvictimized men (fifth set of bars). Other factors associated with victimization in the full sample included ethnicity (Latinos are at greater risk), sleeping outdoors, having earned some money, and schizophrenia.

The researchers proposed two possible explanations for the association between substance abuse and victimization in the homeless: Substance abuse may make in-

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<sup>1</sup>Suzanne L. Wenzel, Barbara D. Leake, and Lillian Gelberg, "Health of Homeless Women with Recent Experience of Rape," *Journal of General Internal Medicine*, in press.

<sup>2</sup>Suzanne L. Wenzel, Paul Koegel, and Lillian Gelberg, "Antecedents of Physical and Sexual Victimization Among Homeless Women: A Comparison to Homeless Men," *American Journal of Community Psychology*, in press.

dividuals more vulnerable to attack, and substance abuse may occur disproportionately in more-dangerous areas. The researchers recommended that clinicians seeing homeless women for sexual assault be alert to the benefits these women may gain from being screened and treated for drug use. Conversely, researchers recommended that those seeing such women for substance abuse be aware of the potential gains from assault screening and referral. Clinicians should be aware of the differences between women and men in their substance abuse patterns and their vulnerabilities. Finally, the study suggests that, because of the influence of exposure factors such as sleeping outside, policies to reduce victimization of the homeless must go beyond a focus on individual characteristics such as substance abuse and address the housing issue.

These analyses were the first to link victimization of the homeless with substance abuse in a multivariate context and the first to break out alcohol abuse for separate consideration. The first of the two studies drew on a survey of 974 homeless women in 60 shelters and 18 meal programs in Los Angeles County. The second was based on data collected during RAND's Course of Homelessness Study, one of the few studies to date to rely on a representative sample of the homeless in a given area and to be able to track the homeless for reinterviews. The latter achievement was important, since the study's primary purpose was to characterize the movement of persons between the homeless and housed populations. The Course of Homelessness Study included some 4,200 persons sampled from shelters, meal programs, and the streets in Los Angeles's Skid Row and Westside. Data from roughly half of those persons were available for the analysis summarized in the figure. The research on homeless women and assault victimization was funded by the Centers for Disease Control and Prevention, the National Institute of Mental Health, the Agency for Healthcare Research and Quality, The Robert Wood Johnson Foundation, and The Commonwealth Fund. ■

## What Makes Drug Courts Succeed or Fail?

Drug courts are among the fastest growing elements of the criminal justice system. Subsidized by \$33 million in funds disbursed pursuant to the 1994 federal crime act, over 700 drug courts are now in operation by local jurisdictions across the country. Persons eligible for this alternative are typically those arrested for a drug-related offense and perhaps some property crime, but not a violent offense. Such persons are diverted from the traditional criminal justice system before or after conviction (i.e., plea, in most cases). They are instead routed through a judge-supervised rehabilitation program typically involving urine testing, referral to substance abuse treatment, and, ideally, other social services. The offender must return to court regularly to verify progress.

Drug courts have generated considerable enthusiasm, partly because of the savings that can arise from the reduction in prison space required for offenders diverted before sentencing, and partly because of evaluations demonstrating rehabilitative success. However, there are several reasons to keep such enthusiasm partly in check for a while. First, drug courts, at their current level of funding, can take only a small fraction of potentially eligible offenders. To date, only about 200,000 persons have participated in drug courts, while approximately 350,000 persons *per year* are convicted of drug *felonies* only. Second, most of the evaluations conducted to date have lacked rigor. Evaluations yielding favorable results have usually been based on a retrospective comparison of drug court graduates with otherwise similar offenders who were not diverted through drug courts. The omission of nongraduating drug court participants biases the results in favor of drug courts both in terms of their effectiveness at rehabilitation and their monetary savings. Moreover, few evaluations have even sought information on participant arrests after graduating, and there is essentially no information on postgraduation drug use. Finally, drug courts vary greatly in their procedures, so

the success of one court does not necessarily imply success for others.

Given the rush toward this innovation and the scarcity of sound research yielding generally applicable findings, the National Institute of Justice funded an evaluation of a nationwide sample of drug courts. The study was awarded to the DPRC.

The first phase of this work is now complete. It entailed describing the structure and process of 14 drug courts and assessing the feasibility of a rigorous outcome evaluation. The DPRC researchers reviewed internal evaluations of the drug courts; examined data archives and management information systems planned or in place; and interviewed local judges, court administrators, prosecutors, defense attorneys, service providers, and drug court evaluators.

One product of the study was a conceptual framework for characterizing variation among drug courts on the basis of five dimensions. These dimensions are seen as likely "active ingredients" of drug courts, i.e., aspects that may account for their degree of success in reducing recidivism and relapse to drug use. The dimensions are as follows:

- *Leverage (what happens to participants who fail)*. Drug courts may be more effective when noncompliant participants face more-serious consequences (such as prison) upon discharge from the program.
- *Population severity*. The population may be hardcore addicts with long offense histories (one extreme), lightweight offenders whose offense history is short and nonviolent and whose drug use is "recreational" (the other extreme), or a mix. Drug courts may be more effective when the offender population is not so enmeshed in a drug-and-crime lifestyle.
- *Program intensity (what participants have to do to stay in the program)*. Program requirements always include urine testing, court appearances, and drug abuse treatment. Other obligations, such as employment, suitable housing, completion of a high school equivalency program, and payment of

finer or restitution, may also be imposed. More-intensive programs may be more effective, but also more costly.

- *Predictability.* Drug courts may be more effective when participants know what the court's expectations are, believe their behavior will be detected by the court, and know with high probability how the court will respond to their behavior.
- *Emphasis placed on rehabilitation (as opposed to other court functions, including case processing and punishment).* This dimension takes on particular significance in light of legal philosophies known as restorative justice and therapeutic jurisprudence, in which criminal justice is viewed more as a therapeutic tool and less as a punitive one. To a greater or lesser degree, most drug courts reflect these philosophies. Drug courts more strongly committed to a rehabilitation philosophy may be more effective.

In current and future work, the DPRC researchers will be collecting data by which to rate drug courts on these dimensions and developing procedures to ensure that ratings are reliable. The researchers will also collect data on what happens to participating offenders (chiefly rates of program completion, recidivism, and relapse to drug use). Further analyses will then show systematic comparisons of effectiveness across drug courts with different structural and process characteristics. This will permit conclusions about which drug court models are the most successful and how drug courts not using those models can improve. It will also allow an estimate of how much might be gained by widespread use of successful models and how much that would cost. ■

## Update

### **ALERT PLUS: Helping High School Students Resist Drugs**

Responding to the growing national problem of adolescent drug use and to the failure of previous programs to curb it, the Conrad N. Hilton Foundation asked RAND in 1983 to identify promising strategies to address the problem. With

further support from this foundation, a RAND team led by Phyllis Ellickson designed a drug-use prevention program embodying the preferred strategy. The program was called Project ALERT (Adolescent Learning Experiences in Resistance Training).

Project ALERT is based on the theory that adolescents turn to drugs because of social influences (peers, media, etc.) and their own desires to appear more mature or independent. The ALERT curriculum thus was designed to motivate young people to avoid drug use and to help them identify and resist these pressures.

Project ALERT was tested in seventh- and eighth-grade classrooms in California and Oregon. It was found to prevent initiation of marijuana use among students who had not already begun smoking marijuana or cigarettes and to reduce cigarette smoking among those who had experimented with tobacco.<sup>3</sup> The curriculum, which was equally effective in low- and high-minority schools, has since been implemented in all 50 states. Subsequent evaluation found, however, that the project's beneficial middle-school effects do not last into high school.<sup>4</sup> A companion program, ALERT PLUS, has thus been created with the intent of extending these effects.

The ALERT PLUS curriculum includes lessons in the ninth and tenth grades. The curriculum targets marijuana, cigarettes, and alcohol, plus less-prevalent substances such as cocaine or other stimulants, depressants, hallucinogens, and heroin. It continues the ALERT focus on developing and reinforcing motivations not to use drugs. In addition to helping students work on their resistance skills, the program includes techniques for quitting drug use, for dealing with particular high-risk situations (such as pressure to drink and drive),

and for coping with stress. Parents participate through home learning activities.

The ALERT PLUS evaluation is now under way in South Dakota and involves 6,000 students in 60 schools. It is funded by the National Institute on Drug Abuse and led by DPRC researchers Doug Longshore and Phyllis Ellickson. Schools were sorted into "clusters" (high schools and middle-school feeders), which were randomly assigned to ALERT, ALERT PLUS, and control conditions. The study's test group were students who were seventh graders in 1997–1998. Their drug use is being tracked annually for five years by means of confidential self-report surveys. Students in ALERT schools have received the seventh- and eighth-grade lessons. Those in ALERT PLUS schools received these same lessons, received the new ninth-grade lessons during the school year just completed, and are slated to receive the tenth-grade lessons next year. Finally, schools in the control group were wait-listed to become ALERT/ALERT PLUS schools. Control students in the study's test group receive no ALERT or ALERT PLUS lessons (they continue to receive the drug-related curriculum already taught at control schools).

The baseline (pre-ALERT) survey in 1997 found that use of tobacco and alcohol was already widespread among South Dakota's seventh graders. For example, 36 percent reported lifetime use of tobacco; 22 percent reported smoking in the past year. Fully 60 percent reported lifetime experience with alcohol, and 31 percent reported having had alcohol in the past year. Marijuana and inhalant use was uncommon (7 percent and 10 percent lifetime, respectively). Rates of cocaine, amphetamine, and other hard drug use were quite low (under 2 percent).

We are using teacher surveys, on-site classroom observation, and periodic debriefings with teachers and observers to monitor implementation. The survey data show that implementation has been strong. For example, in the seventh grade, 89 percent of lessons were fully delivered (that is, all activities were completed; in the eighth grade, the corresponding figure is 87 percent). ■

<sup>3</sup>Phyllis L. Ellickson and Robert M. Bell, "Drug Prevention in Junior High: A Multi-Site Longitudinal Test," *Science*, Vol. 247, pp. 1299–1305, March 16, 1990 (more fully reported in Ellickson and Bell, *Prospects for Preventing Drug Use Among Young Adolescents*, R-3896-CHF, RAND, 1990).

<sup>4</sup>Phyllis L. Ellickson, Robert M. Bell, and Kimberly McGuigan, "Preventing Adolescent Drug Use: Long-Term Results of a Junior High Program," *American Journal of Public Health*, Vol. 83, No. 6, pp. 856–861, June 1993 (available from RAND as RP-208).

## New Projects

### **Drug Abuse, Violence, and HIV/AIDS Among Impoverished Women**

We report above on research linking substance abuse and victimization for homeless women. In new DPRC work funded by the National Institute on Drug Abuse (NIDA), RAND community psychologist Suzanne Wenzel will search for relationships between these problems and HIV/AIDS among impoverished women—homeless or housed. She and her colleagues will also examine the effects of these problems on physical health and injuries, health service utilization, and psychological distress. The plan is to interview and assess the health of 840 women of diverse racial/ethnic status between the ages of 18 and 62, then repeat these visits 12 months later for the same women. Half the sample will be chosen from randomly selected homeless shelters and the other half from low-income housing units. Sixty of the women will be interviewed in more detail about their victimization experiences; this will be done before the full-sample interviews and health assessments and are intended to provide more detail on victimization and ensure that the full-sample interview protocols are valid and comprehensive. At the end of the project, eight focus groups will be convened to help frame feasible community and policy interventions for impoverished women. Each focus group will include two each of homeless women, housed women, community experts, and policymakers.

### **Substance Abuse and Sexual Risk Among HIV-Positive Adults**

Most new cases of HIV are a result of sexual transmission between an HIV-negative and an HIV-positive person. The focus of prevention efforts has so far been on changing the behavior of HIV-negative people who are at risk rather than that of HIV-positive people who can transmit to others. A better understanding of sexual risk behaviors of HIV-positive people may offer new opportunities for prevention. Research on people at risk for HIV infection consistently shows

a relationship between substance use and sexual behavior, including high-risk sex. It is not known whether a similar relationship holds among people who are HIV-positive, and little is known about the underlying reasons for the relationship between substance abuse and sexual behavior in people who are HIV-negative. In a new two-year study funded by NIDA, a RAND research team led by Rebecca Collins will examine sexual risk behavior, substance use, and the basic processes underlying these behaviors in a national sample of over 1,400 adults receiving health care for HIV. Subjects are participants in the ongoing, separately funded HIV Cost and Services Utilization Study. As part of this study, detailed information has been collected about participants' sexual risk-taking, including their own and their partners' use of alcohol and drugs before or during sex. Behaviors intended to reduce risk were also measured. Detailed information is also available on substance use history and dependency, sensation-seeking, depression, and post-traumatic stress disorder. Investigators in the new study will analyze all these variables to test whether sex-related motives, attitudes, and beliefs moderate the relationship between substance use and sexual risk.

### **Economic Costs of Marijuana Use**

It has been about ten years since the social costs of alcohol and cigarette use were quantified. These costs are often cited when new alcohol and cigarette taxes, regulations, or use-reduction programs are proposed. Analogous information on illicit drugs could be useful in judging the cost-effectiveness of current or new laws or programs directed against them, but such information is not yet available. A DPRC research team funded by NIDA and led by Rosalie Pacula will evaluate the determinants of regular marijuana use and abuse and the effects of this use and abuse on educational attainment, crime, and health care utilization. Where effects are identified, the social and private costs involved will be estimated. Efforts will be taken to control for concurrent use of other substances, particularly alcohol and

cigarettes, so that it will be possible to identify effects that are clearly attributable to the consumption of marijuana. When possible, the researchers will identify public policies that are successful at either discouraging the use of marijuana or minimizing the social cost associated with its use.

### **A National Database on State Programs Combating Teen Drug Use**

Programs to reduce teen substance use vary greatly across the 50 states. States might learn a great deal from each other's experience in implementing and evaluating these programs. The Robert Wood Johnson Foundation has funded a policy research partnership called ImpacTeen to help make these experiences available through an online database. The database is divided into three sections—tobacco, alcohol, and illicit drugs. Under Rosalie Pacula's leadership, DPRC is working with Andrews University to create the illicit-drug database. This section of the database is the most challenging because, in contrast to the others, there is no predecessor database on which to build. The illicit-drug database will track pertinent legislation in all states and the District of Columbia. It will draw upon available information on the implementation and enforcement of these laws, as well as on the social, political, and economic environment in which they take place. It will also contain analyses of available data on the effectiveness of policies and environmental factors at reducing teen drug use. The goal is to create an aid for policymakers and analysts who wish to evaluate the effects of particular state and local policies or proposals on youth illicit-drug use and its harmful consequences.

### **HIV Prevention for Crystal Methamphetamine Users**

Since the late 1980s, use and abuse of the street drug methamphetamine, popularly known as "crystal," have increased dramatically, especially in the western United States. Methamphetamine use and abuse occurs disproportionately among gay and bisexual men. Evidence suggests that its

use in this population is associated with an increase in high-risk sexual activity and consequently with an increased risk of HIV transmission. Successful treatments for methamphetamine dependency have not been demonstrated, and innovative approaches to modify methamphetamine use and associated sexual behaviors are urgently needed. In a new NIDA-funded DPRC study, David Kanouse and his colleagues will develop and test an intervention among 120 HIV-positive and -negative men who have used crystal methamphetamine in the 30 days prior to recruitment for the study. Participants will be recruited from one or more large bathhouses in Los Angeles and through supplemental sampling of co-drug-using partners. The intervention will comprise a seven-session treatment course focusing on harm reduction. The research team will assess behavior through questionnaires prior to treatment, on completion of the intervention, and three months later. Additional behavioral measures will be obtained during the intervention. Evidence of change in risk-related behavior and other indicators of success will be used to assess whether the intervention's potential warrants rigorous evaluation in an experimental trial.

### **Cost-Effectiveness of School-Based Drug Use Prevention Programs**

Last year, the DPRC released *An Ounce of Prevention, a Pound of Uncertainty*, in which Jonathan Caulkins and his colleagues sought to estimate the cost-effectiveness of school-based prevention programs in reducing cocaine consumption. As indicated by the title, the estimates were very uncertain, but they furnished some basis for comparison with DPRC's earlier estimates of the cost-effectiveness of enforcement and treatment strategies. All of this work was limited to reduction in cocaine consumption as a measure of merit. School-based prevention, however, is also directed to reducing marijuana, cigarette, and alcohol consumption, and many such programs seek to reduce all substance use. *An Ounce of Prevention* thus included some rough estimates of cost-effectiveness in relation to the addi-

tional substances. In a new project sponsored by The Robert Wood Johnson Foundation, Caulkins and his colleagues are refining these estimates.

### **Rio Hondo DUI Court Experiment**

In 1998, there were almost 50,000 arrests for driving under the influence (DUI) in Los Angeles County. This problem has resisted a variety of strategies undertaken to solve it, including incarceration, mandatory treatment, and driver's license suspension or revocation. Despite these sanctions, about a third of the county's DUI arrests are of repeat offenders. Various jurisdictions are now turning to DUI courts, a new approach that began receiving U.S. Department of Justice support last year. DUI courts take an approach similar to that of drug courts (see article on page 4). Participants are required to make progress in a treatment plan under the supervision of a judge. DPRC researcher Andrew Morral is evaluating such a program in the Rio Hondo district of Los Angeles County. Second- and third-time DUI offenders are eligible for participation in the experiment. The choice to participate is left to the offender. Nonparticipants are handled as they would have been by the criminal justice system. Participants are randomly divided into two groups: Half go to DUI court, and half do not but receive criminal justice sanctions somewhat less burdensome than nonparticipants. Both the court group and the comparison group must still pay substantial fines, and the court group must also pay for treatment beyond a standard series of Alcoholics Anonymous meetings required of all participants and nonparticipants. However, jail time for the court group is greatly reduced. Results of the experiment will be evaluated after two years. Participants will be interviewed and their driving and criminal records obtained in a search for further DUI arrests and other outcomes. The Rio Hondo study is funded by the National Institute on Alcoholism and Alcohol Abuse. ■

### **Testimony at Legislative Hearings**

In the past year, DPRC researchers have offered testimony before Congress on the following topics:

- What we know and don't know about the likely effects of decriminalization and legalization of drugs (Robert MacCoun, House Subcommittee on Criminal Justice, Drug Policy, and Human Resources).
- Comparing the cost-effectiveness of federal mandatory minimum sentences and other federal enforcement programs (Peter Reuter, House Subcommittee on Crime).
- Effects of coverage parity for substance abuse treatment on the costs of private insurance plans under managed health care (Roland Sturm, House Subcommittee on Criminal Justice, Drug Policy, and Human Resources).
- How the Substance Abuse and Mental Health Services Administration helps communities allocate treatment resources (Martin Iguchi, House Subcommittee on Criminal Justice, Drug Policy, and Human Resources).
- Drug treatment alternatives to incarceration (Martin Iguchi, House Subcommittee on Criminal Justice, Drug Policy, and Human Resources).



*The year's social highlight was a reception and dinner for DPRC Board members and friends, hosted by Board member Judith Willis (above, left, with DPRC researchers Martin Iguchi and Susan Everingham) at her home in Washington, D.C. Former codirector Jonathan Caulkins talked about the importance of cost-effectiveness analysis in setting drug policy and DPRC's contributions in this area.*

## New People



**Kathryn Anderson** joined the DPRC as a research assistant in February after a year of work as a wilderness therapeutic counselor at an adolescent treatment facility in the White Mountains. She received her B.A. in psychology from Wesleyan University in 1997, where her research focused on the effects of bystander intervention on the expression of prejudice and on the relationship between “locus of control” beliefs and prejudice toward obese people. Kathryn’s interests include urban planning, environmental policy, and the anthropological implications of economic globalization. At RAND, she is currently working on a study of substance abuse and mental health services under Medicaid managed-care programs; a project on drug abuse, violence, and HIV/AIDS in impoverished women; and a pilot effort to organize a research agenda on narcotics-supply-control aid to Colombia.



**Susan Paddock** joined RAND as an associate statistician last October after receiving her Ph.D. in statistics from Duke University. Her doctoral work focused on developing and applying non-parametric Bayesian statistical methods for prediction, nonlinear regression, and flexible modeling of multivariate data.

These methods require fewer assumptions than more-typical (parametric) statistical methods. Since coming to RAND, Susan’s work has included assessing substance abuse prevalence and need for treatment in California, evaluating the cost-effectiveness of model school-based drug prevention programs, and examining the relationships between risky sexual behavior and substance use.



**Joan Tucker** came to RAND from Brandeis University, where she was an assistant professor teaching social psychology and health psychology. She received her Ph.D. in social psychology from the University of California, Riverside, in 1993. Her research background includes work on predictors of smoking initiation and cessation, psychosocial and behavioral influences on healthy aging, and the social and interpersonal context of health behaviors. Joan’s current research interests include predictors of smoking initiation and cessation during adolescence, the effects of drug use on families, the interpersonal context of substance use and HIV risk behavior, and social influences on health behaviors across the lifespan. Since coming to RAND in August 1999, Joan has been working on two projects funded

by the National Cancer Institute—a test of theories of adolescent smoking risk and an investigation of patterns of tobacco use from adolescence to young adulthood. She is also examining the history of drug use and sexual risk behaviors among HIV-infected individuals who are also seriously mentally ill; this work is funded by the National Institute for Mental Health (NIMH).



**Glenn Wagner** joined RAND last year as an assistant behavioral scientist after several years on the staff of the New York State Psychiatric Institute. Glenn received his Ph.D. in clinical psychology from St. John’s University in 1995. Glenn’s overall research interests are in the development of mental-health and quality-of-life interventions for people with serious medical illness. His research to date has primarily involved evaluating mental-health interventions, both psychopharmacologic and psychological, for HIV populations. He is currently involved in two HIV-medication adherence studies. The first, funded by NIMH, is assessing whether electronic monitoring and patient diaries are simply tools for measuring adherence or adherence interventions as well. In the second, funded by the National Institute for Drug Abuse, he is primarily examining levels and predictors of adherence among active drug users who are HIV-positive. ■

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## New Publications

Here we briefly summarize selected works by DPRC researchers that have been published within the past 12 months. Some studies represent projects undertaken in collaboration with other institutions or carried out before the researcher's arrival at RAND. See the article, "Substance Abuse and Assault Victimization Among the Homeless," on page 3 for additional citations.

► M. Douglas Anglin, Douglas Longshore, and Susan Turner, "Treatment Alternatives to Street Crime: An Evaluation of Five Programs," *Criminal Justice and Behavior*, Vol. 26, No. 2, June 1999, pp. 168–195.

The criminal justice system has sought more-effective means of reducing recidivism among the increasing number of drug-involved offenders. One intervention approach in use since the early 1970s is "treatment alternatives to street crime" (TASC), which facilitates treatment for drug-using offenders as part of an overall strategy to control drug use and associated criminal behavior. Anglin, Longshore, and Turner review the evolution of TASC and report findings from an evaluation of five TASC programs. The evaluation found favorable effects of TASC programs on offenders' drug use. Findings on criminal recidivism were mixed and difficult to interpret.

► Doris A. Behrens, Jonathan P. Caulkins, Gernot Tragler, and Gustav Feichtinger, "Optimal Control of Drug Epidemics: Prevent and Treat—But Not at the Same Time?" *Management Science*, Vol. 46, No. 3, March 2000, pp. 333–347.

The authors hypothesize that, because drug use and associated problems evolve, the most effective antidrug interventions should also vary with the passage of time. To test this hypothesis, they improved the DPRC's *Controlling Cocaine* model by making drug use initiation dependent on the number of persons already using. In running the modified model, they found that the effectiveness of prevention and treatment depends critically on the stage

of the drug epidemic. Prevention is the better choice earlier in the epidemic when there are fewer heavy users, and treatment is more effective later; there is only a brief transition period when one does not have a strong advantage over the other. The authors also found that the total social costs of a drug epidemic increase dramatically if control is delayed.

► Ricky N. Bluthenthal, Alex H. Kral, Lauren Gee, Elizabeth A. Erringer, and Brian R. Edlin, "The Effect of Syringe Exchange Use on High-Risk Injection Drug Users: A Cohort Study," *AIDS*, Vol. 14, No. 5, 2000, pp. 605–611.

One of the purposes of syringe exchange programs for injection drug users is to reduce the incidence of syringe sharing. Do such programs achieve this intent? Bluthenthal and his colleagues gave semiannual HIV testing and counseling for four years to 340 injection drug users in San Francisco who were sharing syringes at the outset of the intervention. These users were interviewed at the beginning and end of the four years. Those reporting participation in a syringe exchange program at the end of the intervention were more likely to have stopped sharing syringes than those who had not reported participation at the beginning or the end. These analyses controlled for potentially confounding factors.

► Ricky N. Bluthenthal, Jennifer Lorvick, Alex H. Kral, Elizabeth A. Erringer, and James G. Kahn, "Collateral Damage in the War on Drugs: HIV Risk Behaviors Among Injection Drug Users," *The International Journal of Drug Policy*, Vol. 10, 1999, pp. 25–38.

Under the punitive approach taken to control drug use in the United States, drug users have been disqualified from Supplemental Security Income (SSI) and syringe ownership has been criminalized. Bluthenthal and his colleagues interviewed injection drug users in the San Francisco Bay area before and after the stricter SSI eligibility rules took effect to determine the influence of these policies on drug-related harms. From multivariate analysis of the results, the researchers inferred that

loss of SSI was associated with participation in illegal activities, more frequent drug injection, and sharing of syringes. Those who reported being concerned about arrest for carrying drug paraphernalia were more than half again as likely to share syringes than those not concerned.

► Rebecca L. Collins, Phyllis L. Ellickson, and Robert M. Bell, "Simultaneous Polydrug Use Among Teens: Prevalence and Predictors," *Journal of Substance Abuse*, Vol. 10, No. 3, 1999, pp. 233–253.

Use of two or more substances in combination is a particularly dangerous form of drug use that appears to be established by late adolescence. The prevalence and predictors of such drug use among youth have not been well established. Collins, Ellickson, and Bell address this issue by examining the data from the RAND Adolescent Panel Study of participants in the Project ALERT evaluation. They find that 29 percent of 12th-graders on the panel had engaged in simultaneous polydrug use—typically, alcohol in combination with marijuana—in the past year. Predictors of such drug use for tenth-graders include a prodrug environment and beliefs, social deviance, and family disruption. Broader drug use prevention might cut down on use of alcohol with marijuana, but simultaneous use of harder drugs might be reduced only with lower drug supply.

► Phyllis L. Ellickson and Kimberly McGuigan, "Early Predictors of Adolescent Violence," *American Journal of Public Health*, Vol. 90, No. 4, April 2000, pp. 566–572.

The past 15 years have been marked by periods of upsurge in youth violence at all levels of intensity, from murder down to hitting someone. Yet, while factors predicting later delinquency have been examined, little attention has been paid to predictors of violent behavior in particular. Ellickson and McGuigan examine the Project ALERT database to determine what characteristics of seventh-graders and their environments determined violent behavior five years later. Predictors include deviant behavior, poor grades,

early drug use, peer drug use, weak bonds with school, and a school environment marked by high cigarette and marijuana use. Some predictors vary by gender. These various predictors suggest targets for interventions intended to prevent violence later in adolescence.

► Jeannette M. Jerrell and M. Susan Ridgely, “Impact of Robustness of Program Implementation on Outcomes of Clients in Dual Diagnosis Programs,” *Psychiatric Services*, Vol. 50, No. 1, 1999, pp. 109–112.

Drug treatment success may depend not only on the approach taken but on how faithfully it is implemented. This may be particularly important for clients who also have severe mental illness. Jerrell and Ridgely draw from a previous study they conducted of the cost-effectiveness of three types of treatment—behavioral skills training, a 12-step recovery model, and intensive case management. They report analyses to determine whether the success of these treatment options is related to the degree to which their core elements have been implemented. Clients receiving robustly implemented behavioral skills training or intensive case management exhibited higher psychosocial functioning and lower costs for services than those in analogous but less fully implemented programs.

► Douglas Longshore, “Help-Seeking by African American Drug Users: A Prospective Analysis,” *Addictive Behaviors*, Vol. 24, No. 5, 1999, pp. 683–686.

Previous studies suggest that sense of ethnic identity among African Americans may enhance health, but the mechanism by which this occurs has been uncertain. Longshore analyzed data from a sample of African Americans held in Los Angeles city and county jails and having drug problems. The sample was interviewed at recruitment into the study and again two years later. Help-seeking was significantly more likely for those with a better sense of both their ethnic identity and their drug problem—and with more formal education.

► Andrew R. Morral, Daniel McCaffrey, and Martin Y. Iguchi, “Hardcore Drug Users Claim to Be Occasional Users: Drug Use Frequency Underreporting,” *Drug and Alcohol Dependence*, Vol. 57, 2000, pp. 193–202.

Self-reports of drug use frequency are central to treatment outcome evaluations, estimates of the prevalence of heavy use, estimates of treatment need, and other questions directly relevant to drug policies. Nevertheless, surprisingly little is known about the validity of these reports. Morral, McCaffrey, and Iguchi compare rates of positive urinalyses inferred from

self-reports by methadone maintenance clients with actual positive rates. They focus on those clients reporting no more than ten days a month of heroin use or cocaine use. They find that in half these heroin cases and one-fifth these cocaine cases, frequencies must actually have been more than ten times a month.

► Peter Reuter, “Drug Use Measures: What Are They Really Telling Us?” *National Institute of Justice Journal*, April 1999, pp. 13–19 (available from RAND as RP-834).

For the past 15 years, the available indicators on drug use and abuse have been telling a confusing story. Household self-report data show declining drug use among the general population, while drug-related emergency room admissions are up. Reuter outlines the purposes, strengths, and weaknesses of these and other drug use measures and shows how the different measures can be interpreted to tell a coherent story if their varying objectives are taken into account. Prevalence of drug use among the general population,

#### Accolades

We are pleased that work by two associates of DPRC received national recognition within the past year. Last November, former DPRC codirector Jonathan Caulkins was given the Kershaw Award and Prize by the Association for Public Policy Analysis and Management in recognition of research conducted for DPRC. The award is given every other year to someone younger than 40 who makes distinguished contributions to the field of public policy analysis.

Then, in December, the Project ALERT drug use prevention program (see story on page 5) pioneered by DPRC researcher Phyllis Ellickson was named a model program by the federal Center for Substance Abuse Prevention. It was one of only four such efforts at the middle-school level to be so designated.



Our year began with our tenth-anniversary celebration last June at the Santa Monica Museum of Flying. Advisory Board Chair Lovida H. Coleman, Jr. (left), with founding codirectors Peter Reuter and Barbara Williams, who received plaques honoring their long association with the DPRC.

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for instance, can follow a different trajectory than the experience of the small minority of heavy users, whose serious health problems account for most drug-related ER admissions.

► Gail L. Zellman, Robert M. Bell, Carol Archie, Helen DuPlessis, Jill Houbé, and Angela Miu, "Physician Response to Prenatal Substance Exposure," *Maternal and Child Health Journal*, Vol. 3, No. 1, March 1999, pp. 29–38 (available from RAND as RP-868).

Little attention has been paid by health care providers to the prevention or early detection of prenatal substance exposure, despite such providers' potential for reducing that exposure or preventing its consequences. Zellman and her colleagues surveyed obstetricians and those pediatri-

cians seeing babies within 24 hours of birth to examine physician responses to suspected prenatal substance exposure and the reasons for those responses. More than 70 percent of these physicians reported having suspected prenatal exposure; of those, more than 80 percent said they consistently took some action in response, e.g., getting a substance use history or running a tox screen. Those who did not respond cited various reasons for not doing so, the most frequent being lack of sufficient evidence to confirm their suspicions. ■

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## 2000 Speaker Series

### Science and Drug Policy

The Science and Drug Policy Speaker Series provides a forum for decisionmakers and scientists to discuss policies concerning drug supply, demand, and control.

April 12 10:30 am	The Scientific Temper, Scientific Results, and Drug Policy	Mark Kleiman, UCLA
May 2 12:00 pm	Systems Analysis of Drug Problems: What the Next Generation of Models Should Consider	Jonathan Caulkins, RAND
May 24 10:30 am	Effects of Tobacco Prevention Programs and Policies on Youth	Mary Ann Pentz, USC Medical School
June 29 12:00 pm	Drug Policy and the Mantra of Science	Peter Reuter, University of Maryland
August 22 12:00 pm	Assessing Alternative Legal Regimes for Marijuana	Rob MacCoun, UC Berkeley
September 26 10:30 am	Did Research Influence National Drug Control Policy?	John Carnevale, formerly of ONDCP
October 24 10:30 am	Advances in the Science of Drug Abuse and Addiction: Implications for Policy and Practice	Alan Leshner, NIDA
November 28 10:30 am	Use of ADAM Data in Drug Policy Analysis	Dana Hunt, Abt Associates
January 25, 2001 12:00 pm	Factors Influencing the Transfer of Research-Based Treatments into Application	Richard Rawson, UCLA
February 15, 2001	Topic forthcoming	Constance Weisner, UC San Francisco

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For more information, call Nelie Gill at (310) 393-0411, ext. 6330. ■

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