not explicitly rely on behavioral science to validate this aim. Unfortunately, the prevalence of drug use in the country has declined very little. The long-term efficacy of different treatment programs for illicit drugs is also debatable but smoking cessation efforts have been quite successful both on a national level and in individual programs. This paper will consider what psychologists and other behavioral investigators might contribute to the drug policy debate.

SUPPLY REDUCTION, DEMAND REDUCTION, AND HARM REDUCTION: POLICY RESPONSES. Dr. Robert MacCoun, Graduate School of Public Policy, University of California at Berkeley, Berkeley, CA.

While the supply reduction emphasis of the Reagan-Bush years has left many of our most serious drug problems intact, it is difficult to frame a "slam-dunk" argument that a shift in emphasis to demand reduction will dramatically change the picture—prevention and treatment effects are significant and probably cost-effective, but modest in size. Thus, many have concluded that we should be debating legalization vs. prohibition. After spending several years examining the content of this debate (via a content analysis of 20 years of op-ed essays) and the relevant empirical data (the criminological literature on deterrence, historical data, and cross-national data on European experiences), I believe that there is simply no compelling basis for predicting whether potential increases in use would be small enough to be compensated for by the reduction in drug-related crime. Moreover, public reaction to the Surgeon General's recent comments underscores the political resistance to legalization in mainstream America. However, the legalization debate is not the only alternative to the supply demand debate. A more profitable debate might incorporate the harm reduction perspective that is rapidly evolving in Western Europe and Australia. I will contrast this approach to traditional American supply and demand reduction, and offer an integrative framework that shows the conditions under which European-style harm reduction complements or conflicts with American-style use reduction.

SYMPOSIUM

Assessment and Medications for Treating Attention Deficit Disorders and Comorbidities.

Chair: *Thomas E. Brown*, Department of Psychology, Yale University, New Haven, CT.

ASSESSMENT OF ADDs: DSM IV AND BEYOND. Thomas E. Brown, Department of Psychology, Yale University, New Haven, CT.

Revised diagnostic criteria for ADDs have just been published in DSM IV. These criteria, intended to apply to children, adolescents and adults, recognize ADDs with and without hyperactivity and incorporate some symptoms not previously included in ADD diagnoses. Recent research has proposed an expanded model of core symptoms in ADDs and has documented high levels of comorbidity between ADDs and other disorders of learning, language, mood, anxiety and substance abuse (Biederman, et al., 1991, 1993, Brown & Gammon, 1993).

Although many of the diagnostic instruments available for assessment of ADDs were designed primarily to measure disruptive behavior disorders in hyperactive children, some measures useful for assessment of cognitive and behavioral impairments in ADDs have been developed. This presentation will review assessment tools and techniques for ADD symptoms in children, adolescents and adults; it will also address problems of differential diagnosis and measurement of effects of medications.

MEDICATIONS FOR UNCOMPLICATED ADDs IN CHILDREN, ADOLESCENTS & ADULTS. Walid Shekim, Department of Psychiatry, UCLA Neuropsychiatric Hospital, Los Angeles, CA.

Medications for children with ADDs have been extensively studied; there has been less research on pharmacological treatments of ADDs in adolescents and adults. Available research offers some guidelines for use of psychostimulants as first-line interventions for ADDs at all age levels, but there appears to be wide variation among patients as to what dose and timing of doses is most effective. Published mg/kg guidelines seem to overmedicate some patients while undermedicating others; many specialists now use absolute dose methods to titrate maximally effective doses. This presentation will discuss choice of stimulants and effective dosing strategies for patients of all ages whose ADDs are not complicated by comorbid disorders.

About 20–25% of ADD patients do not respond fully to stimulant treatment; some get no response, some get only partial response, and others experience intolerable side effects. For these patients alternative medications, e.g. tricyclic antidepressants or selective serotonin reuptake inhibitors, may be helpful in alleviating behavioral symptoms and associated mood problems, but these tend to be less effective for sharpening focus and improving concentration or other cognitive ADD symptoms. Recent research has demonstrated that some ADD patients who do not respond fully to stimulants or these antidepressants sometimes benefit from using stimulants and an antidepressant in combination. This presentation will review research on these alternative and combined medication treatments for uncomplicated ADDs.

MEDICATIONS FOR ADDs WITH COMORBID AGGRESSION. Robert D. Hunt, Department of Psychiatry, Vanderbilt University, Nashville, TN.

Epidemiologic studies indicate that at least 50% of children diagnosed with ADHD also have comorbid oppositional defiant disorder and/or conduct disorder, both of which include significant problems with aggression. High rates of conduct disorder are also reported in longitudinal studies of ADHD adolescents (40%) while anti-social personality disorder is reported (40%) in some studies of ADHD adults. Clinical studies indicate that children with ADHD and comorbid aggression often have very poor outcome.

Stimulant medications have been reported effective for ADHD patients with aggression, though the "roller coaster" effects resultant from the relatively short half-life of stimulants may cause other problems. Tricyclic antidepressants have been used successfully with some aggressive ADHD patients. Selective serotonin reuptake inhibitors (SSRIs) have been found useful for some with this comorbid combination, but clinical reports suggest that some very aggressive ADHD patients initially respond well to SSRIs and then

experience exacerbation of aggression after 1-3 months of treatment.

Clonidine, especially when combined with stimulants, has been used successfully with some "hyperaroused" ADHD patients. One special population for which clonidine has demonstrated effectiveness is for very young children, preschoolers and primary grade students, who are extraordinarily aggressive and hyperactive.

This presentation will discuss pharmacological interventions for ADDs with aggression in the context of a neurobiological model of brain function in various subtypes of ADDs.

MEDICATIONS FOR ADDs WITH COMORBID ANXIETY DISORDERS &/OR LEARNING DISORDERS. Rosemary Tannock, Department of Psychiatric Research, Hospital for Sick Children, Toronto, Ontario, Canada.

Epidemiological studies indicate that anxiety disorders occur cormorbidly with ADDs at rates of approximately 25%, much greater than what would be statistically predicted from base rates of both disorders in the general population. Yet several studies indicate that this syndrome seems not to respond to conventional stimulant treatment so fully as do other subtypes of ADD. This presentation will review data on treatments for ADDs with comorbid anxiety disorders with stimulants and with alternative medications.

Learning disorders in combination with ADDs also constitute a major problem in childhood which frequently persists into adolescence and adulthood. The degree of overlap between ADHD and LD far exceeds chance rates even in those studies using stringent criteria for defining ADHD and LD, but the nature of the relationship is unclear.

Treatment responses of comorbid ADHD-LD to stimulant medications have not been well-studied. Yet many of the symptoms of some learning disorders overlap with symptoms of ADDs which have been found responsive to stimulants.

Some studies suggest that the effects of stimulants on information processing are global rather than specific. This suggests that stimulants may generally improve cognitive functioning of any ADD patient, including those with comorbid learning disorders, in ways that may enhance the patient's capacity to perform academic tasks and to respond to instruction.

This presentation will review aspects of the overlap between ADDs and learning disorders which may be responsive to available medications. It will also suggest some unresolved issues for future research.

MEDICATIONS FOR ADDs WITH COMORBID MOOD DISORDERS &/OR SUBSTANCE ABUSE. Thomas J. Spencer, Department of Psychiatry, Harvard University, Massachusetts General Hospital, Boston, MA.

In both clinical and epidemiological studies, reported rates of comorbidity between ADD + mood disorders (dysthymia, major depressive disorders, bipolar disorders) range from 15-75%. Pharmacological treatment of these comorbid combinations may require concurrent use of combined medications. This presentation will review clinical symptoms of this comorbid combination and will present research regarding efficacy, risks and benefits of various medication options to be considered. The role of psychoeducation and other multi-modal interventions will also be discussed.

Recent studies have also reported high rates of comorbidity between ADDs and substance abuse. Longterm outcome studies indicate that adults identified as having ADHD in childhood have 15-40% lifetime rates for alcohol abuse and 10-30% lifetime rates for drug abuse. This presentation will review data about comorbid ADHD and substance abuse and will offer guidelines for use of medications in treating persons with this comorbid combination. Special considerations, risks and benefits of various medications and other treatment options for recovering persons with ADDs will be discussed.

SYMPOSIUM

Effective Interventions for Homeless: Outcomes for Substance Abuse, Employment, Homelessness.

Chair: *Jesse B. Milby*, VA Medical Center, Birmingham, AL.

Discussant: *Robert Huebner*, National Institute on Alcohol and Alcoholism, Washington, DC.

EFFICACY OF DAY TREATMENT AND WORK THERAPY FOR HOMELESS SUBSTANCE ABUSERS. Jesse B. Milby, VA Medical Center, Birmingham, AL.

Cocaine abusing homeless are difficult to treat and retain. This study's purpose was to compare efficacy of two interventions.

Subjects were 176 homeless persons, 81% males, 92% African and 8% European Americans, average age 36, average education 12.1 years, 34% veterans.

Assessments for major outcomes were: Personal History Form (homelessness), Addiction Severity Index, and EMIT urine toxicologies.

The following procedure was followed: Subjects were randomly assigned to two interventions conducted in separate facilities after screening to define homelessness, substance abuse, and rule out psychotic disorders. Assessments were administered at baseline, two, six, and 12 months by interviewers, "blind" to subjects' assignment.

Usual care involved: medical evaluation, treatment and/or referral; referrals for housing and vocational services; AIDS education provided in both interventions; and weekly individual and group counseling. Counselors served as case managers.

Day treatment involved: transportation to and from shelters and lunch; group oriented interventions and individual counseling. After two months treatment, subjects had four months work therapy, where, contingent on drug-free urines, they refurbished dilapidated houses for program use as managed housing. Wages were used to rent managed housing and occupancy was contingent on drug-free urines. The building contractor provided supervision, training, tools, etc. and work references for subjects who attempted regular employment.

Eighty-nine completed 12 months. Significant differences favoring day treatment obtained in two of three major outcomes. Percent cocaine positive urine toxicologies after baseline, was significantly less ($p = .003$). Unemployment was not significantly different, but the within group difference for day treatment was ($p < .01$). Days homeless over the last 60 days, showed a significant reduction ($p = .026$).

This is one of the first demonstrations that homeless co-