

OFFICE OF NATIONAL DRUG CONTROL POLICY

Leadership Conference on Medical Education in Substance Abuse

"Let us bring to all Americans who struggle with…addiction this message of hope: The miracle of recovery is possible, and it could be you."

President George W. Bush, State of the Union Address, January 20, 2003

Washington, DC
December 1-2, 2004

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CONFERENCE AGENDA

OFFICE OF NATIONAL DRUG CONTROL POLICY

LEADERSHIP CONFERENCE ON MEDICAL EDUCATION IN SUBSTANCE ABUSE

Washington, DC, December 1-2, 2004

WEDNESDAY, DECEMBER 1, 2004
6:00 - 9:00 PM

5:00 pm	Registration opens *(Hotel Mezzanine)*
6:00 pm	Dinner Meeting *(Consulate Room, Mezzanine Level)*
6:00 - 6:10 pm	Welcome and Acknowledgments ***Addison D. "Tad" Davis IV*** ***Acting Deputy Director for Demand Reduction Office of National Drug Control Policy***
6:10 - 7:00 pm	Dinner *(generously sponsored by The Robert Wood Johnson Foundation)*
7:00 - 7:10 pm	Introduction of the Panelists *(Mr. Davis)*
7:10 - 8:00 pm	Panel Discussion ***Dr. Bertha K. Madras,*** ***Dr. Sheldon Miller, Dr. Mark L. Kraus***
8:00 - 8:30 pm	Questions and Discussion
8:30 - 9:00 pm	Overview of Thursday's Activities and Adjourn for the Evening ***Mr. Davis &*** ***Bonnie B. Wilford,*** ***Conference Facilitator***

THURSDAY, DECEMBER 2, 2004
8:00 AM - 5:00 PM

8:00 - 8:30 am	Registration and Continental Breakfast
8:30 - 9:00 am	Introduction of Director Walters ***Mr. Davis*** Address and Charge to the Conferees ***John P. Walters*** ***Director, Office of National Drug Control Policy***
9:00 - 9:20 am	Health Professions Education: The View from NIDA ***Nora D. Volkow, M.D.*** ***Director, National Institute on Drug Abuse***

THURSDAY, DECEMBER 2, 2004 *continued*

9:20 - 9:40 am	Health Professions Education: The View from NIAAA ***Ting-Kai Li, M.D.*** ***Director, National Institute on Alcohol Abuse and Alcoholism***
9:40 - 10:00 am	Questions and Discussion *(Dr. Volkow & Dr. Li)*
10:00 - 10:10 am	Overview of the Day and Introduction of the Small Group Chairs ***Mr. Davis & Mrs. Wilford***
10:15 - 10:30 am	Break
10:30 - 12:00 pm	Small Groups Meet — Session 1 Group 1 *(Undergraduate Medical Education)* Group 2 *(Graduate Medical Education)* Group 3 *(Continuing Medical Education)*
12:00 - 12:50 pm	Working Lunch
12:50 - 1:10 pm	Health Professions Education: The View from NHTSA ***Jeffrey Runge, M.D.*** ***Administrator, National Highway Traffic Safety Administration***
1:10 - 1:15 pm	Overview of the Afternoon ***Mr. Davis & Mrs. Wilford***
1:15 - 1:30 pm	Break
1:30 - 3:00 pm	Small Groups Meet — Session 2
3:00 - 3:15 pm	Break
3:15 - 3:35 pm	Health Professions Education: The View from the Surgeon General ***Vice Admiral Richard H. Carmona, M.D., M.P.H.*** ***Surgeon General of the United States***
3:35 - 4:30 pm	Small Group Discussion Summaries
4:30 - 5:00 pm	Planning for the Future ***Mr. Davis & Mrs. Wilford***
5:00 pm	Conference Adjourns

PREFACE AND ACKNOWLEDGEMENTS

Conference Chair Addison D. Davis IV, Assistant Deputy Director for Demand Reduction, Office of National Drug Control Policy, welcomed the conferees:



Addison D. "Tad" Davis IV, Conference Chair

On behalf of ONDCP's Director, Mr. John Walters, it is my distinct privilege and honor to welcome each and every one of you. We meet as leaders of private sector organizations and Federal agencies to discuss ways to enhance the training of physicians in the prevention, diagnosis, and management of drug and alcohol problems and related medical disorders. Indeed, the conference represents a new level of engagement between government and the medical community on this important issue.

A key component of expanding the Nation's treatment capacity lies in engaging health professionals — particularly physicians — in the identification, counseling, referral, and ongoing medical management of persons with substance use disorders. From screening for addiction, to emerging modalities of treatment, to the prevention of prescription drug diversion and abuse, the need for more comprehensive medical education on substance use disorders is clear.

We look to you — the leaders of organized medicine, medical education, and licensure and accreditation — to counsel and advise us on the most effective ways to reach out to physicians and training institutions. Because the need is so compelling, and the work already accomplished so important, I am confident that this conference will help us achieve a major step forward toward our goal.

I want to conclude by thanking many of you who helped to bring this meeting together. On behalf of all my colleagues, I want to thank all of our Federal agency partners: you have always helped us whenever we asked. Particular thanks go to Mr. Charles Curie, Administrator of the Substance Abuse and Mental Health Services Administration, who has been a tremendous supporter of this effort. I'd also like to recognize Dr. Westley Clark, who directs the Center for Substance Abuse Treatment, and Beverly Watts Davis, who is Director of the Center for Substance Abuse Prevention. And then finally, my predecessor — but more importantly, my mentor and friend, Dr. Andrea Barthwell, who has been a driving force in the effort that we are about to undertake. I want to thank her for being here, but more importantly, for her energy and courage and dedication to the field, which has really set an example for all of us.

Some time ago, Dr. Barthwell was approached by Dr. Mark Kraus, Dr. Bud Isaacson, Dr. Jonathan Ritvo, and Dr. Petros Levounis with the idea for this conference. I want to express my gratitude to them, and to the other members of the Expert Panel as well.

I want to express our appreciation to The Robert Wood Johnson Foundation, which has been involved in this field for many, many years, for their generous grant in support of the conference.

Finally, I want to thank you, the conferees. I know that all of you have enormously crowded schedules, so thank you for being here. Thank you for what you have done, and for what you will do. I look forward to the results of this meeting and to our ongoing relationship. If we do our job, we will help extend your efforts to save many more lives.

Now I'm going to ask Bonnie Wilford, our conference facilitator, to explain what we'll be doing over the next two days. Any organization needs someone to keep everyone on track, and that's her task. I think she's done an excellent job in getting us here this evening and preparing this fine program for us. Bonnie served for 10 years with the American Medical Association as Director of the Department of Substance Abuse and was the first woman to direct the AMA's Division of Clinical Science. We're delighted to have her to guide us through the conference activities.

Bonnie B. Wilford
Conference Facilitator

As I stand here, I'll admit that I am forced to adopt a new paradigm. In the past, I've used what I call the "file cabinet test" to measure how far the addiction field has come. When I joined the AMA in 1981, my first assignment was to prepare a little handbook on substance abuse for primary care physicians. The sum total of the research that we gathered for that book filled barely two drawers of a file cabinet.

More recently, I have been privileged to collaborate on a textbook of addiction medicine that's published by the American Society of Addiction Medicine. The textbook itself is 1,600 pages, and it could have been longer. The editors of the next edition, two of whom are with us at this conference, will struggle to keep the fourth edition to less than 2,000 pages. The volume of knowledge in the addiction field is exploding, which is why it's so exciting. The documents that chronicle our understanding of the causes and manifestations and management of substance use disorders now fill entire libraries. So the results of the file cabinet test are among the most encouraging indicators I've seen.

But now I have a new paradigm, which I'll call the "generational test." The person who brings this home to me is Michael Dekker, a medical student who is with us as a representative of the American Medical Student Association. I am very happy to have him with us, particularly because I know his father. When Dr. Anthony Dekker and I first worked together, he was a resident who, in his spare time, was working with a street clinic for homeless kids in Chicago. I was at the AMA at the time, and we used AMA funds to help purchase medications that Tony's clinic couldn't otherwise afford.

Tony went on to become a leader in both osteopathic medicine and addiction medicine. I'm confident Michael will do the same. But I don't want to wait for another generation to come along — for Michael's son to be at a similar meeting 25 years from now — before we meet the challenge of educating physicians about substance use disorders.

The new paradigm says that this is our chance. Dr. Barthwell and Dr. Lewis are right: a rare constellation of forces is in place at this moment in time. We have a President who uses his State of the Union address to speak of the devastation of addiction and the promise of recovery. We have a Surgeon General of the United States who speaks openly and movingly about his experiences growing up in a family affected by alcohol and drug problems. And we have Director Walters, who is a member of the President's Cabinet, and the leaders of our major health agencies who are willing to provide real support to this initiative. That's an astonishing and unparalleled convergence of leadership. So I'm optimistic about our chances to effect real change.

Now to the specifics. First, you may be wondering exactly why you've been invited to be here. There were two categories of invitations: Some of you are here because you are change agents in the organizations you represent. You're the folks designated by your organizations to help us understand what the world looks like from the perspective of internal medicine, or the licensing boards, or the accreditation agencies. Others of you are experts on medical education or substance abuse. You are here because you have deep experience in creating the kinds of educational ventures we want to encourage.

We've tried to organize your time at the conference so as to maximize the opportunities for you to talk to each other and to our Federal partners, who are here not because they have to be, but because they share our enthusiasm and commitment to change. Your discussions in the working groups tomorrow are at the heart of your mission here. There are groups for undergraduate, graduate, and continuing education, as well as a group for the representatives of the Federal agencies. In the morning, you will talk and listen to each other, and you will explore how the world looks from your multiple vantage points. In the afternoon, you will be asked to devise specific strategies to move us forward from this meeting.

You will be supported in every way we can think of. We have provided professional facilitators to assist your working groups, as well as note takers who will record your thoughts and conclusions. We are very fortunate to have with us a research librarian who specializes in substance abuse issues, who has set up a reference library for you. So anything you can think of that we can do for you, we'll be delighted to do.

At the end of the day tomorrow, each of your groups will be asked to report your conclusions and recommendations to the entire conference. We're also asking you to give us advice as to how we can keep the momentum going. There are so many good people who helped to bring about this meeting, we don't want the energy to dissipate. So please give us solid ideas about practical steps we can take to keep the initiative vibrant.

Following the conference, a report will be circulated to you, first for your input, then as the official proceedings of the conference. We also will ask you to think about opportunities within your own organizations to undertake relevant activities. And the core group of conference planners will continue to meet.

The last thing I want to say, because I've heard my name mentioned an uncomfortable number of times tonight, is that a very active planning committee is responsible for this event. In addition to Martha Gagne and Tad Davis, Peggy Murray of NIAAA, Cindy Miner of NIDA, and Anton Bizzell of CSAT have been the real leaders of the effort. We thank all of them very much.

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EXECUTIVE SUMMARY

In December 2004, the Office of National Drug Control Policy (ONDCP) in the Executive Office of the President hosted an important Leadership Conference on Medical Education in Substance Abuse. The conference brought together leaders of private sector organizations, Federal agencies, organized medicine, and licensure and certification bodies to discuss ways to enhance the training of physicians in the prevention, diagnosis, and management of alcohol and drug use disorders, including prescription drug abuse. Participants were charged with identifying strategies and action steps to improve physician knowledge and skills through enhanced undergraduate, graduate, and continuing medical education.

The conference was co-sponsored by the Center for Substance Abuse Treatment of the Substance Abuse and Mental Health Services Administration, as well as the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse of the National Institutes of Health, with the assistance of the Robert Wood Johnson Foundation.

Conference Goals.

Conference participants were charged with identifying competencies, objectives, and action steps to help all physicians master core competencies in preventing, identifying, and managing substance use disorders (SUDs). As the Surgeon General of the United States, Richard H. Carmona, M.D., M.P.H., observed in his address to the conferees, the medical community — particularly primary care physicians — has a pivotal role to play in helping to identify patients who may have substance use disorders and guiding them to appropriate treatment. For this to occur, he said, medical students, residents, and practicing physicians need more and better training about the disease of addiction and the impact it can have on many other medical and psychiatric disorders.

ONDCP Director John P. Walters pledged that his office and other Federal agencies will continue to support scientific research and clinical education that help to reduce the illness and deaths associated with substance use disorders. He also promised support for research that helps bring the medical community better tools to identify, prevent, and treat those who are at risk for or experiencing such disorders, including problems with prescription drugs.

Director Walters added that the current conference represented a unique opportunity to achieve those objectives because it had created an unprecedented gathering of leaders at the highest levels of multiple government agencies and private sector organizations.

Conference Organization.

In planning the Leadership Conference, ONDCP drew on several past efforts to identify essential physician competencies related to substance use disorders. These competencies have been defined with growing specificity over the past 25 years. For example, the "AMA Guidelines for Physician Involvement in the Care of Substance-Abusing Patients," adopted as the policy of the American Medical Association (AMA) in 1979, articulates the principle that every physician must assume clinical responsibility for the diagnosis and referral of patients with SUDs, and broadly defines the competencies required to meet that responsibility.

The Macy Conference on Training About Alcohol and Substance Abuse for All Primary Care Physicians, held in 1994, moved the conversation forward by elaborating on the competencies articulated in the AMA policy statement. The report of the conference also contained a number of thoughtful essays on the subject by conference chair David Lewis, M.D., and other leaders in medical education (Lewis, 1994).

Project Mainstream, conducted by the Association for Medical Education and Research in Substance Abuse (AMERSA), with assistance from the Health Resources and Services Administration and the Center for Substance Abuse Treatment, represents a multi-year effort to describe in detail the areas of knowledge and skills required by practitioners of many health professions (AMERSA, 2002). The competencies and recommendations offered in the Project Mainstream report have been endorsed by many health professions organizations, including AMA, the American Osteopathic Academy of Addiction Medicine, and the Society of Teachers of Family Medicine.

Taken together, these efforts and the broad areas of consensus they achieved provided a solid foundation for the work of the Leadership Conference.

Perspectives on the Problem and Possible Solutions.

Distinguished speakers at the Leadership Conference suggested a number of approaches to address the challenge.

ONDCP Director John P. Walters described a public health approach built on the concept of SUDs as a contagious disease. Director Walters pointed out that, while SUDs are not spread by bacteria or other biological agents of infection, they are spread by behavior. As an example, he pointed out that when young people begin to use alcohol, tobacco, or other drugs, they expose their peers to that behavior and thus encourage them to begin using. Because peer relationships are an important part of adolescent development, this kind of "infectious behavior" forces young people to choose between emulating drug-using behavior or losing their friends. As in dealing with other infectious disorders, Director Walters said that preparing physicians to intervene effectively requires a comprehensive approach.

NIDA Director Nora D. Volkow, M.D., adopted a similar paradigm when she suggested that physicians may more readily accept their role in preventing, identifying, and managing patients with SUDs if training programs and curricula emphasize analogies to conditions that are widely understood in the medical community, such as cardiovascular disease and diabetes. For example, Dr. Volkow pointed out that, although the victim of a heart attack or stroke could be said to have brought the disease on himself or herself through diet and other lifestyle choices, physicians nevertheless feel an obligation to screen for, diagnose, and treat cardiac disorders. In this more productive concept, she noted, it makes little difference whether a disease is brought on by excessive exposure to fat or to abused drugs; one changes the functioning of the arteries and the heart, the other changes the functioning of the brain. Both require medical intervention.

NIAAA Director Ting-Kai Li, M.D., told the conferees that current efforts to overcome the barriers to physician learning and participation are "necessary but not sufficient." Specifically, Dr. Li recommended that current research and education initiatives be augmented by a collaborative program for the development of core faculty in schools of health professions education. Such programs would have both a career teacher and a scholar — investigator component, he said, describing such an initiative as a way to develop faculty who are knowledgeable about SUDs and who are able to invest in both teaching and research. Dr. Li said that such career clinical scholars and investigators would be key members of the faculty, responsible "for education, for conducting research on education and health services research, and for mentoring the next generation of clinical scholars and investigators."

Dr. Li announced that NIAAA is willing to use its KO7 grant mechanism to support both the career development of young clinical investigators and the mentoring component of such a program. NIAAA is willing to invest in this over the next nine years in a collaborative manner, he said, but the success of such an initiative will depend on the degree of buy-in from the schools of medicine and other health professions. Accordingly, he noted that "this proposal to further invest in the goal of high-quality alcohol prevention treatment and care can be done best in collaboration with the professional schools and with other Federal agencies and private sector organizations."

The National Highway Traffic Safety Administration (NHTSA) Administrator, Jeffrey Runge, M.D., who trained as a trauma surgeon, pointed out that one of the keys to case-finding is development of a screening approach that will not require extra time in the emergency department and other high-volume locations. For example, because emergency physicians often see 15 patients in an hour, they do not have time to go through lengthy screening questionnaires with every patient. In addition, to help physicians feel comfortable in screening patients, Dr. Runge noted that we also have to help them believe that they can successfully refer patients for formal assessment and treatment.

The insurance laws build in a disincentive for physicians to screen patients in emergency settings, he said, because state laws allow insurers to deny payment for care related to alcohol or drug use. To remedy the situation, he urged the conferees to look to the model legislation prepared by the National Association of Insurance Legislators, which bans such discriminatory practices.

Dr. Runge also suggested that accreditation can be used as a motivator. As an example, he noted that that the Committee on Trauma of the American College of Surgeons is considering including screening intervention protocols in the requirements for trauma center designation. He added that the Joint Commission on Accreditation of Healthcare Organizations might want to consider incorporating a similar requirement in its accreditation standards.

Vice Admiral Richard H. Carmona, M.D., M.P.H., told the conferees that patients and the public also have a role, saying: "To prevent substance abuse and save millions of lives, we must focus on closing the gap between what health professionals know about substance abuse and what the rest of America understands. I think most of you will agree that in our country, we have a largely 'health illiterate' society. Health literacy is the ability of an individual to access, understand, and use health-related information and services to make appropriate health decisions. So how does the average person deal with all of the great scientific information that we are trying to give them to change their behavior to keep them healthy, to make their lives better? They simply don't understand. The literature's pretty strongly supportive of the fact that half of patients don't understand the appointment slip

and when they're supposed to come back, and a quarter of the people don't understand their prescriptions and what's on them. This health literacy block is very, very significant in everything we do."

Dr. Carmona concluded that, "there is a gap between those of us who have the knowledge and those who need the knowledge," adding that "Improving health literacy involves giving people information about the safe use of prescription drugs, about staying away from illegal drugs, and about drinking only in moderation, if at all. We also must train ourselves and the next generation of medical professionals to watch for signs of abuse or addiction in our patients."

All the speakers acknowledged past efforts to teach physicians the competencies they need to care for patients with SUDs. While many of these efforts have been effective in demonstrating the medical basis of SUDs and creating a clinical paradigm similar to that for other chronic diseases, the speakers also agreed that the depth of the initiatives varies by clinical discipline and academic institution. They called for public-private sector collaborations to support efforts to more fully integrate effective curricula on SUDs into the mainstream of medical education at all levels — undergraduate, graduate, and CME — and across all disciplines.

Conference Outcomes.

ONDCP Director John P. Walters pointed out that all the data reviewed in the conference underscored the fact that medical students, residents, and practicing physicians need more and better training about the disease of addiction and the impact it can have on many other disorders, including cancer, cardiovascular disease, stroke, infectious diseases, mental illnesses, and even obesity. Accordingly, he asked the participants to develop action plans to improve physician knowledge and skills through enhanced training in undergraduate, graduate, and continuing medical education.

In response to Director Walters' call to action, the conferees agreed that the critical core competencies for physicians encompass a thorough understanding of the basic biomedical sciences (e.g., molecular biology, genetics, anatomy, physiology, pharmacology, and pathology), as well as knowledge and skills in the following areas:

1. *Screening, Prevention, and Brief Intervention.* All physicians should know how and when to screen patients for SUDs. Such screening may involve (1) direct questioning by a physician or other health care professional; (2) self-administered questionnaires; or (3) laboratory tests.

   Physicians also should be able to provide preventive counseling to patients at risk for SUDs, as well as brief interventions to those who screen positive for such disorders. (Brief interventions are time-limited, patient-centered counseling strategies that focus on changing behavior and increasing medication compliance.)

   Training programs should devote specific attention to building physicians' knowledge and skills in these areas. For example, a required curriculum in screening, preventive counseling, and brief treatment interventions should be integrated into the standard curricula of all medical schools and residency training programs. Such a curriculum should outline the components of screening and brief intervention. Training programs should emphasize the effectiveness of office-based screening and interventions in primary care settings.

2. *Co-Occurring Medical and Psychiatric Disorders.* Physicians should understand the medical and psychiatric comorbidities and complications of substance use disorders. They also should be able to evaluate patients with such co-occurring disorders and complications and refer patients to specialized treatment services that match the patients' individual treatment needs.

   Co-occurring disorders can be difficult to detect because substances of abuse can cause symptoms that are time-limited but indistinguishable from those seen in many other medical and psychiatric disorders; for example, substance withdrawal or acute intoxication can mimic almost any psychiatric disorder. On the other hand, treating such co-occurring disorders can markedly improve the outcome of treatment for SUDs.

   To assure that physicians achieve competence in this area, a curriculum addressing the medical and psychiatric comorbidities of SUDs should be integrated into the standard curricula of all medical schools and residency training programs. Similarly, curricula on the diagnosis and management of conditions that frequently coexist with SUDs — such as liver disorders, HIV/AIDS, and eating disorders — should incorporate information on the ways in which the symptoms, progression, and management of those disorders may be affected by an undiagnosed SUD.

   Increased training on co-occurring disorders also should be available through continuing medical education programs. Such training should focus on the recognition, treatment or referral of comorbid medical and psychiatric conditions in patients with SUDs.

3. *Prescribing Drugs with Abuse Potential.* Physicians should have a thorough understanding of the clinical, legal, and ethical considerations involved in prescribing medications with abuse potential. Such knowledge encompasses drug selection, communicating the treatment program to the appropriate individuals (patient, family, and other health professionals), correctly executing the prescription order,

and monitoring the treatment program to determine whether changes are needed to achieve optimum effectiveness and safety of drug therapy. It also involves avoiding undermedication (underprescribing), overmedication (overprescribing), and drug misuse or abuse (AMA, 1981).

This knowledge should be reinforced through undergraduate, graduate, and continuing medical education programs in all specialties. Physicians who complete such training should be able to demonstrate that they are able to prescribe medications in a therapeutic manner to all patients, including those at risk for, presenting with, or with a history of SUDs, so as to minimize the risk of inducing or perpetuating prescription drug misuse or abuse.

Each of the foregoing competencies is relevant to all disciplines and specialties. In addition, physician education can and should be tailored to specific practice situations and patient populations. For example, pediatricians have a special need for knowledge about SUDs as developmental disorders and the skills to perform screening, intervention, and referral. Pediatricians also need to consider the issues raised by children and adolescents whose parents or other caregivers have SUDs and to acquire the skills needed to address such situations. Similarly, specialists in obstetrics/gynecology need the knowledge and skills to address substance-related problems in pregnant and parenting women. Finally, because primary care physicians serve diverse populations of patients in terms of gender, socioeconomic status, and culture, they also must be culturally competent in communicating with patients and their families.

Action Steps.

Next, the conferees agreed on a series of specific recommendations and action steps. They pointed to nutrition and geriatrics as good examples of how cross-cutting ideas have been incorporated into medical education and practice, and suggested that they be used as models. Their recommendations included strategies specific to undergraduate, graduate, and continuing medical education, as well as the following general recommendations:

1. Ask the Surgeon General to convene a working group of medical organizations to draft a strong ethics policy stating that physicians may not ignore the signs or symptoms of alcohol and drug problems, on the grounds that substance use disorders are medical illnesses and may not be ignored or left untreated.
2. Work with medical student organizations to help students and residents advocate for better education in the identification and management of substance use disorders, which afflict one in 10 patients in primary medical practice.
3. Develop collaborative projects to design useful clinical models and tools. Involve multiple government agencies and private-sector organizations.
4. Work with the Federal health agencies to develop and fund a program (similar to the Career Teacher program of the 1980s) that would support the recruitment and training of medical school faculty to become experts on SUDs. Experience shows that such faculty members go on to become "champions" for adding addiction-related content to the curriculum in undergraduate and graduate medical education.
5. Establish an expert panel to assist the National Board of Medical Examiners and the National Board of Osteopathic Medical Examiners in developing test questions on substance use disorders for licensure and certification exams.
6. Teach about prescribing and prescription drug abuse in the same way other areas of clinical knowledge and skills are taught. Employ multiple focused interventions, which research shows are more effective at changing behaviors than single exposures.
7. Amend medical licensure and certification/recertification standards to require competency in prescribing controlled drugs. For example, DEA could require that, at the time of re-registration, physicians present evidence of CME credits and/or focused self-assessment to achieve competence in this vital area.
8. Address patients' health literacy needs by working through public-private partnerships to evaluate and/or develop educational materials that physicians can give to patients for whom they prescribe drugs with abuse potential.

The conferees also recommended that ONDCP schedule a follow-up meeting in a year to revisit the objectives, strategies, and action steps and to measure progress in implementing them. In the interim, they pledged to continue the dialogue.

This report of the Leadership Conference outlines the rationale for greater physician involvement in recognizing and treating patients with SUDs, describes current barriers to education in this field, and evaluates the impact of prior initiatives to improve physician education about SUDs. In addition, it proposes core clinical competencies for all physicians, based on important work that has been done by a number of organizations over the past 30 years (AMA, 1979; Lewis, 1994; AMERSA, 2002a, 2002b). Finally, it summarizes the recommendations of the leaders in organized medicine, medical education, licensure and accreditation, and Federal health agencies who gathered for the Leadership Conference.

OVERVIEW OF MEDICAL EDUCATION IN SUBSTANCE ABUSE

Research consistently demonstrates that substance use disorders (SUDs) constitute a major public health problem. For example, drug abuse is responsible for more than 25,000 deaths annually and $100 billion in total annual economic costs in the United States (Association for Medical Education and Research in Substance Abuse [AMERSA], 2002a). Alcohol use in the United States is estimated to be responsible for 100,000 deaths annually and a health care cost of $185 billion (Fiellin et al., 2002). Patients with alcohol problems consume more than 15 percent of the national health care budget, with 39 percent of these costs representing morbidity costs from secondary health and social effects. Recent surveys indicate that roughly 40 million Americans drink in excess of recommended amounts, and approximately 70 percent of adults visit a physician once every two years (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2001).

The general health care system in the United States offers an ideal opportunity to identify and treat these people and thereby reduce associated adverse health, family, and societal effects. Practitioners from various disciplines, including physicians, nurses, pharmacists, dentists, social workers, psychologists, and allied health professionals, are essential participants in national efforts to deal with these problems (Fleming, 2002). Physicians are particularly well-positioned to play a role in the recognition and treatment of patients with SUDs (National Institute on Drug Abuse [NIDA], 1998). Yet there is evidence that physicians are not adequately trained in the recognition and treatment of SUDs (Fiellin et al., 2002). In a survey of 1,082 physicians on their screening practices regarding illicit drug use, 68 percent reported that they regularly ask new outpatients about drug use. For diagnosed illicit drug abuse, 55 percent reported that they routinely offer formal treatment referral, but 15 percent reported that they do not intervene (Kessler et al., 1994). In a similar survey about alcohol problems, 88 percent of 853 respondent physicians indicated that they usually or always ask new outpatients about alcohol use. When evaluating patients who drink, 82 percent routinely offered intervention to problem drinkers (Bush et al., 1997), but only 13 percent used formal alcohol screening tools. A recent survey of emergency medicine residency directors revealed that only 25 percent provide education on specific screening questionnaires, and only 36 percent teach the NIAAA quantity and frequency guidelines for at-risk drinking (Lewis et al., 1987).

This report outlines the rationale for greater physician involvement in recognizing and treating patients with SUDs, describes current barriers to education in this field, and identifies the successes of prior efforts to improve physician education about SUDs. The following section describes core clinical competencies for all physicians, based on important work that has been done by a number of organizations over the past 30 years (American Medical Association [AMA], 1979; Lewis, 1994; AMERSA, 2002a, 2002b). A concluding section summarizes the long-term recommendations and immediate action steps outlined by the leaders in organized medicine, medical education, licensure and accreditation, and Federal health agencies who gathered for the Leadership Conference.

The Challenge of Substance Abuse

Federally supported research has led to unprecedented advances in our understanding of substance use disorders. Research funded by NIAAA and NIDA has identified the primary receptors for every major class of abused drug (including alcohol), identified their genetic code, and cloned the receptors (NIDA, 1994, 1996). The researchers have mapped the locations of those receptors in the brain and determined the neurotransmitter systems involved (Institute of Medicine, 1996). They have demonstrated the activation of these areas during addiction, withdrawal, and craving (Volkow et al., 1996); identified and separated the mechanisms underlying drug-seeking behavior and physical dependence (Maldonado et al., 1997); and developed animal models for drug self-administration (Koob, 2000). Most importantly, they have demonstrated that the mesolimbic dopamine system is the primary site of the dysfunction caused by abused drugs (Wise, 1996).

Outcomes studies supported by the Center for Substance Abuse Prevention (CSAP) and the Center for Substance Abuse Treatment (CSAT) have developed a documented body of knowledge regarding "what works" in drug abuse prevention, as well as clear evidence that treatment of SUDs is at least as effective as the treatment of other chronic medical problems. Moreover, these studies have provided direction as to how to organize prevention and treatment for specific populations to increase the likelihood of success.

Such advances have provided a clear understanding that substance abuse is a preventable behavior and that addiction is a treatable disease of the brain. This paradigm shift provides unprecedented opportunities to achieve the overarching goal of the Office of National Drug Control Policy (ONDCP): to reduce the health and social consequences of substance misuse, abuse, and addiction throughout the United States.

However, there is a gap between research and clinical practice. It is ONDCP's goal to close this gap in the prevention, identification, and treatment of SUDs. In organizing the Leadership Conference, ONDCP sought the advice of experts in medical education, licensure, and accreditation, as well as addiction medicine and the other medical specialties, as to specific steps that can be taken to increase primary care physicians' awareness of SUDs and their motivation and knowledge to incorporate the findings of recent research into their clinical practices. It thus represents a further step in ONDCP's long-term efforts to foster the adoption of evidence-based prevention and treatment interventions. The benefits of adopting such "best practices" are clear. For example, pediatricians who are knowledgeable about the risk and protective factors for adolescent drug use may be able to work with their young patients and their families to strengthen protective factors while diminishing risk factors.

Why Is It Important to Reach Primary Care Physicians?

SUDs are associated with many of the Nation's most serious and tragic problems, including violence, injury, disease, and death. Indeed, it has been estimated that, of the more than 2 million deaths in the United States each year, approximately one in four is attributable to alcohol, tobacco, or other drug use (AMERSA, 2002b). Some groups, such as members of ethnic and cultural minority populations, are disproportionately affected by the consequences of drug abuse and addiction. Moreover, it is estimated that one out of four children in the United States under 18 years of age is exposed to alcohol abuse or alcohol dependence in the family — a figure magnified by the countless numbers of other children adversely affected by parents and other caregivers who are impaired by use of other psychoactive drugs (AMERSA, 2002a).

As part of the President's National Drug Control Strategy, ONDCP has committed to intensifying its efforts in all areas of public and practitioner education. The strategy also commits ONDCP to a special effort to address the problem of misuse and abuse of prescription medications.

As noted earlier, Federally funded research and outcomes studies hold the potential for important progress in preventing and treating SUDs. Unfortunately, we have not made similar progress in another key area that holds tremendous potential: the education and training of the health care workforce. Far too little attention has been paid to educating primary care physicians and other health professionals — nurses, dentists, physician assistants, psychologists, pharmacists, social workers, and others — to respond to the needs of the millions of individuals and families affected by SUDs.

As a result, primary care physicians do not identify and diagnose alcohol and drug problems with the same acuity they bring to other medical disorders. The role of these front-line health professionals in prevention, early identification, and referral thus remains largely untapped. Yet primary care physicians are in an ideal position to provide preventive guidance, education, and intervention to children, adolescents, adults, and their families. In fact, it has been estimated that up to 20 percent of visits to primary care physicians are related to such problems (Bradley, 1994). Moreover, patients with alcohol and other drug problems are twice as likely to consult a primary care physician as individuals without such problems (Rush, 1989).

Recent research shows that the public ***wants*** such help from their caregivers. For example, in a public opinion survey conducted by the Harvard School of Public Health and The Robert Wood Johnson Foundation (2000), 74 percent of respondents said they believe that addicts can stop using drugs, but that to do so they need help from professionals or organizations outside their families. By "help," two-thirds said they meant intervention by a health care professional.

Research also shows that physicians play an important role in their patients' health decisions. For example, a recent review of brief interventions for alcohol and drug problems concluded that primary care physicians can be effective in changing the course of patients' harmful drinking (Bien et al., 1993; Fleming et al., 1997). Smoking cessation research shows that a physician's statement to quit smoking is enough to convince many patients to undertake such an effort. And interventions by emergency physicians have been shown to reduce subsequent alcohol use and readmission for traumatic injuries (Gentilello et al., 1999), as well as drinking and driving, traffic violations, alcohol-related injuries, and alcohol-related problems among 18- and 19-year-olds (Monti et al., 1999).

Moreover, a small number of physicians inappropriately prescribe therapeutic medications that have abuse potential, thus inducing or sustaining SUDs in their patients and others to whom such drugs may be given or resold. This poses an

additional educational challenge: how to provide training in the clinical, legal, and ethical issues involved in prescribing drugs with abuse potential as part of undergraduate, graduate, and continuing medical education in all specialties. At the completion of each level of training, physicians should be able to demonstrate that they have the knowledge and skills required to prescribe in a therapeutic manner to their patients, including patients at risk for, presenting with, or with a history of SUDs, so as to minimize the risk of inducing or perpetuating prescription drug misuse or abuse.

Unfortunately, although primary care physicians are the professionals most often cited by patients and families as the "most appropriate" source of advice and guidance about issues related to the use of alcohol, tobacco, and other drugs (including prescription drugs), they also are reported to be the "least helpful" in actually addressing these issues. The diagnosis of drug abuse or addiction often is missed by physicians and, even when such a diagnosis is made, many physicians do not know how to do a brief intervention or develop an organized plan for patient referral or treatment. Clearly the basic clinical skills of screening, assessment, presenting the diagnosis, negotiating a treatment plan, and ongoing monitoring — all skills that physicians routinely employ in the management of other chronic disorders — need attention when it comes to drug abuse and addiction (Conigliaro et al., 2003).

Core Values and Paradigms of Physicians

Feillin and colleagues (2002) note that physicians' core values include the restoration of health, patient comfort, and quality of life whenever possible. These values are congruent with the diagnosis and treatment of patients with SUDs. Although many physicians are well equipped to treat the medical and psychiatric complications of substance abuse, most are not prepared to treat substance abuse as a primary disorder. Despite the high prevalence of SUDs in the general population (Kessler et al., 1994), and their increased prevalence in medical settings (Bush et al., 1987), most physicians receive limited training in the science of addiction. This lack of training frequently results in missed opportunities for care.

The biomedical model — a central paradigm for physicians — is based on the concept that disease is the result of perturbations in anatomy or physiology and stems from a combination of genetic, behavioral, and biologic phenomena. The recognition that SUDs fit the criteria for the disease model (Lewis et al., 1987; Page, 1988), given validity by the AMA in 1966 (AMA, 1966), came during a time of discoveries regarding the genetic, physiologic, and behavioral factors involved in the etiology, natural history, and treatment of these disorders (Nestler & Aghajanian, 1997).

This biomedical "legitimacy," running counter to the popular misconception that these disorders stem from weakness of the will (Dole, 1988; Musto, 1992), provides support for the expansion of physicians' efforts on behalf of patients with SUDs. The disease model, particularly the recognition that, for many patients, SUDs are chronic diseases with periods of remission and relapse (McLellan et al., 2000), has provided a basis for physicians to modify the natural history of these disorders and to intervene at stages ranging from at-risk use to abuse and dependence using standard medical approaches, such as prevention, pharmacotherapy, and counseling. Recent efforts have focused on incorporating evidence-based medicine into the treatment of patients with SUDs (Fiellin et al., 1988, 2000; McCrady & Langenbucher, 1996; Mayo-Smith, 1997; Wilk et al., 1997), which should help assure patients the full benefits of basic, clinical and services research.

Physician Training.

Practicing physicians in the United States must have obtained either an M.D. (doctor of medicine or allopathic physician) or a D.O. (doctor of osteopathy) degree (Fiellin et al., 2002). Physicians with an M.D. degree represent approximately 93.5 percent of the current physician workforce, with osteopathic physicians representing just over 6.5 percent of the Nation's physicians.

Physicians can be broadly classified as generalists or specialists. Generalist physicians provide primary and longitudinal care to patients in the fields of pediatrics, internal medicine, obstetrics/gynecology, and family medicine; in the case of emergency medicine, primary care is provided in the emergency setting. By contrast, specialist physicians typically provide care focused either by organ system (e.g., gastroenterology, cardiology) or by technical expertise (e.g., interventional radiology, plastic surgery).

Generalist and specialty medical care is delivered in a variety of clinical settings. The majority of patient care is rendered in outpatient settings, such as private offices, clinics, community health centers, urgent care centers, surgical centers, and emergency departments. A much smaller percentage of patient care is delivered in hospital settings; however, because of the intensity of services provided in the hospital, care provided in that setting consumes a disproportionate share of health care dollars. Individuals with SUDs are disproportionately high consumers of hospital-based services, which makes hospitals a particularly important setting for offering substance abuse screening, intervention, and referral services.

Development of Physician Training About SUDs.

Early physician involvement in the care of patients with SUDs focused primarily on the adverse medical complications of alcohol and other substances and tended to have limited effectiveness because it was not based on a recognition of

the disease process. More recent involvement by physicians in the treatment of patients with these disorders has paralleled societal tolerances to the problems of addiction (Musto, 1992). Physicians in the late 19th and early 20th centuries used medicinal compounds that often included high concentrations of alcohol, opium, codeine, heroin, and cocaine. Heroin was used for the treatment of cough, and cocaine was used for allergy symptoms (Musto, 1992). At the turn of the 20th century, physicians providing maintenance treatment for patients with opioid dependence were halted by the Harrison Narcotic Act of 1914 and a Federal legislative policy against maintenance that accompanied Prohibition in 1919 (Musto, 1992).

Later 20th-century physician efforts in the treatment of SUDs include, among others, research on the natural history and mechanism of the alcohol withdrawal syndrome (Victor, 1966; Bill, 1994), the demonstration of the effectiveness of methadone maintenance for opioid dependence (Dole, 1965), and the recognition of the adverse effects of alcohol on fetal development (American Academy of Pediatrics, 2000). Physicians have also been involved in developing and implementing effective psychosocial treatments for SUDs, including motivational techniques, cognitive behavioral therapy, contingency management, and self-help group facilitation (Carroll & Schottenfeld, 1997).

Key elements of these psychosocial interventions have been identified and used successfully by physicians during brief interventions with patients who have SUDs (Bien et al., 1993; Wilk et al., 1997). Recent advances in understanding the neurochemical basis of SUDs have allowed physicians to use pharmacological interventions such as the approval of buprenorphine and naltrexone for the treatment of drug addiction, and of acamprosate for the prevention of alcohol relapse (American College of Physicians, 1989; O'Malley et al., 1992; Volpicelli et al., 1992; Nestler & Aghajanian, 1997; O'Brien, 1997; O'Connor et al., 1997; Fiellin et al., 2000). Pharmacotherapies that have been successfully used by physicians for detoxification and relapse prevention of opioid dependence include methadone, buprenorphine, naltrexone, clonidine, and lofexidine (Dole, 1965; Newman, 1987; O'Connor et al., 1988; Strain et al., 1993, 1999; Ling et al., 1988; O'Connor & Kosten, 1998).

Enhanced efforts to train physicians in the care of patients with SUDs resulted from the increase in substance abuse during the 1960s and continued progress in understanding the biomedical basis of these disorders.

One of the earliest meetings called to discuss deficiencies in the traditional medical school curriculum and the need for better professional training was sponsored by the National Council on Alcoholism in 1970 (NIDA, 1998). Early efforts by the AMA and the Medical Society on Alcoholism also were directed toward increasing physician education about SUDs (Lewis et al., 1987). Later, Federal funding for the Career Teacher Program in the Addictions provided faculty support to 59 medical schools and represented a successful effort to increase the number of academic physicians who could teach other physicians about SUDs (Fleming, 1994). One result of this program was the creation in NIAAA and NIDA of offices to administer efforts to improve alcohol and drug abuse education for health professionals (NIDA, 1998). In addition, two prominent research societies, the Research Society on Alcoholism and the Committee on Problems of Drug Dependence, have provided a national and international forum for sharing current research findings.

A landmark conference held at the AMERSA Ninth Annual Meeting in 1985 addressed the issues of the minimal alcohol and drug abuse knowledge and skills for physicians. The conferees concluded that information on SUDs should be routinely integrated with preclinical course work and repeated during subsequent years (NIDA, 1998).

Concurrent with these early programs were efforts to provide resources and faculty development, including Project CORK (Lewis et al., 1987) and Project ADEPT (Dube et al., 1989) and efforts by members of the Society of General Internal Medicine and the Society of Teachers of Family Medicine, the Ambulatory Pediatric Association, the American Psychiatric Association, the American College of Emergency Physicians, and the American College of Obstetricians and Gynecologists (ACOG) (Graham et al., 1997). Seven-year follow-up of one of these programs demonstrated ongoing success in promoting publications, presentations at national meetings, and clinical teaching by the fellowship participants (Graham et al., 1997).

More recently, Federal support for faculty development in substance abuse education and training has come through the Federal Medicine Grants Program and the Faculty Development Program, established in 1989 by CSAP, NIAAA, and NIDA. Between 1989 and 1995, the Faculty Development Program provided grants to 14 medical schools supporting 69 faculty fellows in pediatrics (26 percent), internal medicine (22 percent), psychiatry (19 percent), family medicine (14 percent), and obstetrics/gynecology (nine percent). A recent evaluation of this program found that it produced significant increases over the six-year period in faculty activity in SUDs, as measured by faculty time, publications, grants, and course work (Cosmos Corporation, n.d.). For instance, faculty fellows with substance abuse-related grants increased from eight percent at year one to 26 percent at year five. Similarly, the percentage of Faculty Development Program project directors who were awarded new substance abuse-related grants increased from 15 percent during year one to 55 percent at year five (AMERSA, 2002b).

Another recent model of successful faculty development is represented by Project SAEFP (Substance Abuse Education for Family Physicians) in which 165 faculty participated in a five-day course using learner-centered teaching techniques. An evaluation of this program revealed a two- to threefold increase in substance abuse teaching activities by faculty with residents and medical students 12 months after the completion of the course (Fleming et al., 1994).

In summary, faculty development programs designed to bring about substantive increases in the number of faculty who are trained to provide clinical teaching in the area of SUDs have repeatedly demonstrated success in achieving these goals. Faculty participants have increased their teaching; maintained continued scholarly work, including manuscripts and presentations at national meetings; and secured grant funding to continue research and education in the field of SUDs.

Defining the Core Competencies

The critical core competencies for physicians include a firm understanding of the basic biomedical sciences (e.g., molecular biology, genetics, anatomy, physiology, pharmacology, pathology) and the clinical sciences (e.g., patient interviewing, physical diagnosis, diagnostic reasoning, clinical epidemiology, and psychosocial counseling techniques). All of these competencies have direct application to the care of patients with SUDs (Fiellin et al., 2002). These competencies encompass knowledge and skills in the following areas:

1. **Screening, Prevention, and Brief Intervention.** Physicians should know how and when to screen patients for SUDs and how to perform preventive counseling and brief interventions, as appropriate.
2. **Co-Occurring Medical and Psychiatric Disorders.** Physicians should understand the medical and psychiatric comorbidities and complications of substance use disorders. They also should be able to evaluate patients with such co-occurring disorders and complications and refer patients to specialized treatment services that match the patients' individual treatment needs. Physicians also should be prepared to provide ongoing medical monitoring and to address the needs of special populations, such as adolescents and older adults.
3. **Prescribing Drugs with Abuse Potential.** Physicians should understand and be prepared to address the clinical, legal, and ethical considerations involved in prescribing medications with abuse potential, so as to minimize the risk of inducing or perpetuating prescription drug misuse or abuse.

Each of these competencies is relevant to all disciplines and specialties. In addition, physician education can and should be tailored to specific practice situations and patient populations. For example, pediatricians have a special need for knowledge about SUDs as developmental disorders and the skills to perform screening, intervention, and referral. Such physicians also need to consider the issues raised by children and adolescents whose parents or other caregivers have SUDs and to acquire skills in screening and intervention in these situations. Similarly, specialists in obstetrics/gynecology need the knowledge and skills to address substance-related problems in pregnant and parenting women.

Because primary care physicians serve diverse populations of patients in terms of gender, socioeconomic status, and culture, they also must be culturally competent in communicating with patients and their families.

Screening, Prevention, and Brief Intervention. Physicians should know how and when to screen patients for unrecognized SUDs and how to perform preventive counseling and brief interventions, as appropriate.

Screening for diseases is warranted if the following conditions are met: the disease has a significant prevalence and consequences; effective and acceptable treatments are available; early identification and treatment are preferable; and there are effective screening instruments available that are easy to administer. Strong research evidence supports the fact that SUDs meet all of these criteria; therefore, screening for SUDs is indicated although not often implemented (Fleming, 2002).

Screening for SUDs may involve (1) direct questioning by a physician or other health care professional; (2) self-administered questionnaires, completed by the patient with pencil and paper or computer; and (3) laboratory tests. Many of these methods have excellent psychometric properties that are comparable to a single measurement of blood pressure as a screening test for hypertension, a fasting blood glucose test to detect diabetes, a mammogram to identify early breast cancer, or a prostate-specific antigen test to detect prostate cancer. Less information is available on screening for drug problems. While evidence for the effectiveness of various screening methods is not as strong as for alcohol, a number of instruments and methods are available. The overall reliability and validity of screening methods to detect alcohol and drug use vary by the method of administration of the test, the clinical setting, and the population of interest. Consumption questions that focus on frequency, quantity, and bingeing are widely recommended as initial screening questions for use in clinical settings (NIAAA, 1998).

Physician training should include attention to the rationale, utility, operating characteristics, and use of various screening methods, including the importance of raising the topic during history-taking and the appropriate use of formal screening instruments (e.g., CAGE, AUDIT), quantity-

frequency questions, and biological markers (e.g., MCV, AST, ALT, carbohydrate-deficient transferrin).

Similarly, physicians should be able to provide preventive counseling to patients at risk for SUDs and brief interventions to those who screen positive for such disorders, using techniques for which effectiveness has been demonstrated in outcomes studies. Prevention of harm from the use of psychoactive substances can help decrease the impact of SUDs on the individual and society. For example, reducing alcohol consumption among pregnant women can reduce the incidence of fetal alcohol syndrome and the more subtle fetal alcohol effect.

In addition, preventive counseling and brief interventions have been shown to be effective in decreasing progression to more severe alcohol or drug problems, which typically are less amenable to treatment. Brief interventions are time-limited, patient-centered counseling strategies that focus on changing behavior and increasing medication compliance. Brief intervention is not unique to the treatment of SUDs; in fact, this strategy is widely used by physicians to address other behaviors. For example, brief interventions are used to help patients change dietary habits, reduce weight, stop smoking, reduce cholesterol or blood pressure, and take medications as prescribed (Fleming, 2002).

Brief intervention is useful in three clinical situations. First, it can reduce alcohol use and the risk of alcohol-related problems in nondependent drinkers who are consuming alcohol above recommended limits. The goal of brief intervention with this population is to reduce consumption or negative consequences, not abstinence. Second, brief intervention may be used to facilitate medication compliance and abstinence (noncompliance is a major issue with patients receiving medication for alcohol problems and co-occurring psychiatric disorders). Finally, brief intervention may be used to facilitate the referral of persons who do not respond to brief counseling alone. Services research shows that most patients who are referred for an assessment or counseling either do not schedule an appointment or fail to keep the appointment. Brief intervention can greatly facilitate this process and increase the probability that the patient will successfully follow through with the referral (Fleming, 2002).

While the full range of risk factors for SUDs, including specific genetic markers, are still being elucidated, and the determinants of progression from substance use to misuse to abuse and addiction are under ongoing evaluation, it is clear that early recognition and intervention by physicians can be effective in decreasing progression from less severe to more severe SUDs. For example, there is evidence that brief interventions can reduce alcohol consumption to below hazardous levels for patients who are found to be engaged in hazardous or harmful drinking.

Training programs should devote specific attention to building physicians' knowledge and skills in these areas. For example, a required curriculum in screening, preventive counseling, and brief treatment interventions should be integrated into the standard curricula of all medical schools and residency training programs. Such a curriculum should outline the components of screening and brief intervention. Also, training in SUDs should devote attention to the effectiveness of office-based screening and interventions in primary care settings.

As a requirement for graduation, medical students should demonstrate competency in screening, preventive counseling, and brief treatment interventions, and licensing examinations should include content and questions relevant to appropriate strategies for identifying and intervening with individuals who are at risk for or experiencing SUDs. Increased curricular content also should be available through continuing medical education (CME) programs.

This objective has been endorsed by multiple medical organizations and public agencies, including ONDCP (in the 2004 National Drug Control Strategy), AMA (in policy statements adopted or reaffirmed in 1979, 1981, 1991, and 2001), the American Society of Addiction Medicine (ASAM) (in 1987), and others.

Identification and Management of Co-Occurring Substance Use and Medical or Psychiatric Disorders.

Physicians should be able to identify and treat or appropriately refer patients with co-occurring medical and psychiatric conditions and SUDs. In addition, physicians should be prepared to provide ongoing medical monitoring and to address the needs of special populations, such as adolescents and older adults.

Population studies consistently report high rates of comorbid medical and psychiatric disorders in patients with SUDs. For example, the Epidemiological Catchment Area and the National Comorbidity Studies report that 29 to 37 percent of patients diagnosed with alcohol problems have a co-occurring psychiatric disorder (most commonly mood and anxiety disorders, attention deficit disorder, and antisocial personality disorder). Similarly, alcohol or drug problems — as well as the route used to administer drugs (e.g., injection) — are associated with significant comorbid medical conditions such as hepatitis B and C, endocarditis, HIV/AIDS, tuberculosis, and cirrhosis.

Co-occurring disorders can be difficult to detect because substances of abuse can cause symptoms that are time-limited but indistinguishable from those seen in many other medical and psychiatric disorders; for example, substance withdrawal or acute intoxication can mimic almost any psychiatric disorder. On the other hand, treating the co-occurring disorder can markedly improve the outcome of treatment for the SUD.

Also, it is important to note that addiction to more than one substance is common among substance users. For example, nearly 35 percent of cocaine-dependent individuals are estimated to be alcohol-dependent (Carroll et al., 1998). Recognition of such comorbidities is an important factor in appropriate treatment.

Although at present there is little formal training in dual diagnosis for health care providers of any discipline except psychiatry, the addition of this level of sophistication in training and clinical care initiatives can provide an important component to clinical care and improve patient outcomes.

To assure that physicians achieve competence in this area, a curriculum addressing the medical and psychiatric comorbidities of SUDs should be integrated into the standard curricula of all medical schools and residency training programs. Similarly, curricula on the diagnosis and management of conditions that frequently coexist with SUDs, such as liver disorders, HIV/AIDS, and eating disorders, should contain information on the ways in which the symptoms, progression, and management of those disorders may be affected by an undiagnosed SUD.

Increased training on co-occurring disorders also should be available through CME. Such training programs should devote attention to the recognition, treatment, or referral of comorbid medical and psychiatric conditions in patients with SUDs.

This objective has been endorsed by multiple medical organizations and public agencies, including ONDCP (in the 2004 National Drug Control Strategy), AMA (in policy statements adopted or reaffirmed in 1979, 1981, 1991, and 2001), ASAM (in 1987), and others.

Prescribing Drugs with Abuse Potential and the Prevention of Prescription Drug Abuse.

An essential area of competence for physicians is the ability to understand and the skills to address the clinical, legal, and ethical considerations involved in prescribing medications with abuse potential, so as to minimize the risk of inducing or perpetuating prescription drug misuse or abuse.

Appropriate use of prescription drugs encompasses drug selection, communicating the treatment program to the appropriate individuals (patient, family, and other health professionals), correctly executing the prescription order, and monitoring the treatment program to determine if changes are needed to achieve optimum effectiveness and safety of drug therapy. Therapeutic use also involves avoidance of undermedication (underprescribing), overmedication (overprescribing), and drug misuse or abuse (AMA, 1981).

Undermedication occurs when the patient fails to receive adequate drug therapy. For example, the negative impact of excessive concern about psychological and/or physical dependence is revealed by reports that acute and chronic pain often is inadequately treated. Relief of suffering is a legitimate goal of medical practice. On the part of the physician, failure to provide such relief may result from timidity ("pharmacophobia"), incorrect assessment of problem severity, or lack of knowledge or faith in the value of a drug, even when its administration is indicated. Patients contribute to undermedication when they fail to convey the severity of their symptoms to the physician, or to use a prescribed drug in the amount and for the duration of time prescribed (often for economic reasons). Thus, the factors contributing to undermedication are diverse and span the fields of medicine, psychology, sociology, and economics.

Overmedication is the unjustified use of a drug. Overmedication occurs when a drug is used for an indication that is no longer accepted medical practice (obsolete), as determined by drug utilization criteria and standards; when there is no proper indication or sound scientific basis for such use; when administration continues despite proven ineffectiveness in curing the disease, disorder, or condition or ameliorating its symptoms; when more effective or less hazardous drugs are available; when the dose is excessive; when a combination drug is used even though only one of its components is indicated; or when more drugs are prescribed than are required (polypharmacy).

Prescription drug *misuse and abuse* involve the use of a drug, usually by self-administration, in a manner that deviates from approved medical, legal, and social standards. The issues of drug abuse and overmedication often are related.

That a small portion of medications are inappropriately prescribed by practitioners or misused or abused by patients and others raises an important policy issue: how to make medically useful drugs readily available for therapeutic use, while limiting access to them for non-therapeutic purposes. This policy mandate poses challenges very different from those of illicit drugs, because prescription drug problems must be prevented or curtailed without impeding patients' access to needed medical care.

To help physicians avoid the problems described above and achieve the desired level of competency, the conferees agreed that training in the clinical, legal, and ethical issues involved in prescribing drugs with abuse potential should be integrated into undergraduate, graduate, and continuing education programs in all specialties. Physicians who complete such training should be able to demonstrate that they have the knowledge and skills required to prescribe in a therapeutic manner to their patients, including patients at risk for, presenting with, or with a history of SUDs, so as to minimize the risk of inducing or perpetuating prescription drug misuse or abuse.

This objective has been endorsed by multiple medical organizations and public agencies, including ONDCP (in the 2004 National Drug Control Strategy), AMA (in policy statements adopted or reaffirmed in 1979, 1981, 1991, and 2001), ASAM (in 1987), and others.

What Are the Principal Challenges in Achieving These Competencies?

Despite general agreement that many patients seen in primary care settings are at risk for or experiencing a problem related to use of alcohol or other drugs, many primary care physicians do not feel adequately prepared to address the issue. For example, a survey of Fellows of the American Academy of Pediatrics (2001) found that only 45 percent routinely screened their patients for alcohol use, and many felt inadequately trained to do so. Moreover, given the limited amount of time they have to manage acute, chronic, and preventive care, as well as the volume of information that inundates their practices, primary care physicians report that they often feel overwhelmed. For example, in a survey of family practitioners, many reported that managed care contracts require them to see as many as four or five patients per hour (American Academy of Family Physicians [AAFP], 2003), leaving as little as 12 minutes for each patient visit.

Another significant challenge is the fact that the nature of drug abuse research is changing our understanding of the disorder. In addition, regional and national drug abuse patterns are constantly evolving; new drugs of abuse and new drug use technologies emerge with striking regularity. Such a rapidly evolving environment demands great flexibility of those who would understand and respond to it.

Like patterns of drug abuse, the nature of primary care practice also is evolving rapidly. Over the past decade, changes in health care organization and financing have required physicians in traditional areas of primary care (such as family medicine) to assume responsibility for treating conditions — such as chronic pain or coronary artery disease — that previously were the province of specialists. On the other hand, physicians in some medical specialties (notably obstetrics/gynecology and emergency medicine) have become de facto primary caregivers for a significant number of patients.

Finally, there is the problem that some physicians still do not regard drug abuse and addiction as biologically based medical disorders. It is interesting to note that opiate (Pert & Snyder, 1973) and lipoprotein (Brown & Goldstein, 1976) receptors were identified at approximately the same time, yet met entirely different reactions on the part of the medical profession and the public. On the one hand, the identification of lipoprotein stimulated a massive research effort that resulted in the discovery of extraordinarily effective cholesterol-lowering drugs (Hebert et al., 1997), which are used extensively by physicians and accepted by the public. On the other hand, despite our new understanding of the contributions of receptors to the development of addiction, until very recently there has been little interest in developing medications to treat addiction and poor acceptance by physicians and patients of those already approved.

PERSPECTIVES OF THE PRIVATE SECTOR LEADERS

Conference Chair Addison D. Davis IV.

We are going to begin the conference with a panel presentation that will give us a preview of some of the issues we will be discussing. We have three distinguished panelists: Dr. Bertha Madras, Dr. Sheldon Miller and Dr. Mark Kraus. We have asked each of them to provide their own perspective on the issues we are facing and to offer their insights as to possible solutions. They will look at undergraduate medical education, graduate medical education, and continuing medical education. We'll follow that with a general discussion, so that each of you has an opportunity to contribute.

Our first speaker is Bertha K. Madras, Ph.D. Dr. Madras is a professor of psychobiology in the Department of Psychiatry at the Harvard Medical School, and chairs the Division of Neurochemistry at the New England Primate Research Center. At the medical school, she is the Associate Director for Medical Education in the Division on Addictions, chairs the Faculty Affairs Committee, and is a member of the subcommittee of professors.

Dr. Madras will be followed by Sheldon I. Miller, M.D., who is the Lizzy Gilman Professor of Psychiatry at the Feinburg School of Medicine at Northwestern University in Chicago. Until two years ago, Dr. Miller also was chair of that university's Department of Psychiatry and Behavioral Sciences. He is currently a member of the board of directors of the Accreditation Council for Graduate Medical Education and a member of the board of directors of the American Board of Emergency Medicine and of the executive committee of that board. His other current positions include the board of directors of the American Academy of Addiction Psychiatry and the editorship of the American Journal on Addictions.

Our third panelist is Mark L. Kraus, M.D., FASAM. Dr. Kraus is a general internist in private practice at Westside Medical Group in Waterbury, Connecticut, and Medical Director of Addiction Medicine at Waterbury Hospital. He also is Assistant Clinical Professor of Medicine at Yale University School of Medicine, and a Fellow of the American Society of Addiction Medicine.

Undergraduate Medical Education



Bertha K. Madras, Ph.D., Harvard Medical School.

This is a unique gathering. In my view, the institutions and individuals who are represented here can mount a significant response and play a pivotal role in reducing the medical and social problems contributing to and associated with drug abuse.

I'd like to share my experiences in developing and presenting an elective course on substance abuse to the fourth year Harvard Medical School students. The background of this course is very simple. Dean Tosdan, then the Dean of Harvard Medical School, was approached by two CEOs who had family members with substance abuse problems. Both came to him with very profound complaints that the physicians who cared for their family members did not help their family members deal with the substance abuse problems. What they felt is that physicians in general are not being properly educated about substance use disorders.

In response to this, the Dean developed a small committee and then a larger committee. Out of that came a number of initiatives, one of which was to develop a course on substance abuse. I was appointed to develop the course and to direct it, and to develop a public education program that involved a museum exhibit at the Museum of Science in Boston, as well as a CD-ROM for the public. There were other initiatives as well.

The course is given in a one-month block during the last month of year four of medical training. It falls under the rubric of the advanced biomedical sciences curriculum. The idea is to reinforce the scientific basis of medicine for graduating medical school students. My charge is to present the basic biological principles and translate the information into medical practice.

Although I had anticipated that most of the students interested in this course would be future psychiatrists or future

addiction medical specialists, in fact, such students represented a tiny fraction of the people who signed up for the course. The vast majority were interested in internal medicine, OB-Gyn, surgery, emergency medicine, or just people who came to me and said, "I'm taking this course because I recognize the high prevalence of substance abuse problems in medical practice. I am insecure about how to diagnose substance abuse problems and how to manage patients with substance abuse problems. And I'm insecure about my understanding of the underlying biology and how to begin to explain it to my patients."

Initially, we developed what I would consider a very conventional course, a core curriculum taught by a cohort of at least fourteen of my colleagues and myself. I teach all the basic neurobiology. My colleagues teach screening, diagnosis, detoxification, and treatment of adolescents and adult populations with substance abuse problems. I present the didactic information about the history, legal issues, and neurobiology of substances.

The course includes roundtable discussions, where the faculty discuss the overlap between pain control and opiate abuse, the risks of drug abuse to the developing fetus and child, gambling as an addictive behavior, research paradigms for investigating drugs, long-term effects of substances with regard to neuropsychological sequelae, as well as brain biology and cell and molecular biology. And we cover every single drug that we are aware of at the present time.

The course has non-traditional features as well, which I would divide into two areas: student perspectives and learning perspectives. The most important challenge that I found in presenting the course was how to reduce the stigma of even considering this as an appropriate body of knowledge for physicians.

We begin by asking the students to complete a questionnaire containing about 20 questions probing their attitudes towards substance abuse. This is done privately, to learn how they really feel. At the end of the course, they're asked to bring their responses back to the class to see whether their attitudes have changed. Most of the students say they feel the course has helped them develop an understanding of addiction as a true medical problem and that in fact their attitudes have changed.

We also deal with the students' attitudes towards politically charged issues such as needle exchange, medical marijuana, and drug legalization. To do so, we use a debate format because it is important to have the students arrive at conclusions based on their understanding of the evidence. To the debate, the students bring their personal convictions about drugs, ranging from permissive to prohibitive. They debate the issues one by one. What is fascinating is that by the end of the debates, many students develop relatively conservative attitudes toward these issues.

Finally, we focus on science and evidence-based medicine. We bring the discipline of addiction into mainstream medicine by looking at cellular and molecular biology, by looking at brain imaging approaches to understanding the influence of drugs.

We offer unique perspectives by bringing students to a detoxification center and allowing them to interview patients who are undergoing the process of detoxification. Their stories occasionally have brought the entire class — as well as two instructors — to tears.

The students also interview patients. In one case, we asked a surgeon to bring in a patient as well as a psychiatrist who's a specialist in addiction medicine. The students heard the surgeon conduct a standard patient interview, juxtaposed with how a specialist in addiction medicine would interview the same individual. Then the students are given an opportunity to interview patients.

We also bring in the former associate medical examiner of Massachusetts to present a dramatic set of slides on the pathology of substance abuse. Students who are not convinced that drugs have any malevolent effect on the body leave that class with their minds changed.

Another core feature of the course is a discussion of the medical license, which is presented as a privilege. We emphasize that personal impairment jeopardizes the license. The Executive Director of the Physicians Health Service, which cares for impaired physicians, comes in to describe the program, the types of facilities that are available to help those who have personal problems or suspect a problem in a colleague.

We bring in the Chairman of the Board of Registration in Medicine and discuss licensing and physician conduct. We also bring in a representative of the Drug Enforcement Administration to instruct students on the DEA vantage in terms of prescribing practices as well as how to stay off DEA's radar screen.

The course has been very successful. The evaluations have been very good, and I really enjoy the fresh perspectives the students have brought to it over the more than 10 years it has been offered.

The most common feedback we receive from students is that all the members of their class should have taken the course. We have been discussing this with the Dean of Education at the Harvard Medical School. Part of the debate is whether it should be given in one solid block in the last year, of whether it should be divided across the four years to reinforce the message. I will leave you with that as an issue to discuss.

Graduate Medical Education



Sheldon I. Miller, M.D., Northwestern University Medical School.

From the standpoint of the future education of physicians about addiction issues, I see graduate medical education as a very important area for us to address. But first, because the people here are from very different backgrounds, I'm going to risk boring a few people by describing the structure of graduate medical education. Two organizations are involved with the production of specialists in American medicine: one is the Accreditation Council for Graduate Medical Education (ACGME), which has under its aegis 24 residency review committees. Those committees oversee more than 10,000 residencies and more than 100,000 residents in the U.S. The ACGME reviews and accredits the programs where physicians train.

The other important organization is the American Board of Medical Specialties, which brings together the boards that govern specialty practice. These boards set the standards for their specialties.

It is fair to say that the structure of every single medical specialty in the U.S. is determined by the boards and the residency review committees. It is critical to understand this if we hope to move forward with physician training about the addictions at the level of graduate medical education.

While there have been multiple efforts in this direction in the past, which have not met with total success, I do want to remind you that there have been some very positive outcomes. These provide an example and, perhaps, a "road map" of how we might navigate the complex, politically interdependent process required to achieve change in graduate medical education. I may be a little chauvinistic here, but I want to focus on the specialty of psychiatry, which has managed to make a great difference.

If you have looked at some of the background material for this conference, you'll notice that different medical specialties have widely differing levels of addiction content. The specialty that stands out by virtue of the fact that 95 percent of its training programs have significant addiction content is psychiatry. That's not a result of anybody being particularly insightful, but of a lot of effort that actually achieved success. I raise it as an example for other specialties.

Approximately 10 years ago, a process began in the same way this conference started: a group of interested individuals wanted to create a subspecialty of addiction psychiatry. Their reason was not to create a lot of specialists to treat all patients with addictive disorders, although they did want to develop experts to care for the really difficult cases. But their principal reason for wanting a subspecialty was to train educators and researchers, because medicine is a field that listens to its own subspecialists. This is true of every specialty: If there is a subspecialty group within the organization, it has an important voice, which simply doesn't exist in organizations that do not have such subspecialties. So those of us who were involved felt it was very critical to create such a body.

A lot of effort went on within the professional organization — in this case, the American Psychiatric Association. There also were very intense meetings with the American Board of Psychiatry and Neurology, which was the only avenue through which a subspecialty could be created. That went on for several years. We met…We talked…We researched…We talked…We met…We were disappointed…We were encouraged…All of it happened. And then, finally, it became clear that with just the support of the American Psychiatric Association — not enthusiastic support, but just some support rather than hostility — the American Board of Psychiatry and Neurology would be willing to create a subspecialty of addiction psychiatry.

The moment that happened, the Residency Review Committee for psychiatry — which is the other side of this equation — became energized, because suddenly a whole new series of requirements had to be written. It quickly became clear that such requirements could not be written unless the issue was also addressed in the core requirements for the specialty. So the creation of the subspecialty not only led to what we were seeking, which was teachers and researchers, it also created an impetus for the field to recognize that there cannot be a subspecialty in the addictions in the absence of a core body of knowledge in the primary specialty. As a result, psychiatry developed requirements for the addiction content of core curricula, as well as a requirement for the amount of time spent in clinical experience for every single graduating psychiatrist.

There still aren't enough addiction psychiatrists that every program has one, but many medical schools around the country do have such subspecialists. Nevertheless, curricula have been developed. And even in those programs that do not have a subspecialist in addiction psychiatry, there is a body of educational material to support the program requirements.

One of the advantages of having these requirements adopted by the board and the residency review committee is that if a training institution fails to satisfy the requirements, it may lose its residency program. So meeting the requirements no longer is optional; it is mandatory for every graduating resident. That would be the ideal for all medical specialties.

I offer this as a model and as a challenge to other specialties, so that their boards, their residency review committees, their

professional organizations, might come together and hopefully do some of the same things. Obviously, the exact content is going to differ for each specialty, but there is a core body of knowledge that won't be different and thus should be available to every graduate physician as they go through their specialty training.

Let me be clear: what we achieved in psychiatry required considerable time and effort, but it is very doable. The group of people at this conference have the expertise and authority to achieve similar progress in other specialties. In many ways, it is easier now, because the whole field has moved forward. The stigma is still there, but it isn't quite as bad as it used to be. We've seen tremendous strides in understanding the science underlying the addiction process. As a result, we ought to be able to make significant progress in graduate medical education.

Continuing Medical Education



Mark L. Kraus, M.D., FASAM, Yale University School of Medicine.

We've heard from an expert in undergraduate medical education, and we've heard from a leader in graduate medical education. One of the lessons I took from both is that the teaching of the addictions in medical schools and residency programs can be strengthened, and that progress is possible. Meanwhile, the majority of our attending physicians — the population I represent — have not received any formal training in screening and brief intervention for substance use disorders. Many have prejudices towards this population, not believing at all that substance use disorders are brain diseases, but just willful misconduct.

Moreover, today's private practitioners are putting in very long hours, because medical economics dictate the reality of "volume medicine" in order to cover the overhead costs and soaring medical malpractice premiums. There is precious little time to attend continuing education programs at their hospitals, as they used to do, and even less time to travel to conferences because of the obvious costs and loss of income that entails.

As a result, computer-based CME programs have gained popularity. But after a long day, or night, sitting in front of a computer to take a clinical course on addiction medicine may be the last thing such a physician would want to do.

Given these realities, how can we persuade these private practitioners to achieve the core competencies we're advocating: do we use the "carrot" of compensation or the "stick" of mandates?

Whatever training we offer as training in the core competencies for this group of physicians must be efficient: time-efficient, cost-effective, and clinically practical.

We have tremendous leaders at this meeting. We have people who have done serious work on this problem. We even have scientific evidence that supports what we're saying. Yet, despite all of these things and all the wonderful work that's come before us, the change we're seeking hasn't occurred. It just hasn't happened. We must ask ourselves and our organizations and our associations and agencies, why not? And how can it be righted now? How can we actually achieve progress? It's our responsibility…our responsibility.

When we leave this room, it's our responsibility to make sure change happens. I hope that each and every one of you leaves this room today not thinking that it can't happen, but saying that it will happen. Dr. Miller said it well: If it isn't going to happen here, it's never going to happen at all.

GENERAL DISCUSSION



David C. Lewis, M.D., Chair, Physicians and Lawyers for National Drug Policy.

Dr. Kraus is right: there has been a kind of repeat performance every decade since the 1970s. The first occurred at the Rockefeller University in the early 1970s. I happened to be there as a youngster, accompanying the chair of the Department of Medicine at Harvard, who brought me to listen. That conference decided that medicine — mainstream medicine — should play a larger role in treating the addiction.

The next effort, in the 1980s, was at an AMERSA conference at the Annenberg Center, where competencies were defined for each of the specialties to guide curriculum development. In the 1990s, there was the Macy Conference, which I chaired, and which addressed the knowledge needs of primary care physicians.

So, with all this effort, you ask: Why didn't something happen? Well, the culture wasn't right. So solutions have to involve changing the culture, and finding approaches that are attuned to the culture.

Each of past the conferences, as this one will, devised very specific approaches to changing the educational system. We can talk about carrots and sticks, but I think unless such changes are presented at the highest levels of the public health system in a forceful and continuous way — in the same way that we developed a real understanding of depression and mental health as disorders that could be treated in the mainstream of medicine — we're not going to get there.

No matter what we do here, I think we also have to make recommendations to the greater society — the greater culture — as to what we can do as health professionals to educate the public. And that must involve the government officials here as well as the health officials.



Beverly Watts Davis, Director, Center for Substance Abuse Treatment.

Dr. Lewis, I think you've made a great case for why prevention has to play a very primary role in what we do. It's what you describe as a strategy, a universal strategy, in communities that are trying to change norms and attitudes and behaviors. Physicians have an incredible ability to make that happen. In prevention, we're hoping that medical students receive better training in substance abuse prevention, which should be easy because it fits within their norms.

We can continue to treat people for alcohol and drug problems, but unless we begin to change the culture in which people live, we will always be left to treat these disorders rather than preventing them. Our hope is that we will be able to weave prevention into our recommendations for medical education — there are curricula that actually have begun to do that in medical schools. I hope you will take a look at prevention as an essential part of medical education.

Lawrence S. Brown, Jr., M.D., M.P.H., FASAM, President, American Society of Addiction Medicine.

Sometimes it seems to me that we avoid the most difficult factors that influence medical education. One of those is the influence of professional peers and teachers who say that this is or is not a good thing — that we have too many competing priorities to address alcohol and drug problems.

So I think we need to look at what influences the content of undergraduate, graduate and postgraduate medical education and medical practice. Because if we don't do that, we're going to continue to miss an opportunity to influence change.

Winston Price, M.D., President, National Medical Association.

Attitudes are influenced tremendously by the individuals who sit at the table. While it is encouraging to see a mix of individuals here to address the issue, we all know that the individuals who sit around the table to develop curricula or to decide what becomes mandatory for the educational process do not reflect all of America's populations. And so they lack some important perspectives about how substance abuse impacts the everyday life of various communities.

Even if you accept the fact that there are no socioeconomic or ethnic boundaries with respect to substance abuse, I think that medical students and residents are influenced by the social mix of individuals that they see on the floors. And when the majority of individuals that they see affected by substance abuse are not the individuals who are their peers in medical school or residency training, they're going to have a different view of what's important.

I can assure you that in municipal hospitals throughout the United States, and particularly in the African American and Latino communities, there is an inadequate mix of individuals taking care of the neediest patients, many of whom need substance abuse prevention or treatment. Until we address that social issue — until medical schools, residency programs, and faculty represent the true mix of America — we'll continue to sit around tables with very learned individuals trying to come up with solutions. So I hope that is factored into the mix as well in order to come up with realistic solutions.

Richard Suchinsky, M.D., Associate Director, Department of Veterans Affairs.

I'd like to go back to Dr. Madras' program at Harvard, which is remarkable achievement. What impressed me most is that it gives medical students an opportunity to interview patients in depth and to obtain a detailed history. That's something that usually does not happen. The opportunity for a physician, particularly a primary care physician, to be able to spend enough time with a patient to get a detailed history is beyond the life I know. Dr. Kraus alluded to that as far as post-graduate education is concerned. But in the actual practice of medicine, unless you are a psychiatrist who is actively involved in doing intensive psychotherapy, the chances of your being involved in a practice situation that allows you to do anything in-depth with a patient as far as addiction problems simply doesn't exist.

In fact, in most public institutions, even the role of the psychiatrist is seen as writing prescriptions. Any time he or she spends talking to the patient is considered wasted time. Tremendous forces are impinging on the profession right now, and they work against being able to intervene effectively with substance use disorders.

William O. Vilensky, D.O., R.Ph., J.D., Representing the American Osteopathic Association.

I have a rather unique perspective on this discussion. Twenty-three years ago, the New Jersey State Medical Board retained me as a consultant in a case involving two physicians who were overprescribing amphetamines. Both received harsh penalties, including license suspensions and fines in the range of $25,000 to $50,000. That's tantamount to the loss of their practices.

Andrea G. Barthwell, M.D., FASAM, former Deputy Director for Demand Reduction, Office of National Drug Control Policy.

Earlier this year, I was at a conference and heard Dr. Sheila Blume remark that we use "addict" or "alcoholic" as a descriptor, not a diagnosis. When we say someone is a 43-year-old alcoholic, we're using that label to describe who he or she is. Then we don't feel obligated legally, morally or ethically in the same way we would if we described the patient as a 43-year-old diabetic.

We will not have a significant shift in the way in which we approach education at all levels of training, or even in the provision of care, until we have shifted these terms from being descriptors to diagnoses. That really is the nature of our task here. People reject the call to leadership all the time, but even when it's rejected, the responsibility doesn't go away. As physicians, we have to assume that responsibility to lead.

We know that budgets are tight. There's no new money on the table for this. No one is clamoring for this content in medical education. Few doctors accept this role. The drug addiction treatment enterprise — not addiction medicine but the drug addiction treatment enterprise — is not welcoming. And even when physicians do care about this issue, we're generally characterized as indifferent to it.

But we physicians are constantly being required to adapt and adjust to new conditions, new paradigms, new settings. We can do this. What's needed is to find a way for physicians to contribute that's consistent with our skills, interests, abilities, and settings. We've got to start early and we've got to provide information at all levels of training and practice. And we've got to work to create a new standard of care, or the situation is not going to change. We've got to stay engaged for the long haul. For example, we have to find individuals who are willing to cultivate long-term relationships with legislators and other individuals. And we have to use our combined authorities to advocate for funds, to educate for change, and to communicate the need to do this.

But we're in a very unique situation here, because this is a White House sponsored event. We have attention at the top. We have concerned members of Congress who are represented here. While it is true that we've had similar meetings before, we've never before had all these conditions present at the same time. We've hit the jackpot this time.

So we need to leave here with a strategic plan or a blueprint for our work, and we need to work with our Federal partners to excite them about the potential for change. If we do that, whenever they can find a way to support our initiatives, they will do so. We have to be very clear in articulating what initiatives we want supported — what will get us to the place we need to be. And we have to be sure that when we go back to our organizations, we work together in ways that we've never worked together before. That's my vision for this meeting.

Afterward, I was asked what I thought of the outcome. I replied that I thought it was too harsh. And I said they should take a course on the proper prescribing of controlled substances, because doctors don't get this kind of training as part of the core curricula of osteopathic or allopathic medical schools. As a result, they're sitting ducks for the scammers and others who abuse or divert drugs. Plus, they don't know enough about medical recordkeeping to understand how to properly document what they're doing.

The New Jersey Board of Medicine and the Deputy Attorney General asked me to set up such a course in New Jersey. The Federation of State Medical Boards heard about the course and invited me to address one of their annual meetings.

The course has been successful. How do I measure success? Among the 650 physicians who have taken the course, there's been almost no recurrence of problems. I've since retired, and the course is no longer offered, but about a year ago we put it on DVD, and that has been successful too. So there are models of successful continuing education programs ***[also see the description of the model continuing education program in the Resources section of this report].***

PERSPECTIVES OF THE FEDERAL LEADERS

A number of distinguished leaders of the Federal health agencies participated in the conference and their presence provided momentum and direction to the work of the conference. Summaries of their remarks follow.



JOHN P. WALTERS
DIRECTOR, NATIONAL DRUG CONTROL POLICY

In my office, we believe in the institution of medicine — we believe in your work and achievements, which are manifested in the millions of people who are in recovery, the vast majority of people young and old who don't use and abuse substances — and in the communities that are reaching out and that are linking people together.

What we're about here is accelerating that effort. We're all frustrated at the number of people who still suffer. We're frustrated that the knowledge needed to help them is not always applied effectively in key sectors. I appreciate your willingness to work with us on trying to change that. Many of you know a lot about our work at ONDCP. Others have been less involved. As a brief sketch of how this fits into government policy, I wanted to give you the courtesy of trying to make that clear myself. The President has repeatedly said that what he wants done on this issue is a return to balance, a return to a focus on both reducing the demand for and the supply of drugs. He is aware from his time in government at the state level and his knowledge of what's happened nationally that we have had a history as a Nation of lurching from one thing to the other. As Americans, we want to have something that we can just do and get it over with and make it better. And we try to grab one thing and focus on that.

The problem is that we have to focus on the right things if we are to make a difference. In our field, we have lurched from a focus just on interdiction, to a focus only on law enforcement, and then just on prevention or treatment. What we learned in that process is that we have to do all of these things. If we take seriously the fact that this is a supply and demand problem, if we take seriously the health implications of the problem — which I think are more and more widely accepted — we have to be able to cut off the easy availability and the marketing of dangerous addictive substances, while at the same time treating those who are dependent and need services and also addressing the needs of our young people who are exposed to these substances while they are still passing through adolescence to adulthood.

Having said that we know a lot about what we need to do is not to say that we don't believe in research. At the Federal level alone, we are spending about a billion and a half dollars a year on research. One of the issues at the center of this conference is how we can take the knowledge derived from this research and make it more salient to those who need it and can use it more effectively.

We have had some successes. For example, when we started, the President set a goal of a 10 percent reduction in drug use in two years and a 25 percent reduction in five years. We met the first goal in 2003, when the Monitoring the Future survey reported an 11 percent decline in teen drug use from the baseline year of 2001.

This experience affirms our belief in the principle that when we take an issue seriously and commit to sustained action, we can achieve success.

We also have tried to build into our National Drug Control Strategy a greater appreciation of the public health dimensions of substance abuse. Those of you who work in the field know this very well. But I do not believe — and the President does not believe — that our policies have adequately reflected that understanding. I think part of the challenge involves education as well as programs and policies.

We are trying to educate people that there is a window of opportunity during youth, and that the initiation of use of dangerous addictive substances in the pre-teen and teenage years is directly related to the nature and magnitude of the problem we have today. The promise is that if we do a better job of limiting the number of young people who are exposed to substance abuse, we will not only stop the immediate consequences, but we can change the face of the substance abuse problem in the country for generations to come.

We've also used the concept of contagion in explaining some of the public health measures that we think apply. While we recognize that substance abuse is not spread by bacteria or other biological infectious agents, it is spread by behavior. When young people begin to abuse these substances, they bring that behavior back to their friends and encourage them to begin using. Because peer relationships are an important part of adolescent development, this kind of behavior is important because it forces young people to choose between emulating the drug-using behavior or losing their friends.

If we are going to be effective at dealing comprehensively with addiction, once young people break the boundary of prevention, we have to look at intervening. At that point, they have become the "agents of infection" for this behavior with their peers and siblings and other members of the community. So we're trying to identify areas where we can intervene. That's why the President has talked about setting aside additional money to support random student drug testing in schools, where communities make that decision themselves, to use a measure that we believe has shown itself to be effective in preventing substance abuse among adults in the workplace, the military, and transportation safety positions.

What it also allows us to do is to create a consensus in the community that we're not going to look the other way, and that we are going to use some of the tools that we have used to change the face of victimization of childhood disease in this regard, in which many states require testing for tuberculosis and other infectious diseases as a condition of entering school. We know that the infected student needs to get care if he or she is to have optimal chance of recovery. And we know that, if left untreated, he or she will infect others.

What testing does in the communities where I have seen it implemented is that the community comes together and says, "We're not going to look the other way anymore. We're not going to not do what we can do. We're not going to watch another child be victimized."

We also are trying to help shape wider perceptions with a public education effort that many of you have seen in our National Youth Anti-Drug Media Campaign. In addition to the prevention messages that we have used in the past and will continue to use, this year we began to sponsor a series of ads focusing on intervention for young people and for their parents to break through the stigma and denial that is a hallmark of this disease. The terrible thing about this disease is that the people who suffer from it usually do not recognize their problem. We know that, but what are we going to do about it?

We want to fulfill the vision the President offered in his State of the Union address, when he challenged us to provide treatment to those who suffer from substance use disorders. The President believes that you can't be serious about demand reduction if you aren't going to treat the people who have the disease of addiction. We all understand the importance of prevention. But the President understands that there are millions of people in need of treatment and in recovery. We know how to do this. We ought to demand from ourselves that we do it more aggressively and on a wider scale.

The President asked my office to estimate the "treatment gap." The Household Survey told us that, each year, there are roughly 100,000 Americans who seek treatment but do not receive it.

Next, the President asked the average cost of a treatment episode. At the time, Federal data showed a cost of $2,000. And that's how we came up with the $200 million request for the President's Access To Recovery program: It's $2,000 per treatment episode, multiplied by the 100,000 persons who need treatment but cannot obtain it, for a total of $200 million. In short, the President proposed to close the treatment gap unilaterally with a Federal appropriation. We've already received the first $100 million, and I'm confident we'll get another $100 million.

Our plan uses vouchers not only to pay for treatment slots, but to purchase services for individuals. Hopefully, the plan will allow more people to become providers, including mainstream health organizations in addition to those who already are providing specialized treatment services.

The voucher program allows us to help the states fill treatment gaps. Whether the issue is support for families with dependent children, or job training, or help with housing and other kinds of transitions, the voucher program is designed to fill some of those gaps to allow the existing service providers to deliver more comprehensive, effective care. In addition, the program allows states to add particular kinds of capacities to meet local needs. Because we're interested in measuring outcomes, we also want the states to provide an evaluation component.

I started out by talking about the 100,000 persons who want treatment and cannot find it. But what about everybody else? The same Household Survey that gave us the 100,000 estimate tells us that roughly 90 percent of persons with substance use disorders are in denial. They are convinced that they don't have a problem and don't need help.

With our intervention ads on television, we wanted to start a conversation through which we can change the public's understanding of our societal responsibility with regard to substance abuse. Not just the important matter of reducing stigma, but using stigma in a different direction. For example, we want to say that there is something wrong if you look the other way when you know someone is suffering from substance abuse. If you understand that this is a disease, a decent society does not let someone get sicker without offering help.

This is not about minding your own business. This is not about a lifestyle choice. This is not about freedom in a kind of insane way that means self-destruction. This is about recognizing the presence of a disease, and that an important dimension of that disease is denial. One way to get help for those who suffer from this disease is for others to put an arm around them and say, "We're not going to let you continue to get sicker. We're going to support you in getting well." We know that where such care is available, people do get help and do become important contributors to society. In fact, individuals who are themselves in recovery are some of the most effective at reaching out to others.

We also are concerned about the growth in the diversion of prescription pharmaceuticals as sources of drugs of abuse. We believe that these medications can be a Godsend to those who suffer from chronic pain. But the growth in abuse of these medications is something we need to come to grips with. Some of that has to be done with regard to education. ONDCP is supporting efforts to help states set up prescription monitoring systems, which will allow physicians and pharmacists to see whether legitimate prescriptions have been written, to see whether the individual involved has been obtaining excessive amounts of prescription medications from multiple sources, and to allow us to prevent prescription drug abuse and trafficking.

The same Household Survey that told us we had achieved declines in teenage drug use also warned us that one in 10 high school students reported using Vicodin without a legitimate medical purpose. That's a pretty alarming rate of abuse of a particular prescription product. As we see the introduction of more powerful and necessary substances for the treatment of various conditions, we'll also have to deal with the diversion and abuse of those drugs. I think part of that requires education and working with institutions that can be of help.

We're also going after those who divert drugs through Internet purchases of pharmaceuticals. If you have an e-mail account, I'm certain you have been offered controlled substances without the controls. We are working to shut down such sites and to bring those who operate them to justice. We are not opposed to Internet marketing of over-the-counter and prescription drugs if it's legal. But obviously if you've seen some of these e-mails, the intention is to suggest that you can do something that you shouldn't be doing if you simply click on their link.

We already know, as you know, that individuals who abuse alcohol and other drugs are more likely to be victims of accidents and violence, and to experience chronic illness. We know that these individuals require a variety of care, much of which is supported by public resources. They need support in the workplace, in the family, and in their faith communities. They need support through drug courts and diversion programs. They also need help from the health care community and medical institutions, which have an opportunity to reach out.

We know that, of the estimated seven million people who need addiction treatment, about 23 percent are adolescents. Many of these young people regularly see pediatricians and family physicians, or they end up breaking arms and legs and coming to emergency departments. If we fail to screen them and get them the care they need, an enormous number of lives will be progressively damaged as time goes on.

What do we have in mind? And what would we like the medical community to consider, based on our conversations with many of you and the conversations we hope to have during this meeting?

First, we'd like to find better ways to use medical institutions to help us address substance abuse. Medical schools and organizations already provide enormous support for research, for prevention, for intervention, and for treatment. With our partners at the Department of Health and Human Services, we recently awarded a series of grants to support the teaching of screening, brief intervention, and referral techniques in major medical centers across the country.

It's a small trial. I recently visited one of the grant recipients — Ben Taub Hospital in Houston — where staff will screen every patient coming through the shock trauma center, which sees about 250,000 patients a year. Every one of them will be screened. Those who need substance abuse treatment will be referred to appropriate levels of care.

Over the course of the award period, Ben Taub Hospital will expand the screening beyond its shock trauma center to its satellite health clinics, resulting in the screening of roughly a million people a year. We believe that's the future, and we'd like to see that happen in more places. It requires a linkage. It requires support for care. It requires applying the research and knowledge we have that intervention is inexpensive and effective.

Second, we are asking for your help in addressing the need to improve the initial preparation of medical professionals, as well as their ongoing education. Most people that I talk to in medicine sooner or later lament that the level of training in and understanding of substance use disorders is too limited. As a result, many physicians do not have significant exposure to teaching about the identification and management of substance use disorders during their undergraduate and graduate education. For many, their continuing medical education does not include systematic exposure to professional information that would help them acquire the knowledge and skills they need to help their patients who are at risk for or suffering from these disorders.

I know that some of the obstacles to changing this situation involve more than lack of knowledge. Some are based on the idea that, if I turn over this rock and find what I expect to

find, what am I going to do? How do I refer people? How do I deal with a non-compliant patient when I understand that denial is a central feature of their disease? Well, that's a part of education. As you know better than I, substance use is not the only area where this phenomenon exists. But we have to address it.

In this meeting, we hope to build on what you've already done. We know that a lot of work has been done. For example, the American Medical Association's policy statement on the physician's responsibility for dealing with substance abuse was adopted in 1979 and disseminated through grants from the Department of Health and Human Services. The 1994 Macy Conference on Training Primary Care Physicians About Substance Abuse — chaired by Dr. David Lewis, who is with us today — took additional important steps. Project Mainstream — which represents a collaboration between the Association for Medical Education and Research in Substance Abuse, the Substance Abuse and Mental Health Services Administration, and the Health Resources and Services Administration — also was a critical step in moving this process along. In 2002, Project Mainstream published a series of detailed objectives for physician knowledge and skills in addressing substance use disorders.

Our task is to implement this important work. And we'd like your advice on how we can do that and do it as aggressively as possible.

I've talked longer than I intended to, but I wanted to give you a sense of what we see that we're trying to do, how we're trying to bring the parts of the Strategy together. We're not just doing a bunch of independent things; we want them to add up to something. We're after a kind of institutional integration, and we believe it's possible. More important, my boss, the President of the United States, believes it's possible. And he expects us to do it.



Nora D. Volkow, M.D.
Director, National Institute on Drug Abuse

Untreated addiction has devastating consequences. It has been estimated that abuse of alcohol and legal and illegal drugs costs this country $486 billon a year — $486 billion! The costs are so large because the consequences affect individuals in a wide variety of ways, including the disruption that the process of addiction produces in behavior and in the life of the person, as well as the medical consequences across the whole body of the individual, and the social effects for the individual and society — all of which directly affect the economy.

We are here to talk about how we can engage the medical community in general to help us deal with the problem of addiction. One of the problems has been the belief for many years that drug addiction was a person's bad choice in terms of making the decision to do something by their own will to take drugs. However, it is now clear that this is not the case. While choice is involved the first few times an individual decides to take a drug, once that person becomes addicted, it's no longer a choice.

I always put in parallel the paradigm that no one ***chooses*** to become addicted, just as no one — ***no one*** — chooses to develop lung cancer. Of course, the person does initially choose to smoke and then may end up with lung cancer, but it is not a "choice." The same process applies to addiction.

With technology such as imaging, it has become evident that drug addiction — like any other medical disease — involves very specific changes in the function of an organ: in this case, the brain. The brain is much more complex in its functioning than any other organ. This is illustrated in **Figure 1**. I am showing you images of a normal person and of a person who has suffered from a myocardial infarct. No one will doubt that a myocardial infarct is a disease; you can do imaging and see exactly where the damage to the heart is.

Figure 2 shows a healthy heart. You see the consumption of sugar; that is what the red is all about. When the heart is damaged, the damaged tissue can no longer consume glucose sugar. This is how you can actually and very accurately depict what the abnormality is. The result with the heart is very easy to predict. The heart just pumps; it's a pump. When you have damage to the tissue, it no longer pumps, and the blood is not distributed throughout the body.

The brain is much more complex. But just as you can document exactly where the abnormality is with the heart, you can do that in the brain of an addicted person. And that's what you see in **Figure 3:** this is the brain of a normal individual and this is the brain of an addicted person. In the brain of the addicted person, we see a very significant decrease in function in glucose consumption.

It so happens that this area of the brain is the area that ultimately allows us to exert inhibition of our actions. It's like the brain of our system. So when we are faced — and we all are faced on a daily basis — with things that we want to do but know we shouldn't do, our ability to control our urges is basically a function of how well this area of the brain is functioning.

Well, guess what? This area is not functioning well. It's as if you're driving a car and you see a cow in the middle of the road. You want to brake, because you don't want to hit the cow, but your brakes are not working and you are going to hit the cow. That's exactly the same process in terms of what

occurs in the brains of individuals who are addicted, because one of the targets is the area of the brain that allows us to assert inhibitory control.

This could explain, for example, why a drug addict tells you, "Doctor, I don't want to take the drug. I want rehabilitation to work. I promised my wife I won't do it. I promised my children I won't do it." The patient then leaves rehab, and within 24 hours, he's taken the drug. And the patient says, "I didn't even realize it."

This phenomenon can be very difficult to understand because when we're not addicted, we are able to control our actions. It is very difficult to comprehend that someone cannot do so, and this has caused difficulty in conceptualizing drug addiction as a disease rather than a wrong choice. We all are used to making choices, and we don't understand what it means to have an area of the brain that allows us to make choices disrupted by the effect of exposure to a drug.

Another aspect that is extremely important in terms of the involvement of the medical community is that drug addiction is not just a disease, it is a developmental disease. That is to say, it is a disease that begins early in development of the individual — usually during adolescence and, unfortunately, sometimes during childhood. This is illustrated in **Figure 4**, which plots the age at which young people develop addiction to marijuana. As you can see, the age when the diagnosis is first made peaks around 18 to 21 years of age. Even though an individual can become addicted at almost any age, the probability of becoming addicted decreases dramatically after 25 years of age.

Why is this so? It is likely to be a function of multiple variables, including the fact that during the developmental period, the brain is not yet fully formed. And areas of the brain, such as the orbital frontal cortex and the frontal cortex, are not fully developed and will not develop fully until the early twenties. Thus, an area that allows the individual to control behavior and exert inhibition and judgment is not properly formed.

The other aspect that is very important for us to understand is that the effect of a drug on an adolescent's brain, in terms of the plastic changes produced, are different from the effects of the same drug in an adult. Although this area has not been properly investigated, recent animal studies are showing that when nicotine is administered during adolescence, it produces long-lasting changes that are not seen when the same dose of nicotine is administered to an animal that no longer is an adolescent.

Moreover, the changes in the adolescent animal are associated with a higher propensity to administer nicotine. Of course, this could explain why adolescents become addicted to nicotine much faster than do adults. The research shows that adolescents require a much shorter period of time and much lower doses of cigarettes to become addicted. The reason I am highlighting this fact is because it brings forth a unique opportunity for the clinical community — especially pediatricians — to do very early interventions, not only to detect early drug use but also to make an early diagnosis and to guide the patient to proper treatment.

What do we know about why we become addicted? This has become a very important aspect of our research because it provides us with targets, both for prevention and for treatment. In fact, we know a lot. **Figure 5** illustrates one of the processes that are very important in terms of triggering the changes in the brain that are produced by chronic exposure to drugs, leading to addiction.

That is to say, people take drugs because of chemistry rather than that the drugs make them feel good or help them experience new things. Drugs have the ability to produce these sensations because they increase levels of the chemical dopamine. All drugs of abuse — both legal (like nicotine or alcohol) or illegal (like marijuana or cocaine) — increase the level of dopamine in the brain.

Now, dopamine is not present in the brain to make us feel good when we take a drug. Dopamine is in the brain to signal events that are salient to our survival. So when an action is extremely important to survival, dopamine serves as a liberator. Think for a minute about the things that actually are important for survival. The first is food. When an individual sees food or eats, the level of dopamine goes up. That's the way the brain signals that this is salient and that the action should be repeated. Sex is associated with an increase in dopamine and that, in turn, motivates the behavior to seek a partner and to ensure that the species will procreate.

As primates, social interactions are among our most important drives. They are extremely important because for our survival we need one another. That enhances dopamine. It so happens that drugs directly activate the system through which nature assures that we will repeat behaviors. But the drugs do this in a way that is qualitatively and quantitatively different than other dopamine enhancers.

Look at **Figure 6**, and what do we see? First, that these stimulant drugs will overwhelm any natural reinforcer. The natural reinforcer has no chance to compete with a stimulant that will be perceived as salient, as a drug is. But our brains and our biological systems try to maintain a balance, which in medicine we call ***homeostasis***. A change like those induced by drugs leads to adaptations as the brain tries to compensate. This is what initiates the process of drug addiction: the adaptation in an effort to achieve balance.

So what do we see then in the brains of people who are addicted? When you look at the systems that are regulating the signaling of dopamine **(Figure 7)**, there is a cell transmitting

dopamine to another cell. This transmission is modulated by receptors. When people become addicted, the receptors shut down as part of the body's effort to maintain balance. We see this with cocaine, methamphetamine, heroin, and alcohol. So one of the brain's adaptations that triggers the whole process of addiction is an adaptation brought about because of increases in dopamine, which leads to the very significant reduction in receptors. That reduction, in turn, affects the way the individual responds to natural stimulants. This is one of the processes that ultimately lead to the compulsive use of drugs. But drugs not only produce addiction, they also affect the body in other ways.

Director Walters asked how we can make the process of addiction relevant to physicians — to pediatricians, neurologists, oncologists — to physicians in every specialty. I believe the way to make it relevant is to educate physicians about the effects that drug abuse has on other medical diseases and conditions in the patients they are treating.

That information is very well recognized for cancer. No one doubts that smoking, whether one smokes nicotine or cannabis, increases the risk for a wide variety of cancers. Much less is known about the involvement of drug abuse in other diseases, and that is extremely frustrating. For example, we know that drugs have a negative effect on pulmonary function. But when I looked for studies of the effects of drug abuse on asthma, which is a problem that is escalating in children throughout the United States, I couldn't find a single article in PubMed that examines asthma and substance abuse.

You may say that's because it's not relevant. But of course it's relevant. Smoking is likely to affect the prognosis of these patients. Moreover, when we give medications to treat asthma, many of the medications have similar pharmacological targets as drugs of abuse such as cocaine and amphetamines. So why are there no studies?

My perspective is that we ought to link the consequences of drug abuse to other medical problems. Then it will become relevant for a pediatrician to ask a kid who has asthma whether he has ever tried drugs. Why? Because it will determine the prognosis and the way that child will respond to asthma medication.

The same thing pertains to a wide variety of medical disorders. For example, there is increasing evidence that drug abuse may trigger the expression of psychiatric disorders. We're faced right now with a remarkable increase in the number of children and adolescents who are being referred for the treatment of psychiatric problems, at the same time we're seeing an increase in the use of neurotoxic drugs. We also know that drug abuse contributes to infectious diseases and that, in young people, one of the main causes of myocardial infarction is abuse of stimulant drugs.

Learning disorders and obesity are conditions that seem totally disparate, but all are on the increase, and drug abuse is a contributing factor. Mothers who smoke during pregnancy have children who are two to three times more likely to be obese in childhood, adolescence, and as adults. This is something that we didn't even know until recently. Cerebral vascular accidents (strokes) are related to intake of drugs and alcohol, and we didn't know that until recently. We don't really know the magnitude of the impact of drugs on rates of traumatic injury. We know that it's quite large, but we really haven't looked at it carefully.

To me, one of our priorities should be to present this evidence in ways that physicians — whether or not they believe that drug addiction is a disease — cannot ignore. Addicted individuals take drugs because they enter their brains and produce increases in dopamine. But the drugs don't affect only the brain: they go all over the body and produce direct effects on multiple organs. That is why we, as physicians, must ask questions. We can no longer keep our eyes closed when it is so obvious. **Figure 8** illustrates exactly how obvious it is.

Figure 8 depicts a whole body image of a normal person, showing an enzyme that is important in protecting the body from toxins. There are very high concentrations of the enzyme in the brain, the kidneys, the liver, and to a certain extent, the heart. You also see it in the lungs, though the signal is not as strong.

Figure 9 is a whole body image of a smoker. You can see the dramatic reduction in the enzyme. Basically, there's none in the brain, and almost none in the heart. Look at the kidneys. We could not detect any in the lungs. And this, of course, provides an example of why cigarette smoking increases the damaging effects of toxins and affects overall health.

Smoking also has another aspect, and that is related to the effects of drug use during pregnancy. This has been very well recognized for alcohol, but much less so for other drugs. We're concerned about mothers who use cocaine or marijuana or other drugs during pregnancy. We also should be concerned, of course, about mothers who smoke. Why? Because at least 11 percent of pregnant women smoke. Eleven percent! The epidemiologic data tell us that women who smoke have children who have lower birthweights, have higher rates of prematurity, are much more likely to die of respiratory syndrome, and have a much higher risk of conduct disorders and early experimentation with tobacco. Smoking is the main risk other than genes for development of childhood ADHD. Children of mothers who smoke during pregnancy have, on average, lower IQs and are at higher risk for obesity.

This is another area where the medical community could play an extremely important role, by conveying this information to, and doing a complete evaluation of, the woman who's pregnant. That would be doing prevention, not just for drug abuse but for a wide variety of medical problems in both mother and offspring.

Infections: here's another connection that's well known. Over time, injection drug use has contributed to 30 percent of the cases of HIV/AIDS, and continues to do so. But we're seeing another contribution of drugs, and that is sexual transmission among individuals who are under the influence of both legal and illegal drugs. Here, we see not only the drug's effect in altering mental state so that individuals make decisions they wouldn't otherwise make, but also the effects of drugs combined with infectious agents.

This effect is illustrated in **Figure 10,** which depicts a normal brain. This image measures a marker that shows whether the dopamine-producing cells are functioning. The other image is of a person with HIV, and there is an obvious reduction in the markers for dopamine-producing cells. The change is not radical, but it is clearly present. Look at the person with HIV who is also taking drugs, in this case cocaine, and you can clearly see the that the damaging effects of HIV are intensified by the drug.

This combination of drug and infectious agent is beginning to be recognized as producing not oxnly an additive effect, but perhaps even a synergistic action. And that's another reason that physicians can no longer ignore the importance of drug abuse.

There are many other examples I could put forward, but I'm not going to belabor the point. I just wanted to illustrate how obvious this is, but that we have not been able to transmit this information to the medical community.

Now, I want to concentrate on another big challenge confronting us. Director Walters alluded to it. We have developed medications and behavioral interventions that are useful in treating addiction, yet many people are not seeking treatment. Of the 21.6 million Americans who are addicted to or abuse any illicit drug or alcohol, only 10 to 15 percent are seeking treatment. So 85 percent of the population that is addicted to drugs or alcohol are not seeking treatment, and that is a challenge in terms of what we can do to bring them into treatment. As Director Walters pointed out, the medical community has a unique opportunity to intervene to help these individuals overcome their denial and admit that they have a disease and need treatment for it. The involvement of physicians could have a major impact on this serious problem.

Finally, **Figure 11** shows another area where we need medical community involvement. One of the areas where we're seeing increasing drug use involves prescription drugs, particularly opiate analgesics. And that requires engaging the medical community in yet another aspect of drug abuse prevention and treatment.

So the challenge is: How do we engage the medical community so that medical students and residents are trained in the recognition and evaluation of drug abuse and addiction? If we take advantage of the extraordinary infrastructure of medical education, not only the drug addiction community will be served, but also the medical profession in general. And with that, I want to thank you for your attention.

QUESTION ***(From Dr. Jeffrey Samet):***

You mentioned medical schools as a key ingredient.

I think it's terrific that a mechanism would be developed for improving the training of medical students and residents about alcohol, or about drug abuse, but one must remember that alcohol and drugs frequently go together, so perhaps there should be some kind of blending mechanism to support that. Because truth be told, real patients use both at the same time.

ANSWER ***(Dr. Volkow):***

What you're saying is something that has been obsessing me very much as a clinician: the notion of training clinicians who are able to deal with both drug addiction and alcoholism. Because to have it separated is the most inefficient way that we can spend our dollars.

I think that one of our targets is to help develop a curriculum to train clinicians (as well as nonclinicians, who account for a very large percentage of those who provide treatment) to be able to deal with both drugs and alcohol, so that we don't have to send patients to different places for care. I think that would be an extremely important initiative to put forward.

QUESTION ***(From Dr. Winston Price):***

Within certain populations, substance abuse is a disease of society. As a pediatrician, I have adolescent patients who are substance abusers. When I say, "You realize what this will do to your body, what this will do to your family," their response is, "This is better than the situation I'm going back to in my community." That's more damaging to them than the substance abuse.

ANSWER ***(Dr. Volkow):***

You are touching on an extremely important aspect of addiction, and that is the involvement of the environment both in terms of obvious factors such as drug availability and more subtle factors such as stressors, whether they are acute or chronic.

Through research, we're starting to understand that environmental factors, such as lack of physical contact with parents, can leave children more vulnerable to stressors, which then facilitate the acquisition of drugs.

It's clearly a complex interaction. Now, how do we deal with it in terms of both prevention and treatment, in terms of recognizing what are those variables so that you can do interventions that counteract the deleterious effects? What we're doing in research is trying to understand how these environmental factors produce changes that facilitate the acquisition of drugs.

Unfortunately, if a child is born into a family structure where the parents are not there, we're not going to be able to erase that. But we can provide an infrastructure that helps to compensate. We're dealing here with a chronic disease, and the extent to which a person is going to be able to stay clear of drugs is going to be partially mediated by the environment in which he or she is situated. Hence the importance of community involvement.

QUESTION ***(From Dr. Mark Kraus):***
The emphasis seems to be on medical school and residency training and education. Yet the population is being taken care of by attending physicians, and they're the ones who haven't had a lot of training. What can NIDA and NIAAA do to support clinical knowledge transfer to the attending population?

ANSWER ***(Dr. Volkow):***
At NIH, our mission is to support research. Our mission also is to provide knowledge. Now, how can we help with what you're asking, because we do have an obligation to help? We can start by providing the knowledge. For example, I brought up the issue of prescription drug abuse. In this country, we really do not know how to treat chronic pain. As unbelievable as it may be, the long-term use of opiates for the treatment of chronic pain has not been properly investigated. Thus, you see an extremely important opportunity for us to develop the research and, from that, the guidelines for how to treat pain patients properly to minimize the risk of addiction. That's an example of where we can help by providing knowledge.

We also are partnered with SAMHSA, which has the authority to develop training for clinicians. We've partnered with them to ask what is the best strategy to bring research information to attending physicians so that it is incorporated into practice? We can translate that into a services research question.

Another way we can help is by developing strategies to incorporate new knowledge into the repertoire of attending physicians in such a way that the knowledge is utilized, because the information is there, but clinicians are not using it. And that is a research question: Why are they not using it? What active ingredients do we need to identify to optimize the chances that it will be used? That's the way I think NIH can and should participate.

QUESTION ***(From Dr. Norman Wetterau):***
I'm involved with the American Academy of Family Physicians. I want to thank Dr. Volkow for your letter of support for a resolution that was before our Congress of Delegates, calling for more physician education about alcohol and drugs. I want to thank you and to let you know that the resolution did pass, and we have representation at this meeting and are looking forward to doing things.



Ting-Kai Li, M.D.
Director, National Institute on Alcohol Abuse and Alcoholism

As everyone in this room knows, alcohol abuse and dependence and drug addiction go together in the general population, as well as in the clinical population. What I'd like to do today is to give you a view from NIAAA and discuss how our work relates to what you hope to accomplish by the end of the day.

Let me start with a brief synopsis: the National Institute on Alcohol Abuse and Alcoholism was established in 1973. Its mission was primarily to provide treatment or prevention services, training, outreach, and education. Research was really a relatively minor component. In 1992, the research institutes — NIMH, NIDA, and NIAAA — were transferred to the National Institutes of Health, while the service delivery functions were assigned to the newly created Substance Abuse and Mental Health Services Administration (SAMHSA).

Our current mission at NIAAA is to support and promote the best science on alcohol and health for the benefit of all, by doing the following:

1. Increasing our understanding of normal and abnormal biological functions and behavior related to alcohol use;
2. Improving the diagnosis, prevention, and treatment of alcohol use disorders; and
3. Enhancing the quality of health care.

To understand alcohol drinking and its effects requires cross-disciplinary approaches in research. These range from studies on molecules and cells through animal models, from human laboratory studies, to population-based studies. At the same time, in order to develop efficacious and effective treatment and prevention strategies, we need multidisciplinary approaches. Which also requires multidisciplinary collaboration among investigators.

Quality care requires translation and dissemination of new knowledge to health care professionals and the public at large. NIAAA has had active partnerships to sponsor career development and faculty development programs for 20 years. NIAAA has continued to support education of health professionals and the career development of educators and clinical investigators in a number of health professional schools.

Here are some examples of recent activities in the health professions education that NIAAA conducts. First, we've collaborated with the Research Society on Alcoholism to develop a multidisciplinary curriculum for young biomedical scientists,

which is a cross-disciplinary training exercise. Second, we've developed curricula for social workers, emergency department and primary care physicians, as well as pastoral counselors. (Some of the people involved in these programs are here at this conference.) Finally, we've developed and are further improving a health practitioner's guide for screening and brief intervention with patients who have alcohol problems.

We also continue to support dissemination of new evidence-based knowledge. And we are continuing to make presentations at universities and professional societies and to support publications, such as *Alcohol Alert*. Then there are publications about research, reviews, and other commentaries in professional journals. And we do have a small but active outreach program that offers brochures and pamphlets targeted to health care practitioners and the public.

We support grants for research and training. The "R" series are for research, and the "K" series are for career development. There's one in particular that is underutilized, but it's on the books. It's a KO7 award for scientists and educators, which is meant for development and training of young faculty. We also have a contract arm that does research translation, research dissemination, and the printing of materials.

Now, with all of that, where are we in terms of the quality of care for alcohol use disorders? This is really the topic of today's discussions. The answer is seen in a recent paper by McLellan and coworkers **(Figure 1)**, who took 10 different acute and chronic conditions and developed what they considered to be perfect quality of care, which was given a score of 100. Then they reviewed cases and assigned scores to the care actually delivered. Figure 1 shows the scores for various disorders. Breast cancer, low back pain, and depression score fairly well, but even the best is only 80 percent. Where is alcoholism treatment? It's dead last. On the quality scale, alcohol treatment scores a 10.

So something isn't working, but what is it? The accepted barriers to high-quality alcohol prevention and treatment include attitudes, values, beliefs, and perceptions on the part of health care professionals and the public at large; stigma; and the belief that alcohol and drug addiction are moral failings and not diseases. On the whole, we don't understand the burden of alcohol and drug use disorders. There is bias on the part of physicians because their training relies on inpatient clinical populations.

Another factor is the lack of knowledge that treatment and recovery are successful. And then, of course, there is the lack of skills in prevention and intervention: if you don't have the skills, you can't use the skills. There also is a lack of knowledge about what resources are available in the community. And finally, as Tom McClellan has pointed out, there is a weak and insufficient treatment infrastructure. So there are multiple factors contributing to the problem.

From NIAAA's perspective, what kind of new knowledge might influence physicians' attitudes and beliefs about the quality of care of alcohol problems? First, physicians need to understand and be very aware of the impact of alcohol use disorders on personal health, public health, and the economy. Second, they need to recognize the prevalence of alcohol use disorders in adolescence and how it plays out across the lifespan. Third, physicians need to understand that there is a relationship between the quantity and frequency of drinking and the risk of harm. Fourth, they need to know about treatment success rates from the recent literature. Finally, they need to understand something about recovery in the general population and not just clinical populations.

It's also important for us to recognize how the public in general consumes alcohol. Alcohol is illegal for underage populations, but it is legal for adults. One-third of the population does not drink at all, while two-thirds do. Three times more males drink than females; there's an interesting scientific question as to why this is so. It may not be entirely cultural; there may be some biological explanations as well.

We also know that 60 percent of alcohol is consumed by 10 percent of the population. You might say that the 10 percent is the target population we should look at. However, a much larger part of the drinking population is at risk for alcohol-related problems. **Figure 2** contains data from a recent epidemiologic survey, and shows something about drinking patterns and how they relate to problems. The major problem is exceeding the daily limit, which is four drinks per day for men and three drinks per day for women. Those who exceed these limits, even on an infrequent basis, are at increased risk for alcohol abuse and addiction. Drinking a lot of alcohol in a short period of time impairs mental capacities and motor function. When it happens infrequently, there is a very modest increase in dependence. When it happens more often (once a week or more), the risks go up, so that one in four persons in this category have problems. These data provide a pretty good guide in terms of screening and brief intervention and where a physician should be looking.

Dr. Volkow spoke of the importance of concentrating on the developmental trajectory of substance abuse, including alcohol. The data in **Figure 3** are from the same database. When we look at the age of first use of alcohol, we see two peaks. The larger peak corresponds with the age when young people attain the legal age or go to college. But there is another good-sized peak of people who start to use alcohol very early in life.

Those who do this become alcohol-dependent faster. If you first start drinking at age 13 rather than age 20, you have an almost fourfold greater risk for developing alcohol dependence. The risk is further increased if you have a family history of alcoholism. One reason is that underage individuals drink

differently than adults: they drink less frequently, but they drink more per occasion. As a result, the data show that the onset of alcohol dependence is concentrated in the 18- to 25-year-old age group. There are important public health as well as medical implications in this kind of developmental trajectory.

In the hospitals and clinics, we're used to looking at alcoholism as a chronic relapsing disorder, which it is in adults. But that is not addressing the underlying problem, which occurs at a much younger age. We don't see that in the hospitals, but we do see it out in the community, and this is a problem we'll need to address.

There are some other facts that are not widely known that suggest health professionals have a powerful role in motivating high-risk drinkers to enter and successfully complete treatment. Studies show that heavy drinkers are more than twice as likely to reduce or moderate their drinking after a screening and brief intervention. This finding applies to both men and women.

It's also important for physicians to understand that although alcoholism is a complex disease, the relapse rate in treated individuals is not very different from that seen with other common diseases such as hypertension, diabetes, and asthma. Treatment success rates for alcohol dependence are in the range of 30 to 60 percent, depending on whether the outcome measure used is continuous abstinence, or reduction in the number of drinks per day, or improved social functioning (the 30 percent figure is for continuous abstinence).

Finally, **Figure 4** shows data yet to be published (it's in press). It is based on people who have been dependent and looks at how they're doing 5 and 10 and 20 years later. This is a cross-sectional study, of course; what we need are longitudinal studies. But this is an interesting profile: over the years, the number of people who are dependent goes from about 55 percent all the way down to less than 10 percent. Some are in partial remission, and some have become abstainers. Some even are asymptomatic drinkers.

To understand the factors that contribute to these data is vitally important for us in terms of treatment and prevention strategies. The data also represent important information for physicians and other health professionals.

Now, how do we overcome the barriers to high-quality care to prevent and treat alcohol problems? I would submit that current research and education initiatives are necessary but not sufficient. So from the NIAAA perspective, we have a proposal: NIAAA would be supportive of a collaborative program for the development of core faculty in schools of health professions education. The programs would have a career and a scholar-investigator component. We see this as a way to develop faculty who are knowledgeable about this area, and who are able to invest in both teaching and research. A career clinical scholar and investigator would be a key member of the core faculty who is responsible for education, for conducting research on education and health services research, and for mentoring the next generation of clinical scholars and investigators.

We believe that the KO7 mechanism, which already is on the books, is ideally suited for both career development of young clinical investigators and the mentoring component of such a program. We are willing to invest in this over the next nine years in a collaborative manner, but it will require buy-in from the schools of medicine and other health professions.

In summary then, I want to say that, throughout its history, NIAAA has supported health professions education through a variety of mechanisms. This proposal to further invest in the goal of high-quality alcohol prevention treatment and care can be done best in collaboration with the professional schools and with other Federal agencies and private sector organizations. We look forward to your discussion of the proposal and to your collective response. Thank you.



Jeffrey Runge, M.D.
Administrator, National Highway Traffic Safety Administration

Here is what brings us together: If you go to the CDC's Web site, you will find a file that shows the 10 leading causes of death in the United States. Under the World Health Organization's conventions, CDC lumps all unintentional injuries into one group. This always bothered me, and I wanted to separate out motor vehicle crashes. I could never do that until I actually had a staff to do it; I now have that staff and they have done it.

Figure 1 shows what happens when you separate out motor vehicle crashes from other causes of injury: Of the 10 leading causes of death in the United States by age, motor vehicle crashes rank number 1 from the toddler age group (just over age 2) through 34 years of age. They are overtaken by cancer and heart disease as a cause of death only in the 35 to 44 age group.

When I talk about traffic injuries as a public health problem, people agree emphatically, as they do when we describe AIDS as a public health problem. But these data show the situation graphically. We are consuming our young with motor vehicle crashes, and the cause boils down to three things: impaired driving, failure to wear a safety belt, and speeding.

What I'm going to focus on today is impaired driving and the

strategy we have chosen to address it. The reason that we are here, obviously, is because we are concerned about a segment of the impaired driving population that will not respond to prevention messages. They will not respond to social norming. They do not respond to anything except their physicians and, we hope, addiction treatment. But to treat them, we have to find them.

This is the fifth meeting that I've been involved with, and that NHTSA has been involved with, on screening and brief intervention in primary medical practice. In 2000, NHTSA sponsored a meeting on developing best practices for emergency care of the alcohol-impaired patient. The meeting occurred before I arrived at NHTSA, but I was very much involved in the community. In 2001, the CDC and NHTSA sponsored a meeting on alcohol problems and emergency department patients; the proceedings are available on CDC's Web site. In May 2003, we sponsored a meeting on crossing barriers in emergency care of alcohol-impaired patients. In February 2004, we gathered medical leaders together to talk about screening and intervention. Sooner or later, we'll have to quit having meetings and start doing something.

Figure 2 is not a very sophisticated pie chart. It attempts to show predicted savable lives. In other words, if we take out motor vehicle crashes that occur at greater than 50 miles per hour at impact, and if we take out nonsurvivable crashes and just look at preventable deaths and survivable crashes, what are the factors that could result in their prevention?

There is obviously some double-counting here. But when you make it ridiculously simple, about a third of lives lost are attributable to impaired driving; about a third of lives lost are from failure to use safety belts; and about a third of lives lost are from all other causes, such as pedestrian safety, child safety, intersection crashes, off-road crashes, isolated without belts, and alcohol use. When you're trying to set priorities for a government agency, a picture this clear is very useful. For us, it's on the behavioral side, not the vehicle safety side. We also regulate the motor vehicle industry, but on the behavioral side, use of safety belts and prevention of impaired driving are the focus of our work.

There has been some relatively good news over the last year. Don't be misled by this histogram. It starts at 40,000; it does not start at zero. If it started at zero, you wouldn't be able to see much of a difference here. But the good news is that we had the first decline in overall fatalities that we've had in quite a long time. The exposure that people have to death from motor vehicle crashes in the United States has increased about two percent per year since we started keeping records in the 1960s. So the rate has been going down fairly consistently, even as the absolute number of drivers killed has increased. In 2003, however, we saw the first actual decline in a long time.

It's easy to see [on the histogram] that 939 fewer people died in crashes in passenger vehicles in 2003 than in 2002. At the same time, safety belt use rose to 80 percent. There's an obvious conclusion here. Let's look at alcohol-related crashes. You can see that the rate has come down since 1982, and sort of flattened out in the mid-1990s. Last year, we actually had the largest decline since 1992.

Something happened in the 1980s that was a sea change. You don't hear "one for the road" at a party much anymore, or at least at the parties I attend. If you think about it, it became socially normal to drive sober and socially abnormal to brag about how drunk you were when you drove home. A norming process took place.

Unfortunately, the people who are represented by this part of the histogram aren't affected by these social trends. We know who they are, and they really are the reason that you're here.

For those of you who don't like pictures, **Figure 3** shows the numbers of alcohol-related crashes. Again, I have to point out that we use the best methodology in the world for estimating alcohol-related fatal crashes. We take all the knowns that are reported by the police, the toxicology reports from the police, and then we impute the real number, because we have blood alcohol and drug screens for such a small number of the fatal crashes.

We actually do an imputation of what we believe the number to be, and it is based on surrogates; for example, the proportion of crashes that are known to be alcohol positive occur at night, single vehicle, rural roadway. When we look at a percentage of single vehicle, nighttime, rural roadway crashes, we know that, with reliability over many years, they are going to be alcohol related. This is how the number is arrived at, although this is not a census like our Fatality Analysis Reporting System, FARS, is: 42,825. You can believe that. But this is the best estimate, and it's pretty tight, we believe.

As I said, we saw the first decline in 2003 (**Figure 4**). What's most impressive about this figure is that in the BACs between .02 and .079, it only represents about 2,300 of the 17,000. Everybody else — 14,630 — is over .08.

Let's look at age for a minute. Part of the problem with being a government official is that we have to make some choices, because we don't have enough resources to do everything we would like to do. We have to focus resources on the places where we can do the most good. It doesn't take a rocket scientist or even a simple emergency physician from North Carolina to figure out where the risks are, using this histogram.

Clearly, we are killing our young people in alcohol-related fatal crashes. The peak level occurs among new drinkers, who also are relatively inexperienced drivers, followed closely by 21- and 22- and 23-year-olds and, sadly enough, 19- and 20-

year-olds. What the 21-year-old drinking law did was to save thousands and thousands of teenagers.

This is the crux of the issue for screening and intervention. **Figure 5** shows a histogram of alcohol levels of alcohol-positive drivers who were involved in alcohol-related crashes. In 2003, the median and the mean BAC levels were .16, so fully half of the drivers who were involved in fatal alcohol-related crashes had blood alcohol levels higher than .16.

Here is my point: When we're trying to look at who to target, we have to employ different strategies for different parts of the population. These are sick people, and they need a doctor. Interestingly, most of them have a doctor, and most of them interface with the medical profession in the emergency department, if nowhere else. But what do we do about it?

As I mentioned before, there is double counting. People who drive impaired don't buckle their safety belts. People who don't buckle their safety belts drive impaired. And so fully 70 percent of the fatal crashes that were alcohol-related involved unbelted drivers, as compared with a little under half of crashes that were not alcohol-related. What we're seeing is a population of risk-takers, and that bit of information may stimulate some ideas about how to approach them and what questions to ask.

Whenever I talk about what we are going to do about impaired driving, I am asked if it is an insurmountable problem. The answer is no; it is not an insurmountable problem. But we have to break up the problem into its constituent parts. We did have a problem in the 1980s with people who were socially responsible, who were socially normal, and who would drink three, four, five drinks; have one for the road; hop in the car; and go home. And if they had a crash, it was considered an "accident." Those days are gone.

But we also have new drivers every year. And we have new drinkers every year. So we have a need for high-visibility enforcement, coupled with advertising messages targeted at males ages 18 to 34, to give them the sense that it is not okay to drink and drive, that they will be arrested and put in jail, and it's going to ruin their lives. That is the purpose of a high-visibility enforcement campaign.

Those who fail to be deterred by this message will fall into the court system if they are apprehended. However, we also have a huge problem in the court system. We have judges who don't know the law. We have wet-behind-the-ears prosecutors in many jurisdictions. The more experienced prosecutors are assigned the robbery and rape cases, leaving the less experienced attorneys to try these complicated DWI cases. To address this, my agency is collaborating with our partners in the Department of Justice, the state Attorneys General, and other officials, to develop a cadre of resource prosecutors in every state, who can assist the district court prosecutors with this very complex law.

Another approach uses DWI courts that are based on the drug court model, which we know works. We funded a study in the late 1990s that looked at the drug court model, meaning a judge orders the offenders to appear monthly and assigns social workers to go to their job sites, obtain urine specimens, and interview their families. Usually, sobriety is a condition of staying out of jail, and if individuals in the program flunk out, it is not good for them. So the success rate in DWI courts is very high. We hope to replicate this approach across the country.

Before we ever get to that point, however, we need physicians to ask the simple questions as part of the routine medical history, particularly with patients in the high-risk populations, such as males ages 18 to 34.

How many of us actually ask these questions: How many drinks does it take before you first feel the effects of alcohol? Has your family been worried about your drinking? There are many, many, many screening tools that all of us are familiar with, such as CAGE and TWEAK. Dr. T.K. Li, who directs the National Institute on Alcohol Abuse and Alcoholism, is working on defining a single question that may be the only question a doctor has to ask. He thinks the question might be, "How many drinks do you drink at a sitting when you drink?" Above four is a pretty good predictor for alcohol use.

So we're after something that won't require extra time in the emergency department and other high-volume locations. Emergency physicians often see 15 patients an hour. They don't have time to go through the AUDIT with every patient. But part of this whole discussion is that if we can communicate, if we can all agree that this is a big enough public health problem and that we have to start this process for alcohol and drugs, then maybe you can tell us what to do, how to do it, and how to normalize this among physicians in the community. We really need something that will make doctors feel good and comfortable about asking the questions.

And the second piece of this is, then what? You have screened your patients and found that they are at high risk for alcohol abuse. Then what? What do you do? We have to make it comfortable for doctors to screen their patients, but we also have to make doctors believe that they're going to have success both if they send their patients somewhere or if there's nowhere to send them, to deal with the issue themselves. You don't need to be sold on that.

Some key issues are shown in **Figure 6**. Pretty good data coming out indicate that 40 percent of the people don't drink at all, so when you ask a screening question, you go to the next thing. Some at-risk drinkers here, believe it or not, will respond to the advice of their doctor. I know that you doctors in the audience don't believe that, but people actually do respond to our advice. And I'm sure you'll have experts who will give you

the literature citations. Even if you're great at a brief intervention, doing a screening and giving advice and following up may, in fact, work for a good portion of this population.

How do we get to this issue of alcohol screening? In medical schools. When I was in medical school, a professor told me that the curriculum content at my medical school was twice what he had to learn at his medical school. And that was in 1977 when I started. In 2004 I can't imagine the curriculum content that has to be packed into the same amount of time. So the chances of getting alcohol screening into a four-year medical school curriculum I'm not very sanguine about, frankly.

I am not sure when this training has to happen. I think I heard about it one time in my freshman behavioral science class, sort of between the lecture on the angry patient and the medical marriage and the human sexual response or something like that. It was not a big feature of my medical school, and I doubt that it is now. But, clearly, training is important.

The insurance laws build in a disincentive for physicians to gather alcohol data on their patients because they're afraid of not being able to bill for services are a reality. We've been working on that. A couple of states, North Carolina being among them, have a law prohibiting that. One of the reasons is because I sent Commissioner Jim Long a bill for $156,000 for a patient who fell off a ladder, spent a month in the ICU, and had multiple surgeries. Workers Comp refused to pay the patient's bill. Representatives interviewed the patient's co-workers, who said the patient had been drinking beer at lunchtime. I'm happy to say that denying a claim for this reason is against the law in North Carolina now. Maryland, North Carolina, and Vermont, I believe, have adopted laws that say it doesn't matter if a person is using alcohol, insurance is still responsible.

So it is possible to be reimbursed. The National Association of Insurance Commissioners has a model bill, and I would encourage you to look at it. How do you bill for these services? I'm not sure. There's a CPT code for it, but in emergency medicine we can't use it. If we do screening intervention, it might bump us up a level of service. We can't use the CPT code, because nobody will pay.

There also are issues with accreditation. The American College of Surgeons Committee on Trauma is talking about having screening intervention protocols as part of trauma center designation, which I think would be absolutely fabulous. Maybe JCAHO wants to look at this as best practice.

We don't have all the answers, but we do know that screening is an important problem. Having looked at your name tags, I think people in this room can help us navigate our way to making brief intervention standard practice in the United States among physicians and other health care providers.



Vice Admiral Richard H. Carmona, M.D., M.P.H.

Surgeon General of the United States

You know, the President has made it very clear to me that substance abuse prevention and treatment are a very high priority for us. I know I'm preaching to the choir when I say that to you. But I think that coming from a President of the United States who is willing to raise this to an issue of national health policy, it is very, very important. And of course, the sole purpose of Director Walters' job is to do something about this dilemma. So the commitment of our government is there.

As you know, my personal involvement is that both my parents were alcoholics and had problems with substance abuse. I got to witness those things as I grew up, and I saw how it disintegrates families. Personally, I saw the difficult decisions that people who are addicted have to make when they have only a few dollars and have to decide whether to buy food or the drug or alcohol. Of course, the children suffer, and it creates a great deal of instability in families.

It's interesting: When I think of myself growing up, I remember how wonderful and kind and caring my parents were, but they were very consumed by their problems, their addictions. And yet, they always tried to care for us. They always tried to do the right things for us. In fact, my mother used to give me lectures about not using drugs and not drinking in the streets with my friends. And yet, they were burdened by it themselves and couldn't get out from under it.

So for me, this is not just an academic discussion. It's something that I really experienced and I feel very passionate about, something that we really need to do something about.

When we hear the term "substance abuse," most Americans immediately think of marijuana, cocaine, heroin, and other illegal drugs. But prescription drug abuse and alcohol abuse also are harming and killing Americans of every race and socioeconomic group. Today, an estimated 6.2 million Americans abuse prescription drugs, compared to 1.6 million in 2000. That's nearly a 400 percent increase in four years. And for the 14 million Americans battling alcoholism, the holiday season, with its parties and champagne toasts, presents a steep challenge. These are people who are ruining their bodies, their minds and, in some cases, dying because of a disease that can be prevented and treated. Substance abuse impacts millions of American mothers and fathers, America's workers, America's future leaders, our children.

Every parent thinks: Am I doing enough to make sure my child stays away from drugs? That's exactly what we should be asking ourselves. What can we do? What can we do to make it better? What we are doing is a Surgeon General's Communication about

teen driving, including the contribution of substance abuse. As you know, not all motor vehicle crashes are related to driving under the influence of drugs and alcohol, but many are. In 2001, 23 percent of young drivers involved in fatal crashes had been drinking. And we're seeing a rising trend in the number of crashes caused by teen drivers who lack experience and focus, or suffer from simple fatigue. Across our Nation, car crashes kill more children and young adults than any other single cause. Each year, more than 41,000 Americans die in motor vehicle crashes, and crash injuries result in more than half a million hospitalizations and four million emergency department visits. The economic burden of motor vehicle-related deaths and injuries also is enormous, costing the United States more than $150 billion a year, at a time when health care presents a huge economic burden, which is mostly preventable.

The same factors that contribute to younger drivers being involved in motor vehicle crashes account for their higher death rates. (We all remember the teenage years. You feel you're invincible — nothing bad is going to happen to you — it will always be somebody else.)

The time of day also is strongly associated with motor vehicle crashes involving young drivers. For example, more than half occur on weekends, and more than 40 percent occur between 9:00 p.m. and 6:00 a.m.

Before I went into public health, I was a trauma surgeon in an emergency department. I was on the receiving end of all of those victims. I remember, day after day and night after night, those gurneys rolling in. Interestingly enough, no matter why the emergency patients were admitted — domestic violence, gunshot wound, drug abuse — a large percentage were involved with some type of substance abuse, buying, selling, using. And just about two or three out of every four of those cases before me were preventable — they didn't have to be there. People made bad decisions that affected their whole lives.

I'm bringing the idea of a Surgeon General's Communication on teen driving to you because I think that you have a thorough understanding of the role that substance abuse plays in killing our young people on the highways of America. This is actually the first time I've mentioned this to a peer group in any meeting. I would appreciate your professional input and your help in moving forward such an idea and how it might be structured and how we might all partner on something like this.

To put it plainly, drug and alcohol abuse and addiction are societal issues that demand societal solutions. These problems undermine the public health. They create an enormous disease burden and an economic burden that is entirely preventable. The good news is that we can all be part of the solution. And that includes all of us and our colleagues in the health professions. By engaging health professionals, families, and support groups, we can provide assistance to people of all ages and from all walks of life who may be at risk, and help those who have already fallen victim to an addiction, help them to recover and go on to lead productive, drug-free, healthy lives.

To prevent substance abuse and save millions of lives, we must focus on closing the gap between what health professionals know about substance abuse and what the rest of America understands. I think most of you will agree that in our country, we have a largely "health illiterate" society. Health literacy is the ability of an individual to access, understand, and use health-related information and services to make appropriate health decisions. So how does the average person deal with all of the great scientific information that we're trying to give them to change their behavior to keep them healthy, to make their lives better? They simply don't understand. The literature's pretty strongly supportive of the fact that half of patients don't understand the appointment slip and when they're supposed to come back, and a quarter of the people don't understand their prescriptions and what's on them. This health literacy block is very, very significant in everything we do.

How many times have we been annoyed with a patient because he or she is noncompliant? But when you ask why were they noncompliant, you realize: Maybe they didn't understand. Maybe I didn't deliver the message correctly. Maybe it just didn't catch.

How much time are we actually giving to patients today to engage them in conversation to make sure they understand? How are we ensuring that our messages are not only linguistically but culturally competent? So we waste a lot of time and a lot of money because we're trying to explain something to someone who doesn't hear us.

What we're looking for is ways to change behavior. That's what health literacy is all about. There is a gap between those of us who have the knowledge and those who need the knowledge. But how do we get it to them so that they'll incorporate it in their lives, change their behavior, reduce their morbidity and mortality, and improve their health and wellness? No matter what our discipline or specialty may be, that's really the end product of just about everything we do: to keep people healthier. So we have to find ways to do a better job of delivering these very important messages.

Improving health literacy involves giving people information about the safe use of prescription drugs, about staying away from illegal drugs, and about drinking only in moderation, if at all. We also must train ourselves and the next generation of medical professionals to watch for signs of abuse or addiction in our patients.

I want to thank Director Walters and all of you, my colleagues, for what you are doing to prevent, treat, and eliminate substance abuse and increase America's health literacy as we do so. These efforts will lead to a healthier, stronger America. Together we are facing this problem before it becomes impossible to turn around. Together we are asking the tough questions and applying the best science and solutions to helping Americans. I realize that it's a very, very difficult problem that we're dealing with, but we really have to do something about it. It's the right thing to do, because there are people who desperately need our help.

REPORTS FROM THE WORKING GROUPS

Through intensive dialogue in the Working Group sessions, Leadership Conference participants agreed on the following findings, objectives, and recommendations for achieving greater physician involvement in the prevention, identification, and management of SUDs.

UNDERGRADUATE MEDICAL EDUCATION

Findings.

Medical schools in the United States are accredited either by the Liaison Committee for Medical Education (for the M.D. degree) or by the Council on Predoctoral Education of the American Osteopathic Association (for the D.O. degree). These entities set standards for educational programs that lead to eligibility for licensure as a physician.

In both allopathic and osteopathic medical schools, most of the first two years of education takes place in classrooms and laboratories, as students learn basic medical sciences, in general and then by organ system. Students also learn basic communication skills and how to take a patient history and perform a physical examination in the first two years. Most schools require some clinical experience in the first two years, most of which is observational. Much of the third and fourth years of medical education takes place in clinical settings, where students learn to apply their knowledge of basic science and clinical skills in caring for patients under the direct supervision of faculty and residents.

Students may be exposed to substance abuse education in a variety of settings. During the first two years of medical school, substance abuse topics may be integrated into standard course work or taught as separate courses in addiction medicine. During the third and fourth years of medical school, students on required and elective clinical clerkship rotations may engage in specific substance abuse services. More commonly, however, educators formally or informally integrate substance abuse goals and objectives into clinical rotations such as internal medicine, family medicine, neurology, and psychiatry.

Dedicated training in SUDs is rarely offered. For example, a 1981 national survey of allopathic medical schools found that, while 40 percent offered elective courses in substance abuse, fewer than one percent provided required courses (Pokorny & Solomon, 1983; Lewis, 1987). A survey of 98 medical schools in 1986 (with an 85 percent overall response rate) found that the proportion of departments that offered a curriculum unit in substance abuse was 41/89 (46 percent) for internal medicine, 52/78 (67 percent) for family medicine, and 82/84 (98 percent) for psychiatry (Davis et al., 1988), with just more than half (53 percent) of these offering clinical experiences. A 1998-1999 LCME (1999) survey found that of the 125 accredited U.S. medical schools, training in substance abuse was provided as part of a larger required course in 119 (95 percent). Only 10 (8 percent) had a separate required course, while 45 (36 percent) offered an elective course.

The American Association of Colleges of Osteopathic Medicine (AACOM) surveyed colleges of osteopathic medicine to evaluate curricular offerings during the 1998-1999 academic year. All colleges reported offering substance abuse content in their curricula. On average, four percent of the curriculum time was reported as dedicated to substance abuse (Douglas Wood, personal communication). In a separate 1998 survey of 17 osteopathic medical schools by the American Osteopathic Academy of Addiction Medicine, only three of 11 schools that responded reported offering separate courses in addiction medicine during the first two years of medical school (Anthony Dekker, personal communication). None of the schools required a clinical clerkship rotation in substance abuse during years three and four; however, most offered elective rotations for interested students. Data are not available on the percentage of osteopathic students electing substance abuse rotations.

Objectives.

The Working Group on Undergraduate Medical Education defined the following objectives:

- Training in how to employ instruments and techniques useful in screening, preventive counseling, and brief interventions with patients at risk for or evidencing signs of SUDs should be integrated into the standard curricula of all medical schools. As a requirement for graduation, medical

students should be able to demonstrate that they know how to screen, counsel, and intervene with patients so as to prevent the development of, or arrest the progression of, SUDs.

- Training in the identification and management of medical and psychiatric comorbidities and complications of SUDs should be integrated into the standard curricula of all medical schools. As a requirement for graduation, medical students should be able to demonstrate that they know how to identify and manage such co-occurring medical and psychiatric disorders and complications.
- Training in the clinical, legal, and ethical issues involved in prescribing drugs with abuse potential should be integrated into the standard curricula of all medical schools. As a requirement for graduation, medical students should be able to demonstrate that they understand these considerations in prescribing for patients, including patients at risk for, presenting with, or with a history of SUDs, so as to minimize the risk of inducing or perpetuating an SUD.
- Licensure examinations should include questions that test the applicant's mastery of the relevant body of knowledge and skills.

Recommendations.

To achieve these objectives, the members of Group 1 recommended the following action steps:

1. Establish an expert panel or special content group to assist the National Board of Medical Examiners with test questions on SUDs.
2. Compile and disseminate information about potential model curricula for teaching about SUDs at the undergraduate level. As a first step, ask the conferees to submit information about possible models for compilation in the project database and dissemination to interested parties. Ask the Surgeon General to convene a meeting of medical school leaders to discuss ways to get the curricula adopted.
3. Work with the Federation of State Medical Boards (FSMB) to strengthen the language addressing the requirements of the medical licensing boards concerning the content of board examinations related to SUDs.
4. Work with the Surgeon General and medical societies to draft a strong ethical statement that says physicians may not ignore the signs or symptoms of SUDs: "Substance use disorders are medical illnesses and may not be ignored or go untreated. We do not choose the illnesses we treat."
5. Work with medical student organizations to help them advocate for better education on the identification and management of SUDs (this was enthusiastically supported by the two medical students who were present in Group 1).
6. Create a "marketing strategy" through which medical schools are rated on the SUDs content of their curricula, with the results prominently disseminated in medical and addiction journals (just as the rankings of U.S. colleges and universities are published in *U.S. News & World Report*).
7. Work with NIAAA, NIDA, and the Association of American Medical Colleges (AAMC) to establish and fund programs to support the development of young medical school faculty as substance abuse researchers, teachers, and mentors.

Graduate Medical Education

Findings.

The Accreditation Council for Graduate Medical Education (ACGME) oversees the training of 98,220 postgraduate (resident) physicians and the accreditation of 7,731 residency training programs in 99 specialty and subspecialty areas. Although several professional organizations have called for a greater integration of substance abuse education into allopathic and osteopathic residency training programs, the impact of these recommendations has been variable. For example, although the ACGME was represented in the development of the Policy Report of the Physician Consortium on Substance Abuse Education, substantive changes in Residency Review Committee (RRC) standards, requiring expanded integration of substance abuse curriculum into residency programs, never occurred (John Gienapp, personal communication).

A similar lack of impact was seen in osteopathic residency training standards (Eugene Oliveri, personal communication). Recent data indicate that there are RRC program requirements regarding substance abuse education in only five of the 99 specialty training programs (anesthesiology, family practice, internal medicine, obstetrics/gynecology, and psychiatry) (AMA, 1998).

A survey conducted in 1988 with a 74 percent response rate revealed that the proportion of departments that offered a curriculum unit in substance abuse was 93/232 (40 percent) for internal medicine, 195/288 (68 percent) for family medicine, 38/139 (27 percent) for pediatrics, and 153/169 (91 percent) for psychiatry (Davis et al., 1988). A recent national survey was conducted to determine the extent of substance abuse training in residency programs. This survey of 1,831 allopathic and osteopathic residency program directors in emergency medicine, family medicine, internal medicine, pediatrics, psychiatry, and obstetrics/gynecology found that the percentage of programs requiring substance abuse training ranged from 32 percent (pediatrics) to 95 percent (psychiatry), yielding a combined average of 65 percent. The median number of curricular hours ranged from three to 12. The traditional grand rounds lecture was the most common

curricular format used to teach substance abuse topics; only family medicine (55 percent) and psychiatry (75 percent) reported that a majority of their programs required clinical rotations. In recent surveys, the most commonly cited factors limiting further integration of substance abuse training into residency programs include a perceived lack of time, faculty expertise, identified training sites, and institutional support (Fleming et al., 1999; Isaacson et al., 2000).

While physician training should be geared toward a broad range of skills, including screening, intervention, referral, and follow-up care, it would be desirable that some proportion of substance abuse training be performed in specialized settings in order to expose trainees to this type of care. A separate survey has revealed that fewer than 10 percent of the faculty who teach substance abuse topics perform clinical work in addiction treatment programs, and that teaching is infrequently performed in these settings (Fleming et al., 1999).

Implementing screening, preventive counseling, and brief intervention is best approached as a systems issue (Fleming, 2002). Clinical services and the providers who deliver them need to be linked in terms of both location and reimbursement. Health care settings are complex systems with multiple competing agendas; therefore, implementation strategies must involve convincing purchasers (e.g., employers and government agencies) and payers (e.g., insurance companies and HMOs) to provide financial support and leadership. Both the purchasers and the providers need to be convinced that prevention of and early intervention for SUDs will improve the health of their covered populations and reduce health care and social costs. Similarly, professional organizations need to take a more active role in persuading payers to allocate a level of resources to the problem that approximates the impact of SUDs on the public health and economy (Fleming, 2002).

Objectives.

The Working Group on Graduate Medical Education identified the following objectives:

- Training in how to employ instruments and techniques useful in screening, preventive counseling, and brief interventions with patients at risk for or evidencing signs of SUDs should be integrated into the standard curricula of all residency training programs. Such programs should require residents to demonstrate that they know how to screen, counsel, and intervene with patients so as to prevent the development of, or arrest the progression of, SUDs.
- Instruction in the identification and management of medical and psychiatric comorbidities and complications of SUDs also should be integrated into the standard curricula of all residency training programs. Such programs should require residents to demonstrate that they know how to identify and manage such co-occurring medical and psychiatric disorders and complications.
- Training in the clinical, legal, and ethical issues involved in prescribing drugs with abuse potential should be integrated into the standard curricula of all residency training programs. Such programs should require residents to demonstrate that they understand these considerations in prescribing for patients, including patients at risk for, presenting with, or with a history of SUDs, so as to minimize the risk of inducing or perpetuating an SUD.
- Specialty board examinations should include questions that test the applicant's mastery of the relevant body of knowledge and skills.

Recommendations.

The members of Group 2 designed a two-pronged approach to achieve these objectives: (1) address the ***extrinsic*** larger systems factors outside medicine, such as factors that impede the identification, treatment, and referral of patients with SUDs: for example, insurance coverage that does not work, loss of treatment facilities, and carve-outs that mean doctors are not being paid for what we want them to do in caring for patients with SUDs, and (2) attack the ***intrinsic*** systems factors inside medicine, such as residency programs, stigma associated with alcoholics and other patients with SUD, and transmission of negative attitudes toward SUDs from older medical staff to younger staff. To achieve this, the members of Group 2 proposed the following action steps:

1. To address the *extrinsic factors*, identify a sponsor and potential funders for a high-level think tank-type meeting to bring together the major purchasers and administrators of health care to focus on the economic implications of SUDs. Attendees would include private sector employers, such as IBM and General Motors; public sector funders, such as the Centers for Medicare & Medicaid Services, Medicaid claims administrators, state alcohol and other drug agencies, presidents of Blue Cross Blue Shield plans and of "big medicine" educational groups (e.g., AAMC, ABMS, and ACGME), and the Chair of the Deans' Association of AAMC; and business and health consulting groups capable of offering econometric and business analyses, such as Leapfrog, Lewin, and RAND.
2. To address the *intrinsic factors*, identify a sponsor and potential funders for a second meeting, to bring together representatives of the institutions of medicine to focus on the overarching need to set minimum standards for training all medical students and residents in the recognition of SUDs. Attendees would include the ACGME leadership, the heads of the respective American Board of Medical Specialties (ABMS) boards, the Chairs of the RRCs, and others who create and maintain the core content for each of the specialties.

3. Approach the ACGME and RRCs for help in identifying and disseminating information about model residency training programs that incorporate teaching about SUDs. As a first step, ask the conferees to submit information about possible models for compilation in the project database and dissemination to interested parties.
4. Work with the ABMS to strengthen the language articulating the requirements of the various specialty boards for the content of examinations related to SUDs. As a first step, ask the conferees to submit copies of relevant special board requirements for compilation in the project database and dissemination to interested parties.
5. Compile and disseminate information about available fellowship opportunities in addiction medicine and addiction psychiatry. As a first step, ask the conferees to submit information about fellowship opportunities for compilation in the project database and dissemination to interested parties.
6. Compile and disseminate information about sources of available funding to support modification of residency training curricula to include greater attention to substance use disorders. As a first step, ask the Federal agency and foundation representatives to submit information on funding sources, for compilation in the project database and dissemination to interested parties.

Continuing Medical Education

Findings.

Continuing medical education is a system that provides resources to physicians engaged in individualized "learning projects." Such projects are designed to support an individual's continuous and personal professional development agenda, which reflects his or her scope of practice (e.g., clinical, educational, administrative, leadership). Some of these activities have been identified by the AMA as credible and valid learning activities deserving of Category I Credit in the Physicians Recognition Award of the American Medical Association. This system of recognizing continued learning is administered by the Accreditation Council for Continuing Medical Education (ACCME).

Continuing education is effective in changing practice behaviors if it is framed correctly. Each type of activity is suited to a particular learning need. For example, didactic lectures and books transfer data and information. Supervised work and coaching support the development of skills. Reflection and small group work facilitate the transition to competence. This is why CME that is effective in promoting change in practice always involves multiple steps and modalities spread over time, and includes feedback as well as reminders in practice.

The common features of all CME activities are that the content, objectives, and elements of evaluation share the following features: (1) they are anchored to the learner's practice-based questions or needs, (2) their content is valid, and (3) they are free of commercial bias. The CME system, through its accredited providers, brings form and function to these features by structuring or facilitating them as learning activities that are designed to advance the learner along a knowledge, competence, or performance agenda.

The contents of accredited CME programs are derived from practice-based needs, whether at the level of individual physicians, medical communities, or larger physician populations. Physicians are involved in CME programs to fulfill their learning goals. Not all learning requires an accredited provider-based activity, but all accredited provider-based activities should result in, or at least be designed to promote, learning. The presence of a method to assure that all three features are present in a learning activity is the value that the CME accreditation system brings to the learner.

Objectives.

The Working Group on Continuing Medical Education identified the following objectives, which it designated "strategic imperatives":

* Mainstream education about SUDs by teaching them in the same way that knowledge and skills in addressing other chronic disorders are taught.
* Overcome stigma by engaging experienced physicians who are experts on SUDs in mentoring younger/novice physicians. Also, encourage colleagues and organizations to present positive public messages about SUDs and to avoid implicitly negative language and messages.
* Engage health care purchasers and payers in addressing reimbursement and coding issues (as represented by parity and the Uniform Accident and Sickness Policy and Provision Laws).
* Encourage all medical organizations to adopt a standard, clinically focused terminology, as CSAP has done over the years with prevention terminology. For example, in medical forums, refer to "relapse" rather than "recidivism," to "opioids" rather than "narcotics," and to "patients" rather than "clients."

Recommendations.

To achieve the foregoing objectives, the members of Group 3 proposed the following action steps:

1. Work with ACGME and the various specialty boards to strengthen the requirements for continuing education on SUDs. In addition, encourage the specialty boards to include questions that test the applicant's mastery of the body of knowledge and skills relevant to SUDs in their recertification examinations.

2. Work with ABMS and the state medical boards to include questions that test the applicant's mastery of the body of knowledge and skills relevant to SUDs in their licensure examinations.
3. Compile and disseminate information about potential model CME programs about SUDs. As a first step, ask the conferees to submit information about possible models for compilation in the project database and dissemination to interested parties. Collaborate with ACCME to develop a "www.accme.gov" Web site, where approved educational programs could be listed.
4. Facilitate a connection between ONDCP, other leaders of the initiative, and organizations that represent the CME infrastructure (i.e., those that provide and accredit CME programs). Through such a relationship, the CME providers could be engaged in promoting the concept that public health issues (including SUDs) should be addressed through their systems and members.
5 Facilitate a connection between Federal agency staff who have CME responsibilities and the group of experts within ONDCP and other leaders of the initiative. If government CME providers were to embrace the concept of partnering with private sector organizations, the dissemination strategy would be in place. For example, the National Institutes of Health, Centers for Disease Control and Prevention, or Federal Drug Administration could invite the national medical specialty societies to become partners in developing and presenting clinical modules on identifying and managing SUDs (few would decline such an offer). Look to the buprenorphine training courses (the curricula for which were developed through a collaboration between CSAT and selected medical specialty societies) as a model.
6. Teach about prescribing drugs with abuse potential in the same way other areas of clinical knowledge and skills are taught. Use all the educational media available, including new media such as teleconferencing and online CME programs. Employ multiple focused interventions (in the same way pharmaceutical manufacturers do with the roll-out of a new drug) through partnerships between Federal agencies and relevant private sector organizations.
7. Work with NIAAA and NIDA to identify and disseminate information about sources of funding to support clinical research into the prevention, identification, and management of prescription drug abuse.
8. Incorporate language that reflects competency in prescribing controlled drugs into licensure standards and certification/recertification programs. Require that at the time of re-registration with DEA, physicians present evidence of CME credits and/or focused self-assessment to achieve this competency.
9. Revise patient charts to move the personal/family history of alcohol and drug problems from the "Social History" to the "Past Medical History," where it is more likely to be considered in the prescribing decision. Add similar cues to the screens of electronic medical records.
10. Add reminders about prescribing considerations and cautions to the backs of prescription forms (especially state-issued forms).
11. Through public-private partnerships (e.g., NIDA and ACOG), identify and/or develop educational materials that physicians can give to patients for whom they prescribe drugs with abuse potential.

Role of the Federal Agencies

Findings.

Conferees agreed that the Federal health agencies have an important role to play in physician education, acting through multiple mechanisms:

RESEARCH GRANT SUPPORT. Increased grant support for research designed to foster physicians' competencies in identifying and addressing SUDs will not only stimulate research in the field, but also provide needed support to faculty with critical research agendas. Examples of potential research agendas for these faculty include determining the appropriate health care profession to perform a brief intervention, determining the critical components of brief interventions, exploring the need to adapt screening and brief intervention strategies to special populations, and determining the most effective teaching strategies for training clinicians in screening and brief interventions. The opportunities to compete for research grants in these areas will help stimulate faculty interest, promote career development for faculty interested in this field, create new and useful knowledge, and add legitimacy to the field. Successful grantees will also serve as role models or mentors for junior faculty members.

INSTITUTIONAL SUPPORT. Institutional support for faculty teaching about SUDs can be developed via funding mechanisms that are designed to foster development of curriculum or research efforts. Funds that are targeted toward programs that cut across disciplines (e.g., medicine, social work, nursing) will foster development of collaborative research and training efforts and help engender institutional support.

CENTERS OF EXCELLENCE. Federally funded National Centers of Excellence are needed to serve as model programs that are focused on developing, disseminating, and implementing methods of research, clinical care, and education on SUDs. Such centers could participate in a network to develop and implement a standard curriculum for undergraduate, graduate, and postgraduate medical education. Current Federally supported initiatives with national infrastructures, such as the Area Health Education Centers supported by the Health Resources and Services Administration (HRSA), the Addiction Technology Transfer Centers supported by CSAT, and the Clinical Trials Network supported by NIDA, can provide a framework on which to build the proposed centers.

Objectives.
The members of the Working Group of Federal Agencies identified the following objectives:

- Training in how to employ instruments and techniques useful in screening, preventive counseling, and brief interventions with patients at risk for or evidencing signs of SUDs should be integrated into the standard curricula of all medical schools, residency training, and continuing education programs.
- Training in the identification and management of medical and psychiatric comorbidities and complications of SUDs should be integrated into the standard curricula of all medical schools, residency training, and continuing education programs.
- Training in the clinical, legal, and ethical issues involved in prescribing drugs with abuse potential should be integrated into the standard curricula of medical schools, residency training, and continuing medical education programs in all specialties.
- Federal agencies should assist in the development, dissemination, and evaluation of these curricula at all levels of physician training.

Recommendations.
The members of Group 4, all of whom represented Federal agencies, responded to the following question: "Assume we have accomplished all the competencies by the year 2010, what did the government do to make it happen?" They agreed that the Federal government could play the following roles:

1. Bring resources and authority to the issue (as the ONDCP Director, the Surgeon General, the NIDA and NIAAA Directors, and the NHTSA Administrator did at the Leadership Conference).
2. Elevate the visibility of the subject to the highest levels of the agencies, and encourage collaboration across agencies (e.g., Department of Health and Human Services and VA working together).
3. Keep working to find ways to convince physicians that SUDs are medical disorders. Simultaneously, help physicians understand the impact of SUDs on other medical disorders for which they provide care (as Dr. Volkow advised in her presentation).
4. Break the problem down by stage of illness. Develop different treatment and referral models for the early, middle, and late stages of the disorder, as is done with other chronic disorders.
5. Use information that is already available (such as the SAMHSA Treatment Improvement Protocols and the VA clinical practice guidelines) to provide frameworks for the development of clinical models. (SAMHSA's initiatives with the recovery and faith-based communities would be an important piece.)
6. The VA system can begin to develop models for medical education, then use its clout to renegotiate contracts with medical schools to incorporate them.
7. HRSA could provide funding for the development and implementation of clinical models for its target populations (e.g., for treatment in rural areas) in collaboration with other agencies.
8. Work together across multiple agencies, including payers such as Medicare and Medicaid and other organizations to develop more ideas about clinical models. Such clinical models would, in turn, facilitate the development of reimbursement models. (Alternatively, develop guidelines, then let economists develop the models.)
9. Support research into strategies that promote system change and provider change. Work with the credentialing bodies to develop and maintain incentives for change. Test the models' efficacy with demonstration projects, funded through contracts and requests for applications.
10. Compile and disseminate information about sources of available funding to support modification of medical school curricula and residency training programs, as well as development of continuing education programs, to include greater attention to SUDs. As a first step, ask the Federal agency and foundation representatives to submit information about available funding for compilation in the project database and dissemination to interested parties.

The members of Group 4 pointed to nutrition and geriatrics as good examples of how cross-cutting ideas are incorporated into medical education, and suggested that these and other specialties should be studied as models.

PUBLIC INPUT

Recommendations.
The following recommendations were presented by Dr. Sidney Schnoll, representing the Public Input Working Group:

1. Work with NIAAA and other agencies to develop and fund a program (like that outlined by Dr. Li in his presentation) that would support the development of medical school faculty who are experts on SUDs. Such individuals become "champions" for adding addiction-related content to the curriculum in undergraduate and graduate medical education and become role models and mentors for students.
2. Work with ASAM, AOAAM, and the American Academy of Addiction Psychiatry to develop a joint committee to develop questions on SUD-related topics for medical schools, the National Board of Medical Examiners, and other developers of certification/recertification examinations. As part of this, look at the case simulation materials developed by Barry Stimmel, M.D., and

colleagues at the Mount Sinai Medical School for use in clinical skills testing. (Some years ago, copies of these materials were sent to every medical school dean in the United States. Unfortunately, the information is probably tucked away on a shelf gathering dust.)

3. Include the pharmaceutical industry in all plans for educational programs to address prescription drug abuse, because industry has more resources and better data than the Federal government and already is a major sponsor of continuing medical education.

Action Plans

To sustain the momentum generated at the Leadership Conference, the conferees recommended that the following actions be initiated as quickly as possible:

1. In lieu of a standard written conference evaluation, arrange for the facilitators to individually debrief conference participants to learn their reactions, ideas, and suggestions for follow-up activities. Revise the follow-up plan to reflect the information gathered through the debriefing process. *[Completed]*
2. Compile the "next steps" proposed by each of the Working Groups and disseminate the resulting draft document to all Leadership Conference participants. Arrange a conference call with the chairs, co-chairs, facilitators, and reporters of the Working Groups to review the document and to identify common issues and themes. *[Completed]*
3. Send the draft conference report to Working Group members for review and comment. Arrange a follow-up conference call with each of the Working Groups to discuss the report and follow-up plans. *[Completed]*
4. Invite the conference participants, the Federal agencies, and the medical specialty societies to submit relevant educational programs and curricula for undergraduate, graduate, and continuing medical education for compilation in the project database and dissemination to interested parties. Ask the Expert Panel members to assist in compiling and evaluating this information. *[Underway]*
5. Ask the Federal agency and foundation representatives and other conference participants to submit information on available program and research funding for compilation in the project database and dissemination to interested parties. *[Underway]*
6. Develop articles describing the conference and submit them to refereed journals for publication, including the *Journal of the American Medical Association*, the *Journal of the American Osteopathic Association*, specialty journals for the various medical specialties, policy journals such as *Health Affairs*, newsletters, and other publications. Frame different aspects of the conference to address the interests of particular audiences. *[Underway]*
7. Initiate meetings between representatives of appropriate Federal agencies and educational providers, organizations representing the prescribing professions, and other stakeholder groups to identify mutual goals and initiate collaboration on project development and dissemination. *[Underway]*
8. Invite the Leadership Conference participants to identify opportunities to gather informally at forthcoming meetings of their organizations. Ask the participating organizations to consider helping to organize and/or sponsor such gatherings. *[Underway, with the first gathering held at ASAM's annual meeting in April 2005]*
9. Arrange meetings between ONDCP staff and representatives of Groups 1 and 2 with executives of ABMS and the Association of American Medical Colleges (whose leaders were unable to attend the conference because of a conflicting engagement). *[Underway]*

There was virtually unanimous agreement among the conference participants that considerable progress had been made and that a follow-up meeting should be scheduled in one year to revisit the objectives, strategies, and action steps and to assess progress toward achieving them. In the interim, the conferees suggested that the Expert Panel continue to meet as an organizing nucleus and that task forces be appointed to pursue specific objectives.

In his closing remarks, conference chair Addison D. "Tad" Davis IV, ONDCP's Assistant Deputy Director for Demand Reduction, pledged that his office would work to sustain the energy and commitment evidenced by the conferees, saying "I met with the Surgeon General within the last two weeks. He's fully on board with what we're trying to accomplish here, and he's committed to staying with us, as are Dr. Runge and Director Walters and others in the community. I think that your presence here as a group has reinforced the importance of the efforts that are underway."

Mr. Davis added that "We will continue to work with other agencies, organizations, health care professionals, and leaders in the medical community to develop strategies to integrate new knowledge about alcohol and drug abuse and addiction into medical education."

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RESOURCE DOCUMENTS

AMERICAN MEDICAL ASSOCIATION (1979):
GUIDELINES FOR PHYSICIAN INVOLVEMENT IN THE CARE OF SUBSTANCE-ABUSING PATIENTS

In 1979, the American Medical Association adopted a policy statement entitled "Guidelines for Physician Involvement in the Care of Substance-Abusing Patients." The Guidelines articulate the principle that every physician must assume clinical responsibility for the diagnosis and referral of patients with substance use disorders, and broadly define the competencies required to meet that responsibility. The Guidelines thus represent one of the first efforts by a major medical organization to highlight the need for all physicians to have competence to address substance use disorders. The Guidelines are published here in their entirety.

> *"Alcoholism and other drug dependencies are among the most difficult to treat of medicine's challenges. As physicians, we all have a role in the prevention and treatment of alcohol — and drug-related problems, and this role must be addressed now. The future of too many of our current and future patients demands that we no longer accept such losses silently."*
>
> – Otis R. Bowen, M.D., Secretary of Health and Human Services, and
> James H. Sammons, M.D., Executive Vice President, American Medical Association

LEVEL I

For all physicians with clinical responsibility: Diagnosis and Referral:

- Recognize as early as possible alcohol- or drug-caused dysfunction.
- Be aware of the medical complications, symptoms, and syndromes by which alcoholism (or drug abuse) is commonly presented.
- Ensure that any complete health examination includes an in-depth history of alcohol and other drug use.
- Evaluate patient requirements and community resources so that an adequate level of care can be prescribed, with patients' needs matched to appropriate resources.
- Make a referral to a resource that provides appropriate medical care.

LEVEL II

For physicians accepting limited treatment responsibility (to restore the individual patient to the point of being capable of participating in a long-term treatment program):

- Assist the patient in achieving a state free of alcohol and other drugs, including management of acute withdrawal syndrome.
- Recognize and treat, or refer, all associated or complicating illnesses.
- Apprise the patient of the nature of his disease and the requirements for recovery.
- Evaluate resources — physical health, economic, interpersonal, and social — to the degree necessary to formulate an initial recovery plan.

- Determine the need for involving significant other persons in the initial recovery plan.
- Develop a long-term recovery plan in consideration of the above standards and with the patient's participation.

LEVEL III

For physicians accepting responsibility for long-term treatment:

- Acquire knowledge, by training and/or experience, in the treatment of alcoholism (and other drug dependence).
- The following responsibilities should be conducted or supervised by the physician:
  - Establish a supportive, therapeutic, and nonjudgmental relationship with the patient.
  - Periodically evaluate and update the recovery plan with the patient's participation.
  - Involve the patient with an abstinent peer group when appropriate.
  - Become knowledgeable about and be able to utilize various health, social, vocational, and spiritual support systems.
  - Evaluate directly or indirectly significant other persons and, unless clearly contraindicated, involve them in treatment.
- Continually monitor the patient's medication needs. After treatment of acute withdrawal, use psychoactive drugs only if there is a clear-cut and specific psychiatric indication.
- Be knowledgeable about the proper use of pharmacotherapy.
- Throughout the course of treatment, continually monitor and treat, or refer for care, any complicating illness or relapse.
- Be available to the patient as needed for an indefinite period of recovery.
  - Within the confines of this relationship, establish specific conditions and limits under which the therapy will be conducted, and carefully explain them to the patient.

THE MACY CONFERENCE (1994): RECOMMENDATIONS FOR TRAINING ABOUT ALCOHOL AND SUBSTANCE ABUSE FOR ALL PRIMARY CARE PHYSICIANS

In 1994, the Macy Conference on Training About Alcohol and Substance Abuse for All Primary Care Physicians moved the conversation forward by elaborating on the competencies articulated in the American Medical Association's policy statement. The report of the conference also contained a number of thoughtful essays on the subject by conference chair David Lewis, M.D., and other leaders in medical education.

The essay excerpted here, by David C. Lewis, M.D., of the Mt. Sinai Medical School, offers insights into why this body of knowledge has been so difficult to integrate into medical education, as well as recommendations for addressing the problem.

Chairman's Summary and Conclusions

David C. Lewis, M.D.

According to studies cited during this Macy Conference, our nation is paying almost $240 billion a year for undiagnosed and untreated substance abuse in the form of medical complications and social problems. It seems obvious that, to save time and money, physicians need to be better trained to make diagnoses and perform interventions in the course of their practice, so that we are not just dealing later with the much more expensive complications of substance abuse.

How to make the case for more adequately training physicians to routinely attend to the substance abuse problems they encounter was the challenge presented to the conference planning committee. The committee responded by deciding to focus on the residency review committees and specialty boards in the primary care disciplines in an effort to convince them to strengthen their requirements for training in substance abuse. . . .

It became clear . . . that the conference participants were well aware of the new demands of our emerging health care system. . . . There was a discouraging recitation of reasons why medical students and residents are not now receiving more training in substance abuse, [including] physicians' negative attitudes toward substance-abusing patients, social and professional stigmas associated with physicians who treat these patients, and a shortage of trained faculty. But the arguments for enhanced training were convincing, especially since the competencies needed by physicians are clearly defined and training programs already know how to teach and develop these competencies. As a result, the discussions centered on the issue of timing — a shift from whether more training in substance abuse should be required to how soon this requirement could be implemented *[see the Concluding Statement of the Conference Participants]*.

. . . Because the conference planning committee knew that the key decisions about how to implement the goals of the conference would be made by the boards and residency review committees, the conference had not been organized to arrive at conclusive decisions. As I reviewed the proceedings of the conference, however, I found a number of strong, action-oriented recommendations that had been made during the course of the discussions [which follow].

I. Action Steps for Certifying Boards of Primary Care Medical Specialties and the American Board of Medical Specialties

1. Convene primary care boards to determine a set of enhanced requirements that board-certified physicians must meet with respect to demonstrated expertise and training regarding substance abuse.
2. Consider pilot projects in which the boards use standardized patients to evaluate professional skills related to managing substance abuse patients. Coordinate with certifying examiners to ensure that questions gleaned from encounters with standardized patients are reflected on certifying examinations.

II. Action Steps for the Accreditation Council for Graduate Medical Education (ACGME)

1. Define substance abuse training standards in ACGME general requirements and for the residency review committees in all the medical specialties.
2. "Fast track" all new general and special requirements regarding substance abuse training in graduate medical education.

III. Action Steps for Residency Review Committees in Primary Care Specialties (Family Practice, Internal Medicine, Pediatrics, and Obstetrics and Gynecology)

1. Require more residents' training to involve experience with substance-abusing patients.

2. Work collaboratively with the Residency Review Committee in Psychiatry to develop common language for all special requirements involving training in the management of substance abuse.
3. Require training programs to have faculty members who have been trained specifically to manage substance abuse.
4. Require training programs to include substance abuse treatment centers as training sites, and assign residents for a one-month rotation in these centers.
5. Require residents to maintain a case registry of substance abuse patients, and routinely survey residents about their experiences.
6. Require program directors to have residents directly observed while managing substance abuse patients to ensure their competence. This requirement should be part of the annual RRC program audit.
7. Require training programs to provide residents with special training and experience with physicians who are impaired due to substance abuse problems.

IV. Action Steps for the Liaison Committee on Medical Education and the National Board of Medical Examiners

1. Specify the requirements for medical school educational programs related to substance abuse.
2. Reinforce and emphasize these requirements in the United States Medical Licensing Examination and subject tests of the National Board of Medical Examiners.

V. Action Steps for Medical School Leaders

1. Reject applicants to medical school whose attitudes toward [patients with substance use disorders] . . . would make them incapable of treating [such patients] . . . in a professional manner.
2. When recruiting new clinical faculty, seek individuals with training in the management of substance-abusing patients. (The Association for Medical Education and Research in Substance Abuse and the American Society of Addiction Medicine can assist in identifying potential faculty members with this expertise and experience.)

VI. Action Steps for Leaders of the Medical Professions

1. Educate professionals to understand that substance abuse is an intermittent, relapsing chronic disease that is preventable, can be treated effectively, and is not usually a manifestation of mental disease.
2. Educate professionals that, in addition to mastering problems with drinking or a drug, functional improvements in family, work, and social adjustment are also important in achieving gains in quality of life.
3. Fight professional stigmas attached to physicians and other providers who care for substance- abusing patients.
4. Develop treatment protocols and performance standards for physicians and other providers who care for substance-abusing patients.

VII. Action Steps for Public Policy Makers

1. Recognize that substance abuse is a disease and reimburse for its treatment comparably to any other disease.
2. Eliminate managed care restrictions on referrals to substance abuse specialists — especially restrictions that hinder access to substance abuse treatment.
3. Establish national standards for accrediting substance abuse treatment centers.
4. Support the establishment of fellowship programs to train medical school faculty in the management of substance abuse.
5. Support basic research and treatment outcomes research related to substance abuse.

Dr. Richard DeVaul's survey eight months after the conference revealed that the boards and residency review committees had taken significant steps toward implementing the goals of the conference.

Concluding Statement of the Participants

We recommend that the specialties of Family Practice, Internal Medicine, Pediatrics, and Obstetrics-Gynecology promptly respond to the need to improve the quality of care provided by physicians trained in these specialties to patients with alcohol and other drug problems.

These primary care specialties should require all residents to be trained to develop and to demonstrate those skills necessary to prevent, screen for and diagnose alcohol and other drug problems; to provide initial therapeutic interventions for patients with these problems; to refer these patients for additional care when necessary; and to deliver follow-up care for these patients and their families.

The certifying boards and residency review committees of these specialties should expeditiously take specific actions to strengthen their requirements so that the performance of residents in managing substance abuse patients is measurably improved.

PROJECT MAINSTREAM (2002): RECOMMENDED PHYSICIAN COMPETENCIES

Project Mainstream, organized by the Association for Medical Education and Research in Substance Abuse (AMERSA) with assistance from the Health Resources and Services Administration and the Center for Substance Abuse Treatment, represents a multi-year effort to describe in detail the areas of knowledge and skills required by practitioners of many health professions.

The competencies and recommendations offered in the Project Mainstream report have been endorsed by many health professions organizations, including the American Medical Association, the American Osteopathic Academy of Addiction Medicine, and the Society of Teachers of Family Medicine.

Brief excerpts from the report are presented here. The full report and accompanying documents can be accessed at the AMERSA Web site at www.amersa.org.

Recommendations

CORE COMPETENCIES IN SUBSTANCE ABUSE EDUCATION FOR PHYSICIANS

The following competencies are presented as three levels of involvement in the care of patients with SUD. All physicians with clinical contact should strive to provide Level I competence. (e.g., primary care and generalist physicians). Level III competence should be sought by all physicians providing specialty services to patients with SUD. Table 1 lists the competencies for each level.

Table 1. Critical Core Competencies in Substance Abuse Education for Physicians

Level I: All physicians with clinical contact should:

1. Be able to perform age, gender, and culturally appropriate substance abuse screening.
2. Be able to provide brief interventions to patients with SUD.
3. Be able to use effective methods of counseling patients to help prevent SUD
4. Be able to refer patients with SUD to treatment settings that provide pharmacotherapy for relapse prevention.
5. Recognize and treat or refer comorbid medical and psychiatric conditions in patients with SUD.
6. Be able to refer patients with SUD to appropriate treatment and supportive services.
7. Be aware of the ethical and legal issues around physician impairment from SUD and of resources for referring potential impaired colleagues, including employee assistance programs, hospital-based committees, State physician health programs, and licensure boards.
8. Identify the legal and ethical issues involved in the care of patients with SUD.

Level II: All physicians coordinating care for patients with SUD in addition should:

1. Use effective methods to assess patients with SUD.
2. Provide pharmacologic withdrawal to patients with SUD.

Level III: All physicians providing specialty services to patients with SUD in addition should:

1. Provide pharmacotherapy for relapse prevention in patients with SUD.
2. Provide, or refer for psychosocial counseling for relapse prevention in patients with SUD.

RECOMMENDATIONS FOR LEVEL I COMPETENCIES

All physicians with clinical contact should have Level 1 competencies.

Level I, Competency 1

Physicians should be able to perform age, gender, and culturally appropriate substance abuse screening.

1. **Physicians' training curricula and licensing examinations at all levels should be modified to include content on the use of effective methods of screening patients for SUD. A curriculum in screening for SUD should be required and integrated into the standard curricula of all medical schools and residency training programs. As a requirement for graduation, medical students should demonstrate competency in screening, intervention, and referral for SUD**

(consistent with Competencies I-2 and I-4 below). Licensing examinations should include content and questions relevant to appropriate screening strategies for patients with SUD. Increased curricular content on screening for SUD should be available through CME programs. The development, dissemination, and maintenance of these curricula should be coordinated by a lead Federal agency with input from all appropate Federal agencies and professional societies.

Rationale. Screening involves identifying patients with unrecognized SUD.[12] Screening for diseases is warranted if the following conditions are met: the disease has a significant prevalence and consequences; effective and acceptable treatments are available; early identification and treatment are preferable; and there are effective screening instruments available that are easy to administer. There is strong research evidence to support the fact that SUD meet all of these criteria; therefore, screening for SUD is indicated although not often implemented.

Recommended Actions. Training in screening for SUD should include attention to the rationale, utility, operating characteristics, and use of various methods including the importance of raising the topic and the appropriate role of formal screening instruments (e.g., CAGE, AUDIT), quantity-frequency questions, and biological markers (e.g., MCV, AST, ALT, carbohydrate-deficient transferrin).[12, 48-54]

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, United States Medical Licensure Examination (USMLE), and American Board of Medical Specialties (ABMS).

Level I, Competency 2

Physicians should be able to provide brief interventions to patients with SUD.

2. **A required curriculum in brief treatment interventions for individuals with SUD should be integrated into the standard curricula of all medical schools and residency training programs. This curriculum should outline the components of brief interventions that have demonstrated effectiveness. As a requirement for graduation, medical students should demonstrate competency in brief intervention for patients with SUD. Licensing examinations should include content and questions relevant to appropriate treatment strategies for individuals with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of these curricula should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. There is evidence that brief interventions can reduce alcohol consumption to below hazardous levels for patients with hazardous and harmful drinking.[31,55] The incorporation of substance abuse services into settings will allow for a direct expansion of the capacity of the health care system and will help increase access to care for a wide range of patients.[56,57]

Recommended Actions. Training in SUD should devote attention to the effectiveness of office-based interventions for SUD, including the role of brief interventions in patients with alcohol problems.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 3

Physicians should use effective methods of counseling patients to help prevent SUD.

3. **A required curriculum in counseling to help prevent the development and progression of SUD should be integrated into the standard curricula of all medical schools and residency training programs. This should include information on community prevention of SUD. Licensing examinations should include content and questions relevant to appropriate prevention of SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Prevention of harm from the use of psychoactive substances can help decrease the impact of SUD on the individual and society.[58,59] For instance, decreasing alcohol consumption among pregnant women can have a significant impact on the incidence of the fetal alcohol syndrome.[23] In addition, recent efforts at early recognition and treatment from hazardous and harmful drinking are aimed at decreasing progression to more severe alcohol problems that are traditionally less amenable to treatment.[55] While the risk factors for SUD, including specific genetic markers, are still being elucidated, and the determinants of progression from substance use to abuse and subsequent dependence are under evaluation, early recognition and intervention by physicians can be effective in decreasing progression from less severe to more severe SUD.

Recommended Actions. Training in SUD should devote specific attention to the effectiveness of counseling patients to help prevent the development or progression of SUD using formal counseling and brief interventions.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 4

Physicians should be able to refer patients with SUD to treatment settings that provide pharmacotherapy for relapse prevention.

4. **A required curriculum in the available pharmacotherapy for SUD should be integrated into the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to appropriate prevention of SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Recent research has highlighted the role of neurochemistry in the etiology and maintenance of SUD. For instance, there is evidence for involvement of the dopamine, GABA, serotonin, and opioid systems in alcohol use disorders, and chronic exposure to narcotics is known to create fundamental changes in receptors and intracellular messaging in patients with opioid dependence.[7,60-62] These insights have created new pharmacologic therapies such as naltrexone, acamprosate, and buprenorphine that are aimed at preventing relapse.[26,28,31,63]

Recommended Actions. Training in SUD should devote attention to the effectiveness of pharmacotherapy to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 5

Physicians should recognize and treat or refer comorbid medical and psychiatric conditions in patients with SUD.

5. **A required curriculum in the medical and psychiatric comorbidities of SUD should be integrated into the standard curricula of all medical schools and residency training programs. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Population surveys have revealed high rates of comorbid medical and psychiatric disorders in patients with SUD. For instance, the Epidemiological Catchment Area and the National Comorbidity Study surveys have found a 29% to 37% prevalence of comorbid psychiatric disorder in patients with alcohol problems.[2,64] In addition, abused substances and the route used to administer (e.g., injection) these substances are associated with significant comorbid medical conditions such as hepatitis B and C, endocarditis, human immunodeficiency virus infection and AIDS, tuberculosis, and cirrhosis.[65,66]

Recommended Actions. Training in SUD should devote attention to the recognition, treatment, or referral of comorbid medical and psychiatric conditions in patients with SUD. **Responsible Agents.** LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 6

Physicians should be able to refer patients with SUD to appropriate treatment and supportive services.

6. **A required curriculum in the process of evaluation and referral of patients with SUD should be integrated into the standard curricula of all medical schools and residency training programs. As a requirement for graduation, medical students should demonstrate competency in referral for patients with SUD. Licensing examinations should include content and questions relevant to the appropriate referral of patients with SUD. Increased curricular content should be available through CME. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Multicenter randomized clinical trials such as Project MATCH and data from the Drug Abuse Treatment Outcome Study have demonstrated the efficacy of a variety of treatment services for patients with SUD.6[7-69] In addition, successful referrals to treatment require an accurate assessment of a patient's diagnosis and an understanding of the treatment process.

Recommended Actions. Training in SUD should devote attention to the effectiveness of appropriate referral of patients to substance use services, including formal treatment programs. Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 7

Physicians should be aware of the ethical and legal issues around physician impairment from SUD and of resources for referring potential impaired colleagues, including employee assistance programs, hospital-based committees, State physician health programs, and licensure boards.

7. **Physicians' training curricula and licensing examinations at all levels should be modified to include content on the recognition and referral for treatment of physicians and health professionals impaired by SUD. A required curriculum in the recognition and referral of physicians and other health professionals impaired by SUD should be integrated in the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to the recognition and referral of physicians and other health professionals with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Unrecognized and untreated physicians and other health professionals impaired by substance use can constitute a major threat to patient safety and the integrity of the medical profession.[70] Successful programs have been developed to assist physicians and other health professionals who have been recognized and referred to treatment.[38,71] The RRC has recognized the importance of these practices and specified institutional requirements for policies that cover physician impairment, and in one instance (i.e., internal medicine), there is a specialty requirement.[45]

Recommended Actions. Training in SUD should devote attention to the effectiveness of recognition and referral of impaired physicians and other health professionals with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level I, Competency 8

Physicians should identify the legal and ethical issues involved in the care of patients with SUD.

8. **A required curriculum in the ethical and legal complications of SUD should be integrated into the standard curricula of all medical schools and residency training programs. Licensing examinations should include content and questions relevant to the ethical and legal complications of SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. SUD are frequently associated with legal complications stemming from use (e.g., driving under the influence) or impaired judgment. Ethical considerations, such as patient confidentiality, are important aspects of caring for patients with SUD.

Recommended Actions. Training in SUD should devote attention to the legal and ethical issues in caring for patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Recommendations for Level II Competencies

All physicians coordinating care for patients with SUD (e.g., primary care and generalist physicians) should have Level I and Level II competencies.

Level II, Competency 1

Physicians should use effective methods to assess patients with SUD.

1. **A curriculum in the assessment of patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in the appropriate disciplines should include content and questions relevant to methods to assess patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Assessment involves identifying the realms of a patient's life affected by SUD. Criteria exist for the diagnosis of substance dependence syndromes[72] and instruments are available to assess the severity of SUD, such as the Addiction Severity Index,[73] which evaluates the spectrum of areas affected by SUD (e.g., medical, psychosocial, legal, and family domains). Assessment of these domains is necessary to understand the full impact of SUD on the individual.

Recommended Actions. Training in SUD should include attention to the medical, psychological, family, legal, and employment complications attributed to SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level II, Competency 2

Physicians should provide pharmacologic withdrawal to patients with SUD.

2. **A curriculum in the pharmacologic withdrawal of patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to methods to provide withdrawal to patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Recent clinical trials have provided empirical evidence for efficient and effective care of patients requiring detoxification services in office-based settings.13,74 In addition, the use of symptom-triggered, instead of fixed, doses of benzodiazepines has been shown to reduce length of stay and cost for patients treated for alcohol withdrawal.[13,75] In opioid-dependent patients, updated regimens and new medications have extended the utility of these services in inpatient and outpatient settings.[32,63,76,77]

Recommended Actions. Training in SUD should include attention to the role and logistics of detoxification for patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Recommendations for Level III Competencies

Level III competence should be sought by all physicians providing specialty services to patients with SUD.

Level III, Competency 1

Physicians should provide pharmacotherapy for relapse prevention in patients with SUD.

1. **curriculum in pharmacotherapy to help prevent relapse in abstinent patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to pharmacotherapy for relapse prevention in abstinent patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Effective new therapies are available for patients with alcohol problems.26,28,31,63 Methadone maintenance has demonstrated efficacy in decreasing illicit drug use, HIV transmission, and criminal activity.63 In addition, office-based pharmacologic treatments have been shown to be effective for opioid-dependent patients previously stabilized at narcotic treatment programs 78-80 and for those actively using drugs.33,76,77 **Recommended Actions.** Training in SUD should include information on the effectiveness of pharmacotherapies to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, and ABMS.

Level III, Competency 2

Physicians should provide, or refer for, psychosocial counseling for relapse prevention in patients with SUD.

2. **A curriculum in psychosocial therapies to help prevent relapse in abstinent patients with SUD should be integrated into the curricula of all medical schools and appropriate residency training programs. Licensing examinations in appropriate disciplines should include content and questions relevant to psychosocial therapy for relapse prevention in abstinent patients with SUD. Increased curricular content should be available through CME programs. The development, dissemination, and maintenance of this curriculum should be coordinated by a lead Federal agency with input from all appropriate Federal agencies and professional societies.**

Rationale. Effective new psychosocial therapies are available for patients with SUD.[24,31,55,68,69]

Recommended Actions. Training in SUD should include information on the effectiveness of psychosocial therapies to help prevent relapse in abstinent patients with SUD.

Responsible Agents. LCME, RRC of the ACGME, AMA, AOA, USMLE, ABMS, and appropriate Federal agencies.

PROGRAM MODEL: CONTINUING MEDICAL EDUCATION

Clinical, Legal and Ethical Issues in Prescribing Controlled Drugs

Continuing Education Program Offered Annually by The University of South Florida College of Medicine; Joseph Krzanowski, Ph.D., Chair

Since the mid-1980s, the University of South Florida's College of Medicine has offered a CME program on "Clinical, Legal and Ethical Issues in Prescribing Controlled Drugs." Offered annually, the course is the longest-running and best-evaluated CME program on prescribing issues and prescription drug abuse in the U.S.

The course was developed by the university in collaboration with the Florida Board of Medicine, the Florida Alcohol and Drug Program Office, and the Florida Medical Association in response to reports of physicians misprescribing controlled drugs or being deceived by patients who wished to obtain such drugs for personal use or resale. It is co-directed by Joseph J. Krzanowski, Jr., Ph.D., Professor of Pharmacology & Therapeutics and Associate Dean for Graduate Affairs at the USF College of Medicine, and addiction expert John C. Eustace, M.D., representing the Florida Society of Addiction Medicine. The course is taught by faculty from the University of South Florida College of Medicine, representatives of the Florida Board of Medicine and the U.S. Drug Enforcement Administration, and other experts.

The course focuses on pharmaceutical agents (including analgesics, CNS stimulants and depressants, antidepressants, anabolic steroids, neuropsychopharmacologic agents) which, because of their effects on the central nervous system, have a potential for abuse. Lectures encompass basic pharmacology, appropriate clinical use, ethical considerations, and legal implications involved in the use of these drugs. Presentations also address the currently accepted medical uses of controlled drugs, compliance with Federal and state laws and regulations, risk/benefit considerations, and problem avoidance for both patients and physicians.

Upon completion of the course, participants are expected to be able to:

- Understand the basic pharmacokinetic principles relating to prescription drugs with abuse potential;
- Describe the basic pharmacology of drugs subject to abuse, including opiates, sedative — hypnotics, psychotropic agents, steroids and stimulants;
- Assess the indications for and proper use of these drugs in managing acute and/or chronic pain and mood disorders;
- Identify the legal basis of Federal and state drug control policies, with special emphasis on compliance with the Florida Medical Practice Act;
- Discuss recordkeeping, enforcement agency practices, and risk mitigation.

The course is specifically designed for physicians but is open to all health care professionals. Physicians are referred to the course by medical boards in many states. It is approved for 23 Category I credits toward the AMA Physician's Recognition Award. For more information, contact the CME Office, University of South Florida College of Medicine, 12901 Bruce B. Downs Blvd., MDC Box 60, Tampa, Florida, 33612 or phone (813) 974-4296.

Screening and Brief Office Interventions for Patients with At-Risk and Harmful Drinking

Continuing Education Program developed by the Rochester (NY) Academy of Medicine, 2003-2005

Those involved will learn:

- How to screen patients for risky, harmful, and dependent drinking;
- How to make connections between medical problems and underlying alcohol abuse;
- How to make a brief office intervention around alcohol abuse; and
- How to develop office systems that make screening and brief interventions flow easily.

THE PROGRAM

Step 1: Read one to three monographs or articles or attend a one hour lecture (2 hours credit for reading all 3, one hour credit for reading one monograph or attending the lecture)

Step 2: Spend l to 2 hours with a substance abuse trainer who will review this material and have you read, and help you practice screening and brief interventions. In addition, the trainer will meet with your office staff in helping to develop a system for your particular practice, which will enable you to actually do this screening and the brief interventions. 1-2 hours credit

Step 3: Screen patients and use your trainer as a resource person for questions. After you and others in your office have a few positive screens, the trainer will return to discuss these patients with you. The trainer will return several times, but two follow up visits to discuss the process and review patients are the norm. Dr. Norman Wetterau, an addiction medicine specialist who is also in primary care, will also be available to meet with you if you desire.

Additional credit hours are available for additional directed study in this area including in motivational interviewing or adolescent interventions.

Providers who complete the initial training, begin to screen patients, and attempt an intervention with an at-risk patient will be eligible for CME credit for time spent in this program (up to 10 hours). A program evaluation will be required.

This program is co-sponsored by the Rochester Demand Treatment Team and the Rochester Academy of Medicine. The Rochester Academy of Medicine designates this continuing medical education activity for a maximum of 10 hours of Category I credit toward the Physicians Recognition Award of the American Medical Association. Each physician should claim only those hours of credit that he/she actually spent in the educational activity.

APPENDIX A: CONFERENCE AGENDA

OFFICE OF NATIONAL DRUG CONTROL POLICY

LEADERSHIP CONFERENCE ON MEDICAL EDUCATION IN SUBSTANCE ABUSE

Washington, DC, December 1-2, 2004

WEDNESDAY, DECEMBER 1, 2004
6:00 - 9:00 PM

5:00 pm	Registration opens *(Hotel Mezzanine)*
6:00 pm	Dinner Meeting *(Consulate Room, Mezzanine Level)*
6:00 - 6:10 pm	Welcome and Acknowledgments ***Addison D. "Tad" Davis IV*** ***Acting Deputy Director for Demand Reduction Office of National Drug Control Policy***
6:10 - 7:00 pm	Dinner *(generously sponsored by The Robert Wood Johnson Foundation)*
7:00 - 7:10 pm	Introduction of the Panelists *(Mr. Davis)*
7:10 - 8:00 pm	Panel Discussion ***Dr. Bertha K. Madras,*** ***Dr. Sheldon Miller, Dr. Mark L. Kraus***
8:00 - 8:30 pm	Questions and Discussion
8:30 - 9:00 pm	Overview of Thursday's Activities and Adjourn for the Evening ***Mr. Davis &*** ***Bonnie B. Wilford,*** ***Conference Facilitator***

THURSDAY, DECEMBER 2, 2004
8:00 AM - 5:00 PM

8:00 - 8:30 am	Registration and Continental Breakfast
8:30 - 9:00 am	Introduction of Director Walters ***Mr. Davis*** Address and Charge to the Conferees ***John P. Walters*** ***Director, Office of National Drug Control Policy***
9:00 - 9:20 am	Health Professions Education: The View from NIDA ***Nora D. Volkow, M.D.*** ***Director, National Institute on Drug Abuse***
9:20 - 9:40 am	Health Professions Education: The View from NIAAA ***Ting-Kai Li, M.D.*** ***Director, National Institute on Alcohol Abuse and Alcoholism***
9:40 - 10:00 am	Questions and Discussion *(Dr. Volkow & Dr. Li)*
10:00 - 10:10 am	Overview of the Day and Introduction of the Small Group Chairs ***Mr. Davis & Mrs. Wilford***
10:15 - 10:30 am	Break
10:30 - 12:00 pm	Small Groups Meet — Session 1 Group 1 *(Undergraduate Medical Education)* Group 2 *(Graduate Medical Education)* Group 3 *(Continuing Medical Education)*
12:00 - 12:50 pm	Working Lunch
12:50 - 1:10 pm	Health Professions Education: The View from NHTSA ***Jeffrey Runge, M.D.*** ***Administrator, National Highway Traffic Safety Administration***
1:10 - 1:15 pm	Overview of the Afternoon ***Mr. Davis & Mrs. Wilford***
1:15 - 1:30 pm	Break
1:30 - 3:00 pm	Small Groups Meet — Session 2
3:00 - 3:15 pm	Break
3:15 - 3:35 pm	Health Professions Education: The View from the Surgeon General ***Vice Admiral Richard H. Carmona, M.D., M.P.H.*** ***Surgeon General of the United States***
3:35 - 4:30 pm	Small Group Discussion Summaries
4:30 - 5:00 pm	Planning for the Future ***Mr. Davis & Mrs. Wilford***
5:00 pm	Conference Adjourns

APPENDIX B: ACKNOWLEDGEMENTS

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Addison D. "Tad" Davis IV
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Charles G. Curie, M.A., A.C.S.W., Administrator
Stephenie Colston

Center for Substance Abuse Treatment
H. Westley Clark, M.D., J.D., M.P.H., Director
Anton C. Bizzell, M.D.

Center for Substance Abuse Prevention
Beverly Watts Davis, Director
Robert C. Stephenson, Ph.D.

National Institute on Alcohol Abuse and Alcoholism
Ting-Kai Li, M.D., Director
Peggy Murray, M.S.W.

National Institute on Drug Abuse
Nora D. Volkow, M.D., Director
Cindy Miner, Ph.D.

The Robert Wood Johnson Foundation
Riza Lavizzo-Mourey, M.D., President

Johnson, Bassin & Shaw, Inc.
Bonnie B. Wilford, M.S., Conference Facilitator

APPENDIX C: CONFERENCE PARTICIPANTS AND SMALL GROUP ASSIGNMENTS

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APPENDIX D: FOLLOW-UP SURVEY OF THE CONFEREES

Questions Asked in the Debriefing Interviews

1. *Was the Leadership Conference relevant to the mission and goals of your organization?*
2. *Were the goals of the Leadership Conference clear to you?*
3. *What do you think were the most significant outcomes of the Leadership Conference?*
4. *If there was one thing you or your organization could do to advance the effort re-kindled by the Leadership Conference, what would that be?*
5. *If there was one thing ONDCP or other conference participants could do to assist you or your organization in engaging in such an effort, what would that be?*
6. *If there is an individual or organization not yet involved in this effort that should be, who would that be? Would you be willing/able to help us make contact and help involve that individual/organization?*
7. *What would be a good way to measure the results of the conference and follow-up effort (that is, outcome measures)? How do you think we could best measure the impact of the conference over the next year?*
8. *What is the one "breakthrough" or sign of progress you would most like to see accomplished over the next year?*
9. *If there is a follow-up Leadership Conference in 2005, would you be interested in attending?*
10. *Do you have any other comments or suggestions concerning the Leadership Conference and the follow-up effort?*

Conferees' Responses to the Debriefing Questions

The following brief summary reflects feedback from participants in the Leadership Conference on Medical Education in Substance Abuse.

1. Interviewers report that the follow-up interviews have been beneficial in helping participants reflect and focus on the conference and what is needed to move forward.

   REPRESENTATIVE COMMENT: "This follow up debrief with individual participants is terrific; this is an excellent way to keep the ball rolling. Ask participants for something concrete that they will do and then follow up with them to see if it was done (several people already made promises or suggestions)."

2. Interviewers report that to sustain the momentum created by the conference, it is essential to issue some sort of interim report in the near future.

   REPRESENTATIVE COMMENT: "A number of interviewees have requested a summarization of the conference so they can use it to underpin their discussions. For example, Dr. Samuel Jones requested a summarization because he has an opportunity to influence the Board of Family Medicine in a meeting he will attend the third week of February. He is one of the newest members of this network and his enthusiasm blew me away."

3. Conferees viewed the Federal agency representatives as helping the small group discussions by making specific commitments to assist in the areas of education, licensing boards and exams.

   REPRESENTATIVE COMMENT: "Actions were discussed on a higher level than I originally would have thought. Ideas of bringing business into this discussion were significant. There was a broad strategy to tackle difficult problems and they pledged money."

4. Many interviewees view progress toward a second (e.g., Surgeon General) meeting as an indicator of success. Other conferees saw a task force or high-level planning committee as the way to go. The facilitators agreed that some mechanism for continued communication, at a frequency the conferees find appropriate, is important.

   REPRESENTATIVE COMMENT: "Instead of a conference next year, create a Task Force whose mission it is to address the goals of the conference and assess the extent to which they are addressed throughout the year. The Task Force would then make strategic recommendations to major stakeholders, such as funding agencies, HRSA, AAMC, RRC, Deans of medical schools, etc."

5. *GENERAL COMMENTS:*
   "I went with low expectations, but ended with great enthusiasm and was extremely impressed."

   "The networking was wonderful. I have and will continue to utilize those I met to come together on some issues. The conference gave great opportunity to do that."

   "The opportunity to really talk through topics in a group of people that had the same interest was extremely helpful. It opened areas that I had not considered before."

   "It is clear that each of the participants has bits of information that others need to know. For example, Jon Ritvo has information directly beneficial to Rich Saitz and Patrick O'Connor and to all the others indirectly. Sheldon Miller has information about the high level conference that should be jointly discussed. Sam Jones has excitement about influencing Family Medicine that would be a boost to all the participants."

APPENDIX E: GLOSSARY

Addiction.
A primary, chronic, neurobiological disease, with genetic, psychosocial, and environmental factors influencing its development and manifestations. Addiction is characterized by three or more of the following behaviors occurring at any time in the same 12-month period: tolerance; withdrawal; use in larger amounts or over a longer period of time than intended; persistent desire or unsuccessful efforts to cut down; spending a great deal of time in activities necessary to obtain alcohol or drugs (including prescription drugs); giving up or reducing important social, occupational, or recreational activities; continued use despite knowledge of having a persistent or recurrent physical or psychological problem.

Co-occurring/co-morbid disorders.
The simultaneous presence of two or more disorders, such as the co-existence of a substance use disorder with a psychiatric or medical disorder. Use of the term carries no implication as to which disorder is primary and which secondary, which disorder occurred first, or whether one disorder caused the other.

Dependence.
Used in three different ways: (1) physical dependence, a physiological state of adaptation to a specific psychoactive substance characterized by the emergence of a withdrawal syndrome during abstinence, which may be relieved in total or in part by read ministration of the substance; (2) psychological dependence, a subjective sense of need for a specific psychoactive substance, either for its positive effects or to avoid negative effects associated with its abstinence; and (3) one category of psychoactive substance use disorder.

Prevention.
Social, economic, legal, medical, and/or psychological measures aimed at minimizing the use of potentially addictive substances, lowering the dependence risk in susceptible individuals, or minimizing other adverse consequences of psychoactive substance use. ***Targeted preventive interventions*** constitute a system that targets prevention activities to specific levels of risk. For example, ***universal interventions*** are targeted to the public or a whole population group that has not been identified on the basis of individual risk. The intervention is desirable for everyone in that group. Universal interventions have advantages in terms of cost and overall effectiveness for large populations. ***Selective interventions*** are targeted to individuals or a subgroup of the population whose risk of developing substance use disorders (SUDs) is significantly higher than average. The risk may be imminent, or it may be a lifetime risk. The basis may be biological, psychological, or environmental. ***Indicated interventions*** are targeted to reach high-risk individuals who are identified as having minimal but detectable signs or symptoms foreshadowing SUDs or biological or familial markers indicating a predisposition for SUDs, even though they do not meet *DSM-IV* diagnostic levels at the current time.

Substance abuse.
The problematic consumption or illicit use of alcoholic beverages, tobacco products, or drugs, including misuse of prescription drugs. Abuse typically leads to clinically significant impairment or distress, as manifested by one or more of the following occurring within a 12-month period: recurrent use resulting in a failure to fulfill major role obligations at work, school, or home; recurrent use in physically hazardous situations; recurrent legal problems associated with use; continued use despite persistent or recurrent social or interpersonal problems caused or exacerbated by the effects of alcohol or other drugs, including prescription drugs. In the literature on economic costs, substance abuse means any cost-generating aspect of alcohol or other drug consumption; this definition differs from the clinical use of the term, which involves specific diagnostic outcomes.

Substance use disorder.
The spectrum of disorders encompassed in alcohol and/or drug abuse and dependence that is attributed to problematic consumption or illicit use of alcoholic beverages, tobacco products, and drugs, including misuse of prescription drugs.

Modified from the U.S. Department of Health and Human Services, National Center for Health Statistics (2000). Healthy People 2010. *Hyattsville, MD: NCHS.*

APPENDIX F: ACRONYMS

AAAP	American Academy of Addiction Psychiatry
AACOM	American Association of Colleges of Osteopathic Medicine
AAFP	American Academy of Family Physicians
AAP	American Academy of Pediatrics
ABMS	American Board of Medical Specialties
ACGME	Accreditation Council for Graduate Medical Education
ACOG	American College of Obstetricians and Gynecologists
AMA	American Medical Association
AMERSA	Association for Medical Education and Research in Substance Abuse
AOAAM	American Osteopathic Academy of Addiction Medicine
ASAM	American Society of Addiction Medicine
CME	continuing medical education
CSAP	Center for Substance Abuse Prevention
CSAT	Center for Substance Abuse Treatment
DEA	Drug Enforcement Administration
FSMB	Federation of State Medical Boards of the United States
HRSA	Health Resources and Services Administration
LCME	Liaison Committee for Medical Education
NHTSA	National Highway Traffic Safety Administration
NIAAA	National Institute on Alcohol Abuse and Alcoholism
NIDA	National Institute on Drug Abuse
ONDCP	Office of National Drug Control Policy
RRC	Residency Review Committee
SAMHSA	Substance Abuse and Mental Health Services Administration
SUDs	substance use disorders
VA	Department of Veterans Affairs

APPENDIX G: SUPPORTING LITERATURE

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