The State of Methamphetamine Research

By Beth Finnerty, Associate Director of Training (finnerty@ucla.edu)


In response to growing concerns about methamphetamine, the National Institute on Drug Abuse (NIDA) sponsored a Methamphetamine Research Workgroup Meeting March 9 and 10 in Los Angeles.

The purpose of the meeting was twofold: (1) to thoroughly review the state of methamphetamine research, a task that has not been undertaken in about five years, and (2) to accurately characterize the growing methamphetamine problem and address the issues associated with methamphetamine use in a proactive, rather than reactive, manner.

The two-day meeting brought together leading researchers from several U.S. institutions and universities. Presentations were grouped into three major research areas: basic science, neuroimaging, and clinical science. The following summarizes the information presented:

Basic Science Research

Glen Hanson (University of Utah), Ronald Kuczenski (UC San Diego), Bryan Yamamoto (Boston University), and John Marshall (UC Irvine) presented research findings relating to:

- the neurobiology of methamphetamine neurotoxicity (focusing on the damage done to the dopamine system);
- animal modeling of methamphetamine abuse patterns, specifically the development of animal models of drug exposure to characterize human stimulant exposure;
- changes in cellular functioning resulting from methamphetamine use;
- and the biological bases for the enduring effects of methamphetamine use.

Neuroimaging Research

Edythe London (UCLA ISAP), Linda Chang (University of Hawaii), and Nora Volkow (Director of NIDA), provided overviews of various imaging studies that investigated the effect of methamphetamine dependence on the brain as well as changes in the brain that occur during methamphetamine abstinence.

Collectively, the presenters described the significant amount of work that has been done in the area of neuroimaging, but each underscored the need for more studies to determine the extent of recovery in the brain with treatment or abstinence and to understand whether methamphetamine affects brain development in children and adolescents.

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ISAP’s Jeffrey Annon to Chair NIDA Subcommittee on Data Management, Analysis

www.uclaisap.org/ctn/index.html

By Albert Hasson, CTN Pacific Region Node Coordinator (alberthasson@earthlink.net)

CTN News

Jeffrey Annon, director of the ISAP Data Management Center (DMC), was recently named chairperson of the National Institute on Drug Abuse (NIDA) Clinical Trials Network (CTN) Data Management and Analysis Subcommittee. Jeff has been with ISAP for 15 years. He and his DMC crew oversee data capture for more than 20 projects. Congratulations, Jeff.

Protocol Updates

CTN 001-002

Addiction, one of the leading journals on substance abuse research and treatment, will publish the main findings from this evaluation of the use of buprenorphine in residential and outpatient opioid detoxification programs.

CTN 003

Walter Ling, ISAP’s Director, and Christie Thomas, Jessica Fradis, Sandy MacNicoll, and Cindy Fernandez continue to take the lead in this evaluation of buprenorphine. The UCLA team, in conjunction with 11 CTN Community Treatment Programs, has implemented this study in 11 sites nationally and recruited more than 430 participants. This project should be completed by midsummer.

CTN 0014

Ken Bachrach and Lindsay McCann at the Tarzana Treatment Center continue the pilot phase of the “Brief Strategic Family Therapy” protocol for adolescents and their families. Families that are interested in receiving treatment within this research study are encouraged to contact Lindsay McCann at (818) 996-1051, ext. 1198.

CTN 0018

Deborah Service, Gina Richardson, and Sarah Cousins continue enrolling participants into the “Safe Sex Skills for Men” protocol at the Matrix Institute, Rancho Cucamonga facility. Don Calsyn at the University of Washington has taken the lead on this protocol. For more information, contact Sarah Cousins at (909) 989-9724.

CTN 0019

Allan Cohen, Vanessa Tudela, and Nicki Griswold at the Bay Area Addiction Research and Treatment, Opioid Treatment Program in La Puente are seeking methadone-dependent women for participation in the “Safe Sex Skills for Women” protocol. Recruitment should continue through the end of the year. Contact Vanessa Tudela at (626) 855-5090.

CTN Renewal Update

The existing Regional Research and Training Centers (RRTCs) of the NIDA Clinical Trials Network, one of which is UCLA ISAP, and a number of newcomers, are competing either to continue or take over CTN endeavors for the next five years.

Eleven RRTCs are up for renewal this year. NIDA was due to announce its decisions in May, but as of press time, had not.

As one of five initially funded CTN RRTCs, UCLA ISAP has made significant contributions to the CTN research portfolio. ISAP has taken the lead on three multisite medication trials using suboxone, the recently approved medication for the treatment of opioid dependence, and developed the “Telephone Enhanced Long-Term Engagement” protocol prior to handing it off to Duke University for implementation.

Additionally, the Community Treatment Programs within the Pacific Region Node, the Betty Ford Center, Bay Area Addiction Research and Treatment, Haight Ashbury Free Clinics, Matrix Institute, and Tarzana Treatment Center, have participated in 11 research protocols within the CTN.
According to estimates from the National Survey on Drug Use & Health, California has the largest “treatment gap” of any state—2.7% of the population needs substance abuse treatment but does not receive it. This amounts to nearly 100,000 people.

One of the main factors contributing to this treatment gap is the severe shortage of trained and credentialed substance abuse counselors within California. According to the U.S. Bureau of Labor Statistics, California employs only 2.01 substance abuse counselors per 10,000 people—less than the national average of 2.2 substance abuse counselors per 10,000 people.

In an effort to better understand the conditions and the needs of the substance abuse treatment workforce in California, as well as in Arizona and New Mexico, the Pacific Southwest Addiction Technology Transfer Center (PSATTC) sponsored a survey of the workforce in the three states. The survey was designed to provide the PSATTC with information on the background of substance abuse workers and their working conditions, their training and technical assistance needs, and factors associated with job tenure and turnover.

Survey results indicated that 89% of directors and over 70% of staff are over 40 years old. The median age of substance abuse counselors is 48 (compared to a median age of 40 for the total U.S. workforce). The majority of agency staff and directors are female (60% and 63%, respectively).

Low annual compensation was reported by both agency directors and staff (see below graphic). Additionally, about 10% of the substance abuse workforce does not receive health insurance as a benefit and over one third do not receive retirement contributions from their employers.

Substance abuse is a second career for 47% of directors and 46% of agency staff. Turnover seems to be a continuing issue in the field; people tend to stay in the field but change place of employment and position frequently.

Only 11% of directors and 40% of staff have been in the substance abuse field less than five years, while 30% of directors and 63% of staff have been with their current agency for less than 5 years. About 13% of agency staff say it is very likely that they will leave their place of employment within the next two years, but only about 8% say it is likely that they will leave the field.

According to both agency directors and agency staff, the most significant perceived barriers to improving treatment services are: (1) budgets that do not allow for staff training (51%), (2) workload pressures that limit motivation for training (32%), (3) limited resources for adoption of new treatments (29%), (4) limited training interests of staff (29%), and (5) the time that training activities take (24%).

Agency staff and directors also identified areas of counselor skills development and technical assistance that would help them to improve the services that they provide (see above graphic). Information of this kind is essential to target training and technical assistance effectively and to help the workforce grow and improve. For complete survey results, visit the PSATTC Web site at www.psattc.org.
The majority of corrections-based substance abuse treatment programs encourage (or require) former clients to participate in aftercare in the community. Unfortunately, the characteristics that determine the best client-program “match” have yet to be established.

To address this issue, UCLA ISAP, Brown University, Texas Christian University, and the University of Kentucky are working together to develop and test the Inmate Prerelease Assessment (IPASS), with the goal of documenting its effectiveness as an aftercare placement tool.

The IPASS is a prerelease risk measure designed for prison-based substance abuse treatment graduates. It takes into account the inmates’ historical drug use and criminal activity, as well as performance in prison-based treatment. The aims of this study are to:

- test the ability of the IPASS to predict relapse and recidivism using a prospective design, and
- assess its use in matching offenders to a particular level of aftercare.

**Overview of the IPASS**

Prior to an offender’s leaving a correctional institution, decisions must be made regarding recommendations and provisions of post-release services. For those who have received drug treatment services while incarcerated, these decisions often include assessing the need for continued substance abuse treatment.

The IPASS consists of four parts. Part 1 is designed to provide a quick assessment of criminal risk based on pre-incarceration risk factors. This part of the IPASS focuses heavily on criminal history, with questions about arrest and incarceration history and age of first criminal activity.

Part 2 of the IPASS is designed to quickly assess pre-incarceration drug use severity.

Whereas Parts 1 and 2 provide a baseline need for treatment based on static measures, Parts 3 and 4 focus on dynamic factors, such as engagement in prison treatment and counselor ratings, to determine whether the baseline need for treatment should be adjusted.

In theory, those at the same baseline level who do well in the prison phase of treatment and successfully meet treatment goals should not require as intensive post-release treatment as those who fail to meet treatment goals.

Researchers from ISAP and its partners are administering the IPASS to small groups of inmates who are within 90 days of release from prison-based treatment programs in four states. They also will administer the counselor section of the IPASS to each inmate’s primary counselor.

The target sample for this study is 600 participants. Only inmates who are expected to participate in some form of aftercare (either because they volunteer or are mandated to do so) will be recruited for participation in the study.

The practical goal of this study is to empirically establish aftercare matching criteria for substance abusers completing prison-based treatment and develop a simple prerelease assessment that can facilitate post-release placement decisions.
Desirée Crèvecoeur, Project Director for the Los Angeles County Evaluation System (LACES), never wanted to be a ballerina, but she did want to be a vet—until she realized they sometimes have to put animals to sleep.

So, by the ripe old age of 5, she knew she wanted to be a psychologist, initially a child psychologist. “Maybe,” says the Los Angeles native, “I saw an after-school special on TV on troubled kids and how they were helped by a psychologist.”

However, many years later, partway through her master’s program, Desirée realized that she may not have the temperament to be a clinical psychologist, especially a child psychologist, so she switched her emphasis and will complete her Ph.D. in social psychology this year.

**LACES Responsibilities and Rewards**

When Desirée started working on LACES—whose purpose is to evaluate and provide feedback to all L.A. County substance abuse treatment providers—seven people staffed LACES. That was five years ago.

Now, Desirée does everything except train providers on the evaluation instruments, which is done by ISAP’s Derrick Brown. Desirée is responsible for protecting participants’ interests, including their privacy; writing monthly and annual project reports for L.A. County, which funds the project; data management and analysis; drafting new evaluation instruments; and representing LACES at county, state, and federal meetings.

The biggest challenge is “dealing with the sheer size of L.A. County,” says Desirée. “There are well over 500 county-funded programs that treat alcohol and drug disorders, and those programs see between 40,000 and 50,000 clients per year.”

The reward for Desirée has been knowing she’s part of the effort to bring scientifically valid evaluation and treatment procedures to L.A. County. “We trained approximately 1,500 treatment staff to use techniques that improve the information gathered at intake,” says Desirée. “And, we’ve collected one-year information that shows that treatment in L.A. County has had a positive impact.”

LACES also has provided programs with data that shows how their clients are faring compared with other county programs. “The programs see the benefits of evaluation,” says Desirée, “especially since the state and federal governments now require outcome information. Because L.A. County started their evaluation years ago, it means we’re that far ahead of the game.”

**Outside Interests and Influences**

Outside of research on substance abuse and treatment, Desirée is interested in hate crimes, which was the topic of both her master’s and doctoral theses.

Outside of work, she likes to read, and she collects signed first editions by Ray Bradbury (Farenheit 451, Martian Chronicles) and any books by Freud and William James. Lately, she’s been reading horror classics, such as Dracula and The Picture of Dorian Gray.

“I liked the concept of Dracula,” says Desirée, “but Gray was better written, and on some level the character was slightly more interesting.”

The biggest influence in Desirée’s life occurred two years ago, when a good friend in his mid-40s died from a brain tumor. “He was a workaholic, brilliant, and great to hang out with,” says Desirée. “He basically worked up to the day he died.”

“Between his diagnosis and death, I only saw him once. That taught me that I needed a better balance between work and personal life. Work is great, and at times it’s easy to get obsessed with it, but other things are important, too.”


Specific training in addiction on college campuses and medical schools is extremely rare. When available, these trainings are usually in the form of single course lectures, coverage of articles in a journal club series, or, at best, an individual course in addiction.

Because medical and graduate students are unlikely to be exposed to in-depth discussion on topics of drug addiction, ISAP’s Tom Newton and Steve Shoptaw established the UCLA Addiction Clinic in 2003.

The clinic is a component of an integrated training program emphasizing drug addiction research and treatment. It provides a place for students, trainees, faculty, and interested members of the public to receive the most up-to-date information on drug abuse and addiction.

Information about the clinic is available on the Web at www.uclaisap.org/addclinic.

The Addiction Clinic consists of three major components: The Outpatient Treatment Clinic, the Seminars in Addiction Psychiatry course, and the Biweekly Journal Watch.

The Outpatient Treatment Clinic, led by Dr. Newton, is based on the standard UCLA psychiatry resident teaching clinic. Individual residents and fellows see patients and develop treatment plans. These are reviewed by attending physicians who interview the patient with the trainee. The goals of the program are to diagnose and treat primary addictions and co-morbid psychiatric illnesses.

The Seminars in Addiction Psychiatry course is led by Dr. Shoptaw. It provides a comprehensive curriculum integrating basic neuroscience (including brain pathways, targets and molecules, and behavior), animal models, neuropharmacology, neuroimmunology, neuroendocrinology, genetics, inpatient and outpatient treatment, as well as social and political issues of drug addiction research and treatment.

In addition, the course provides training in the basics of career building, including grant writing, manuscript preparation, and time management.

The Biweekly Journal Watch, led by Dr. Richard De La Garza, is designed to keep Addiction Clinic attendees current on the most important publications in biomedical journals.

We welcome you to visit the Addiction Clinic Web site often and encourage you to utilize the many resources available to visitors at no charge.

You can download and review PowerPoint lectures from the Seminars in Addiction Psychiatry Course, peruse recommended readings, follow the Journal Watch hot articles list, and check into suggested links to other sites such as those for the College on the Problems of Drug Dependence and Society for Neuroscience.

The UCLA Addiction Clinic Web site is maintained and updated weekly by Ken Booker, ISAP’s Webmaster. Ken has organized a beautiful and user-friendly site, and we are grateful to him for his hard work on this ongoing project.
State of Methamphetamine Research

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Clinical Science Research

Richard Rawson (UCLA ISAP) provided a detailed overview of methamphetamine treatment, including data on treatment response, sexual behavior, and route-of-administration differences.

Frank Vocci (NIDA), Thomas Newton, and Steve Shoptaw (both of UCLA ISAP) presented the latest information regarding medication development and the role of human laboratory studies in treatment research for methamphetamine dependence.

Martin Paulus (UC San Diego) presented data from functional magnetic resonance imaging studies that modeled simple decision-making processes to predict relapse in methamphetamine-dependent individuals.

John Mendelson (UC San Francisco) concluded the meeting by discussing the effects of methamphetamine on humans as well as pharmacological methods for measuring the actual amount of methamphetamine people consume as opposed to the amounts they think they’re consuming.

The title of Dr. Volkow’s presentation captured the essence of the meeting—“Methamphetamine Research: Where Do We Need to Go?”

Dr. Volkow challenged the group to move beyond the current research and think of new ways to describe the factors that contribute to methamphetamine addiction. She advocated integrating a systems approach into future research to take into account the many domains (e.g., drug effects, social structure, behavior, genetics) that play a role in methamphetamine dependence.

She further encouraged the participating researchers to study the interaction of drugs and HIV. She ended by stating, “Drugs play an extremely important role in the worldwide HIV epidemic. How does methamphetamine, in particular, contribute to HIV? You may be able to change the nature of the HIV epidemic by changing the nature of drug abuse.”