Methamphetamine and the Latest Research on Promising Practices for Drug Courts

Shannon Carey, Ph.D.
Tamara Perkins, Ph.D.

Missouri Association of Drug Court Professionals

4380 SW Macadam Ave., Ste. 530
Portland, OR 97239
503.243.2436

Informing policy, improving programs

April 24, 2008
Presentation Overview

- Introduction to the current Missouri Drug Court Evaluation
- Overview of Latest Research on Methamphetamine
- Meth and Drug Court Practice
- Drug Court Practices Related to Positive Outcomes and Cost Savings
- MO Evaluation
- Preliminary Findings from MO Drug Courts
Methamphetamine Users in Missouri

Drug Courts: Program Elements Associated with Success

- Review of the current literature on methamphetamine use and treatment
- Analysis of drug court practices and participant characteristics

April 24, 2008 MADCP
Project Background

- Literature Review
- Participant Characteristics – Database
- Drug Court Practices – 2 Surveys
Project Background

Status:

• The two surveys are now complete and we have begun compiling the responses
• We have some preliminary results from the database to show you later!
• Literature review is done and will be presented next.
Part I: Methamphetamine

Background

Photo source: http://www.eyesoftheworldmediagroup.com/portfolio_educational_meth.asp
Meth Use

The Bad News

Meth Use

The Good News
Overview of the Latest Research on Methamphetamines

• Physical, social and environmental effects
• Treatment best practices
• Drug court research
• Implications for drug court practices

How Does Methamphetamine Work?

- Releases neurotransmitters in the brain
  - Dopamine (primary effect)
- Feelings of well-being and alertness, increased sexual drive and decreased appetite
- Long term use → increased dosage → addiction → more severe physiological & psychological effects
How is MA Different from Other Stimulants?

- Transfers more quickly into the brain
- Effects last longer
  - 8-13 hours for MA vs. 1-3 hours for cocaine
- Heightened sexual pleasure & performance
Comparison of Brain Structure: MA Users vs. Non-MA Users

Normal brain  Meth abuser (1 month detox)  Meth abuser (24 months detox)

Source: Volkow, ND et al., Journal of Neuroscience 21, 9414-9418, 2001 as cited in Rawson, R. 2007
Psychological Effects

• Anxiety, insomnia, aggression, paranoia and hallucinations
• MA-induced psychosis
  ▪ Even after MA use stops
  ▪ Psychotic relapses more likely if MA use reoccurs
MA and Brain Functioning

• Extensive cognitive damage resulting from exposure to MA

• Cognitive damage from meth includes:
  - Working memory impairments
  - Inability to focus
  - Difficulties with abstract reasoning
  - Lack of inhibition
  - Inability to plan
  - Poor judgment
  - Language difficulties
Withdrawal

- Fatigue
- Anxiety
- Irritability
- Depression
- Inability to concentrate
- Suicidality

Photo source: http://www.methamphetamine.org
X-Ray: Twelve 2-inch Nails
Medical Complications

- Infections from abscesses, burns or picking
- Secondary infections, e.g., HIV/Hepatitis/STDs
- Chronic medical conditions that have been ignored while using (e.g. diabetes)
- Scarring from IV use
- Long term use shrinks body fat and muscles
- Meth mouth
Meth Mouth

Source: Courtesy Robert D. Thomas DDS, Savannah, TN
Meth’s Impact on Social Systems

- Criminal justice
- Behavioral health
- Child welfare
- Education
- Medical system
- Environment

Photo source: Mike P. McGuire, presentation, May 2006:
http://www.ncsacw.samhsa.gov/conf_Methamphetamine.html
Part II: Treatment for Methamphetamine
Do you know what types of treatment are being used with your drug court’s participants?
Evidence-Based Treatment for MA Abuse

- Debate about treatment effectiveness
- MA users have similar outcomes across many types of treatments
  - Completion rates
  - Drop out rates
  - Retention in treatment rates
  - Re-incarceration rates
Contingency Management

- Positive reinforcements for desired behaviors
  - Tangibles: movie tickets, grocery gift cards, bus tickets
  - Intangibles: clapping, verbal praise
- CM results in longer periods of abstinence, treatment retention and completion
Other Treatments

• Motivational Interviewing (MI)
• Cognitive Behavioral Therapy (CBT)
• Matrix Model
• Community Reinforcement Approach (CRA)
• Medications (immunization?!
• Exercise
Special Populations and MA Use

- Women
- Men who have Sex with Men (MSM)
- Homeless people
- People with serious mental health issues
- IV meth users
- Young adults
The Good News

- Very little difference between MA users and other substance users with respect to treatment outcomes

- “Adult MA users are significantly more likely to complete treatment than users of either alcohol or other hard drugs”
  - Luchansky et al 2007

- In a multi-site MA treatment program study, the drug court site had the highest retention and completion rates!
  - Rawson et al 2004
More Good News

Before DC

After DC
MA Implications for Drug Court Practice – Drug Court Team

• Train staff how to deal effectively with behavioral issues like psychosis
• Institute random and unannounced home visits and drug testing
• Increase drug court status hearings for the first 90 days of the program
• Use positive reinforcements for short term achievements
• Train staff how to talk about MA use and sex
• Speak slowly and repeat!
MA Implications for Drug Court Practice – DC Participants

- Need skills to become employed and live independently
- Need positive social supports to encourage abstinence and provide moral support
  - Involve family if possible
- Long term MA use may show up on a UA longer than the usual 48-72 hours
MA Implications for Drug Court Practice - Treatment

- Provide longer, evidence-based, relevant (e.g. population specific) tx services
- Provide continuing care in first few months after DC treatment completion to help with vulnerability to relapse
- Train A&D treatment providers to talk to clients about MA use and sex
- Speak slowly and repeat!
Meth Resources

• Researchers at UCLA have compiled much of the recent literature about meth abuse, physical and psychological consequences and treatment
  - http://www.uclaisap.org
  - http://www.methamphetamine.org

• For more about contingency management, visit
  - http://nattc.org/pami/pami_home.html
Part III: Promising Drug Court Practices
What Else Do We Know About Drug Court Practices?

• In our evaluations in other states we have found several practices that were related to positive outcomes for drug court participants.

• Positive outcomes include higher graduation rates, lower recidivism and cost savings.

• Looked at drug court practices 18 drug courts in California, Maryland, Michigan, Oregon and Guam.
What Works Best?

• Should the drug court use a single treatment agency or multiple treatment agencies?
• Should a treatment representative attend drug court sessions?
• Should the defense attorney attend staffing meetings?
• How quickly do you need drug test results?
• How often should drug tests be required?
• Should the drug court require training for all team members?
• Does evaluation really help drug courts?
Courts That Used a Single Treatment Agency had 10 Times Greater Savings

Note: Difference is significant at p<.05

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual
Courts That Require a Treatment Representative at Drug Court Sessions Had 9 Times the Savings

"Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at $p<.05$
Drug Courts Where the Public Defender Was Expected to Attend All Drug Court Team Meetings Had 8 Times the Savings

The Public Defender is Expected to Attend All Drug Court Team Meetings

Percent Improvement in Outcome Costs*

<table>
<thead>
<tr>
<th>Yes</th>
<th>N=6</th>
<th>41%</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>N=4</td>
<td>5%</td>
</tr>
</tbody>
</table>

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at p<.05
Courts that Received Drug Test Results Within 48 Hours of Sample Collection Had 3 Times Greater Savings

Program Receives Drug Testing Results within 48 Hours

<table>
<thead>
<tr>
<th>Percent Improvement in Outcome Costs*</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N=5</td>
<td>N=7</td>
</tr>
<tr>
<td></td>
<td>33%</td>
<td>10%</td>
</tr>
</tbody>
</table>

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at p<.05
Courts that performed drug testing 2 or more times per week in the first phase had 42% lower recidivism costs (greater savings).

Program Performs Drug Testing at Least Twice per Week

- Yes, N=10: 33% improvement
- No, N=3: -9% improvement

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at p<.05
Drug Courts That Provided Formal Training for All Team Members Had 5 Times Greater Savings

All Drug Court Team Members Get Formal Training

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at p<.05
Drug Courts That Used Evaluation Feedback to Make Modifications to the Program Had 4 Times Greater Savings

Drug Court Uses Evaluation Feedback to Make Modifications

- Yes: N=4, 44% improvement
- No: N=6, 11% improvement

* "Percent improvement in outcome costs" refers to the percent savings for drug court compared to business-as-usual

Note: Difference is significant at p<.05
Part IV: MO Methamphetamine and Drug Courts Evaluation
MO Evaluation

Focused on a specific evaluation question:

What drug court practices are related to higher graduation rates for methamphetamine using participants?

• Process Evaluation
• Outcome Evaluation
Process Evaluation

**Implementation:** Was the program implemented and providing services as intended?

**Program History:** How was the program implemented? What decisions were made in developing the program? Who were the key actors?

**Program Operation:** How does the program operate? What services does it delivers? Are the practices consistent with the 10 key components?
The Benefits of a Process Evaluation

• Provides useful Information about program functioning
• Allows an assessment of the reasons for successful or unsuccessful performance
• Provides information for replicating the program in another site
• Contributes to program improvement
• Increases effectiveness for participants
• Better Outcomes, Better Cost-Benefits
What drug court practices are related to higher graduation rates for methamphetamine using participants?

- Process Evaluation
- Outcome Evaluation
Outcome/Impact Evaluation

**Outcome** Evaluation: Within Program
- Services received
- Graduation rate
- Factors that lead to graduation
- **No Comparison Group Needed**

**Impact** Evaluation: Outside/After Program
- Recidivism
- Subsequent treatment
- Subsequent social services or health care
- **Comparison Group Needed**
Why Does Impact Evaluation Need A Comparison Group?

• An impact evaluation asks the question, “Did the program make a difference?” (e.g., recidivism)

• To see a difference, or an impact, there has to be a baseline that tells you, “different from what?”

• A comparison group is the baseline: it tells us what would have happened if there had been no program.

• As a rule, you can’t compare graduated to terminated participants, because both received the program.
Options for No Comparison Group

You can compare graduates to terminated when you want to know what is different between those who graduate and those who do not.

- Example: If more men graduate than women, it may be an indication that the program needs gender specific services.
- Example: If those who use meth are less likely to graduate, that may tell us that the program needs to adjust their services to fit their meth population.
You can also compare practices across programs to see if certain practices consistently lead to a higher graduation rate.

Example: If more meth users graduate in some programs compared to other programs, we can look at what practices were used in the programs with higher graduation rates that weren’t used in the court with lower graduation rates.
Current Evaluation in MO: Methods

• Comparing participant characteristics and program practices across drug courts to find out what leads to higher graduation rates

  • Drug Court Practices – 2 Surveys
  • Participant Characteristics – Database
Current Evaluation in MO: Preliminary Results

Drug Court Participants Statewide:

Demographics
### Participant Characteristics at Admission

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>70%</td>
</tr>
<tr>
<td>Black</td>
<td>30%</td>
</tr>
<tr>
<td>White</td>
<td>69%</td>
</tr>
<tr>
<td>Average age</td>
<td>29 years</td>
</tr>
<tr>
<td>24 years or younger</td>
<td>42%</td>
</tr>
<tr>
<td>Employed full- or part-time</td>
<td>50%</td>
</tr>
<tr>
<td>Rent or own place of residence</td>
<td>45%</td>
</tr>
<tr>
<td>Have high school diploma/GED (or higher)</td>
<td>59%</td>
</tr>
<tr>
<td>Never married</td>
<td>65%</td>
</tr>
<tr>
<td>Graduated from drug court</td>
<td>53%</td>
</tr>
<tr>
<td>Use meth</td>
<td>26%</td>
</tr>
</tbody>
</table>
Current Evaluation in MO: Preliminary Results

Drug Court Participants Statewide: Methamphetamine Users
Current MO Evaluation: Meth User Characteristics

Participant Sex by Meth Use

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Meth</td>
<td>No Meth</td>
</tr>
<tr>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>30</td>
<td></td>
<td></td>
</tr>
<tr>
<td>40</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50</td>
<td></td>
<td></td>
</tr>
<tr>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70</td>
<td></td>
<td></td>
</tr>
<tr>
<td>80</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

April 24, 2008 MADCP
Current MO Evaluation: Meth User Characteristics

Participant Age by Meth Use

- **Under 25**
  - Meth: 80%
  - No Meth: 20%
- **25-29**
  - Meth: 70%
  - No Meth: 30%
- **30-34**
  - Meth: 60%
  - No Meth: 40%
- **35-39**
  - Meth: 50%
  - No Meth: 50%
- **40-44**
  - Meth: 40%
  - No Meth: 60%
- **45-49**
  - Meth: 30%
  - No Meth: 70%
- **50 or older**
  - Meth: 20%
  - No Meth: 80%
Current MO Evaluation: Meth User Characteristics

Participant Race by Meth Use

<table>
<thead>
<tr>
<th>Race</th>
<th>Meth</th>
<th>No Meth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>120</td>
<td>0</td>
</tr>
<tr>
<td>White</td>
<td>60</td>
<td>40</td>
</tr>
<tr>
<td>Other</td>
<td>80</td>
<td>20</td>
</tr>
</tbody>
</table>
Current MO Evaluation: Meth User Characteristics

Participant Education at Admission By Meth Status

<table>
<thead>
<tr>
<th>Percentage</th>
<th>No GED/Diploma</th>
<th>GED/Diploma</th>
<th>Technical</th>
<th>BA/MA/PhD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Meth</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

April 24, 2008 MADCP
Current Evaluation in MO: Preliminary Results

Drug Court Participants Statewide:

Graduated vs Not Graduated
Current MO Evaluation: Graduate Characteristics

Meth Use by Graduation Status

Percentage

- Graduated
- Did Not Graduate

Meth
- Meth
- No Meth

April 24, 2008 MADCP
Current MO Evaluation: Graduate Characteristics

Participant Sex by Graduation Status

- Male
- Female

Graduated
Did Not Graduate
Current MO Evaluation: Graduate Characteristics

Participant Age by Graduation Status

- Graduated
- Did Not Graduate

<table>
<thead>
<tr>
<th>Age Range</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>17-24</td>
<td></td>
</tr>
<tr>
<td>25-29</td>
<td></td>
</tr>
<tr>
<td>30-34</td>
<td></td>
</tr>
<tr>
<td>35-39</td>
<td></td>
</tr>
<tr>
<td>40-44</td>
<td></td>
</tr>
<tr>
<td>45-49</td>
<td></td>
</tr>
<tr>
<td>50+</td>
<td></td>
</tr>
</tbody>
</table>
Current MO Evaluation: Graduate Characteristics

Participant Race by Graduation Status

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Graduated</th>
<th>Did Not Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Current MO Evaluation: Graduate Characteristics

Participant Living Situation at Entry by Graduation Status

- **Own**
- **Rent**
- **Live w/Others**
- **Homeless**

<table>
<thead>
<tr>
<th>Living Situation</th>
<th>Graduated</th>
<th>Did Not Graduate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Own</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Live w/Others</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Homeless</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Current MO Evaluation: Graduate Characteristics

Participant Employment by Graduation Status

- Full-time
- Part-time
- Unemployed
- Unable to work

Percentage

- Graduated
- Did Not Graduate
Current MO Evaluation: Graduate Characteristics

Other Substance Use by Graduation Status

Meth, Opiates, THC, Alcohol, Hallucinogens, Cocaine

- Graduated
- Did Not Graduate

Percentage

0 10 20 30 40 50 60 70

April 24, 2008 MADCP
Remember Good News

Before DC

After DC
Contact Information

Tamara Perkins, Ph.D.
perkins@npcresearch.com

Shannon Carey, Ph.D.
carey@npcresearch.com

To learn more about NPC or more about drug court evaluations including cost-benefit evaluations see:
www.npcresearch.com