

# **Methamphetamine Addiction, Treatment, and Outcomes: Implications for Child Welfare Workers**

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## **1. Introduction**

Methamphetamine is a highly addictive stimulant associated with serious health and psychiatric conditions, including heart damage and brain damage, impaired thinking and memory problems, aggression, violence, and psychotic behavior. Methamphetamine is also associated with the transmission of infectious diseases such as HIV/AIDS and hepatitis.

Child welfare workers are seeing growing numbers of children and families affected by the parent's use of methamphetamine. In order to make sound decisions for the benefit of children and families, child welfare workers need accurate information about methamphetamine, its effects on parents and their children, and the effectiveness of treatment. This paper presents the most current research in these areas, and offers recommendations for child welfare workers to help them identify and assist children and families affected by a parent's use of methamphetamine.

## **2. Patterns of Methamphetamine Use**

In 2004, an estimated 1.4 million persons (0.6 percent aged 12 or older) had used methamphetamine in the past year, 583,000 (0.2 percent) had used in the past month, and an estimated 318,000 used methamphetamine for the first time in the past year.<sup>1</sup> Between 2002 and 2004, the number of methamphetamine users and the number of new methamphetamine users remained relatively stable. During the same 2002 to 2004 time period, the number of past month methamphetamine users who met the Diagnostic and Statistical Manual (DSM IV) criteria for substance abuse or dependence in the past year increased from an estimated 164,000 (27.5 percent of past month methamphetamine users) in 2002 to 346,000 (59.3 percent) in 2004.<sup>2</sup>

To provide a perspective on methamphetamine use, it is helpful to compare methamphetamine users with the users of cocaine, another stimulant that has been a child welfare issue for the past two decades. Compared with cocaine users, methamphetamine users exhibit the following characteristics<sup>3,4,5</sup>:

- begin using substances at a younger age
- enter treatment at a younger age
- are more likely to use multiple drugs (especially marijuana)

- have a higher frequency of use
- are less likely to use alcohol
- report feeling less “addicted” than cocaine users
- are more likely to use methamphetamine continuously throughout the day at evenly spaced intervals and consistently over time, rather than concentrating use in the evening as cocaine users tend to do
- use fewer times per day than cocaine users (though the same amount of drug is used)
- spend less money to purchase the drug
- are more likely to be female and Caucasian

Of the total number of individuals admitted to treatment in 2003 for methamphetamine, 45% are women. This percentage of female admissions is higher than the percentage of female admissions associated with any other drugs except tranquilizers, sedatives and other opiates (i.e. non-prescription use of methadone, codeine, morphine, oxycodone, hydromorphone, meperidine, opium, and other drugs with morphine-like effects).<sup>6</sup> The implication is that more children are likely to be affected by a parent’s use of methamphetamine since caretakers are often predominately female.

Compared with male methamphetamine users, female methamphetamine users<sup>7,8</sup>:

- use methamphetamine more days in a 30-day period
- smoke rather than snort or inject the drug
- are more likely to be single parents who live alone with their children
- have worse medical, psychiatric, and employment profiles

These statistics indicate a greater risk for the children of mothers who use methamphetamine. The parent is likely to use the drug more often and have greater difficulty providing adequate parenting and economic support for the child.

Methamphetamine users, like other drug users, are more likely than non-users to have experienced physical or sexual abuse as children. A recent study found that 33% of methamphetamine users had been sexually abused before the age of 15 and a similar percentage reported childhood physical abuse.<sup>9</sup>

There is a well-documented relationship between substance abuse and child abuse and neglect.<sup>10,11,12,13</sup> Those who have been abused or neglected as children are more likely to have substance use disorders as adults, and adults with substance use disorders are more likely to abuse or neglect their own children. The result is a multigenerational cycle of substance abuse and child abuse and neglect. For this reason, effective intervention by child welfare becomes crucial, and comprehensive, integrated services are needed to break the cycle of abuse and addiction.

### **3. Effects of Methamphetamine Addiction**

To understand the physiological and psychological effects of methamphetamine use, it is helpful to review the effects of methamphetamine on the brain.

Methamphetamine appears to cause long-term structural damage to the regions of the brain that control memory and motor coordination. These effects may be related to the length of time that methamphetamine remains in the user's system.<sup>14</sup> Compared to cocaine and other drugs, methamphetamine remains active in the body much longer, and a greater percentage of the drug remains unchanged in the body.<sup>15</sup> Smoking cocaine produces a high that lasts 20-30 minutes, while smoking methamphetamine produces a high that lasts 8-24 hours. It takes one hour for 50% of a specified amount of cocaine to be removed from the body, while it takes twelve hours for 50% of the same amount of methamphetamine to be removed. For these reasons, methamphetamine remains in the brain longer, producing prolonged stimulant effects that may permanently damage blood vessels in the brain.<sup>16</sup> Methamphetamine use produces abnormal brain chemistry in all areas of the brain, and users with the greatest cumulative lifetime use have the strongest indications of cell damage.<sup>17</sup>

A significant effect of methamphetamine use is the loss of dopamine transporters in the brain.<sup>18,19,20,21</sup> Dopamine is a brain chemical that facilitates critical brain functions. Methamphetamine triggers the release of large amounts of dopamine in areas of the brain that regulate feelings of pleasure and body movement.<sup>22</sup> Dopamine transporters are structures on the neurons that clear dopamine from the space between neurons. Earlier studies speculated that the loss of dopamine transporters represented irreversible degeneration in the brain.<sup>23</sup> However, Volkow and colleagues<sup>24</sup> found that the number of dopamine transporters increased significantly after 12 and 17 months of abstinence. Their study also found that motor skills and memory did not improve at the same rate that dopamine transporters increased, within the 12- and 17-month periods of abstinence. However, in a study involving longer periods of abstinence, Lundahl and colleagues<sup>25</sup> found no deficits in motor function, memory, learning, attention, or executive function in methamphetamine users after four years of abstinence.

Methamphetamine use does cause brain damage, but protracted abstinence appears to reverse at least some of that damage. The degree of recovery is related to the length of time that the methamphetamine user remains abstinent.<sup>26,27</sup>

#### ***Cognitive Deficits***

The observable effects of methamphetamine use include cognitive deficits, health problems, and psychological problems. The cognitive deficits are discussed below, and the health and psychological effects are discussed in the next section.

Studies have found that methamphetamine users exhibit cognitive impairment. Active methamphetamine users are impaired in their ability to learn, recall, make inferences, manipulate information, and ignore irrelevant information.<sup>28</sup> Some of these cognitive deficits, including deficits in the ability to manipulate information and ignore irrelevant information were no longer present after 12 weeks of abstinence. The abstinent methamphetamine user regained the ability to manipulate information and to ignore irrelevant information. Other deficits, such as the ability to recognize and recall word became worse in this initial phase of abstinence. The deficit in picture recognition also became worse, but to a lesser degree than did the deficit in word recognition and recall.<sup>29</sup>

Research also shows that exposure to stimulant drugs such as methamphetamine can impair the ability of specific brain cells to change as a result of experience. Thus, the ability to learn from experience may be diminished by the use of stimulant drugs.<sup>30</sup>

These cognitive impairments become significant when child welfare workers work with parents who are using methamphetamine or are in the first few months of abstinence. These parents may find it difficult to pay attention, to comprehend spoken or written information, and to retain information. Because the ability to recognize pictures is less impaired than the ability to recognize words, treatment providers have begun using visual cues, such as handouts with pictures when working with these clients.<sup>31</sup> Child welfare workers can use this strategy to provide information to parents in a way they can more easily comprehend and retain.

### ***Health Effects and Psychological Effects***

Methamphetamine use is associated with serious health problems, including cardiovascular problems and HIV risk behavior.<sup>32,33</sup> Side effects include rapid and irregular heartbeat, increased blood pressure, hyperthermia, convulsions, stroke, insomnia, restlessness, and tremors<sup>34,35,36</sup>. After prolonged use, methamphetamine users may exhibit nosebleeds, itching, skin welts and lesions, and infected injection sites.<sup>37</sup> They may also experience nausea, vomiting, and diarrhea. Weight loss and malnutrition are common, due to the decrease in appetite caused by the drug. Users may have significant dental problems, including gum disease and tooth loss, after long-term use.<sup>38</sup> Dental problems result from a combination of factors, including the reduction in saliva caused by methamphetamine, poor dental hygiene, and poor nutrition due to decreased appetite.

Methamphetamine use is also associated with a variety of psychological problems. Methamphetamine users appear to be more psychologically disturbed, to have more psychological problems, and to be more out of control than other substance abusers.<sup>39</sup> Chronic methamphetamine use can lead to psychotic behavior, including intense paranoia, confusion, visual and auditory hallucinations, and violent behavior.<sup>40,41</sup> Psychotic symptoms can sometimes persist for months or years after use has stopped.<sup>42,43</sup>

Individuals who stop using methamphetamine may experience depression and anxiety. In the 12 months following treatment, methamphetamine users were more likely to have psychiatric difficulties, legal difficulties, family problems, and dissatisfaction with their lives than other substance users.<sup>44</sup> Even at two to five years after treatment, the rate of headaches and depression reported by former methamphetamine users was similar to the rate they reported at admission to treatment.<sup>45</sup> A recent study of methamphetamine users found higher levels of glucose (indicating greater activity) in brain regions linked to anxiety and drug cravings, compared to the levels found in non-abusers.<sup>46</sup> It is unclear whether these findings are specific to methamphetamine addiction, or may apply to other stimulant users as well.

It is critical that child welfare workers recognize the implications of the health and psychological effects of methamphetamine use. These effects can seriously interfere with a parent's ability to comply with case plan requirements. Primary health care and mental health treatment may need to be included in the case plan, and parents may need continued support in accessing and receiving those services.

## **4. Effects of Parental Methamphetamine Use on Children**

Situations in which children are affected by their parent's involvement in methamphetamine include:

- The parent uses or abuses methamphetamine (episodic use)
- The parent is chemically dependent on methamphetamine
- The mother uses methamphetamine while pregnant with the child
- The parent "cooks" small quantities of methamphetamine in the home
- The parent sells, transports, or distributes methamphetamine (traffickers)
- The parent manufactures large quantities of methamphetamine (superlabs)<sup>47</sup>

Each situation presents specific risks and dangers for the child and specific concerns for the child welfare worker. Each separate situation is discussed below.

### ***Parents Who Use or Abuse Methamphetamine***

In 2004, an estimated 418,000 (0.2 percent aged 18 or older) had used methamphetamine in the past month.<sup>48</sup> Given the number of adults who currently use methamphetamine, episodic parental use or abuse of methamphetamine is the most common means by which children are affected by parental methamphetamine use. This method of exposure accounts for the highest number of children exposed to methamphetamine, compared to the numbers found in the other categories.<sup>49</sup>

Parents under the influence of stimulants, including methamphetamine, pose a danger their children. When high, the parent may exhibit poor judgment, confusion, irritability, paranoia, and increased violence; they may fail to provide adequate supervision. The family and social environment may be poor, and the children may be at risk of abuse and neglect due to the family dynamics associated with substance use.<sup>50</sup>

In households where a family member smokes the substance, children may be exposed to secondhand methamphetamine smoke. They may accidentally ingest the substance if it is kept in the home.

Because methamphetamine users typically use other substances at the same time, including alcohol, tobacco, and other drugs, the risks to their children accumulate, and it becomes difficult to attribute a particular effect to a particular substance.

### ***Parents with Methamphetamine Dependence***

When the parent is dependent on methamphetamine, chronic neglect of the children becomes more likely, and the family and social environment is more likely to be inadequate. The children are exposed to the drug-affected parent more frequently and for longer periods of time. They may be found living in poor conditions, lacking food, water, gas, and electricity. They may lack medical care, dental care, and immunizations. These children are also at greater risk of abuse.<sup>51</sup>

### ***Prenatal Exposure***

Pregnant methamphetamine users appear to know less about the potential harm to themselves or the fetus, compared to users of crack cocaine or heroin.<sup>52</sup> Crack cocaine users were more likely than the other two groups to fear the negative effects of their drug use on their fetus. Heroin-using women were concerned about the effects of their drug use,

but primarily concerned with avoiding potential parental custody problems. Women in all three groups tended to avoid prenatal care clinics.<sup>53</sup>

Since the crack epidemic of the late 1980's, researchers have been aware that prenatal stimulant exposure has both direct and indirect effects.<sup>54</sup> The fetus is directly affected by the cocaine that enters its system, and it is indirectly affected by the decrease in the mother's blood flow that results from cocaine use. Many of the effects of prenatal exposure to methamphetamine have also been documented among infants exposed to other substances, particularly cocaine/crack.<sup>55</sup> Many studies of the effects of prenatal exposure however compare methamphetamine-exposed infants to non-exposed infants without also comparing them to cocaine-exposed or other stimulant-exposed infants, so it is not known whether the effects are associated with methamphetamine in particular or with all stimulants.

Stimulant-exposed children may also be affected by other substances used by the mother, and by environmental risk factors such as the mother's nutritional and health status. Recent surveys indicate that 12-14% of all pregnant women consume alcohol<sup>56</sup> and two-thirds of female smokers continue to smoke during pregnancy.<sup>57</sup> Among meth using pregnant women<sup>58</sup>, nicotine use is nearly universal while marijuana and alcohol were secondary drugs used by 60% of the women. The cumulative effects of the use of multiple substances and other environmental risk factors have significant adverse effects on the newborn. These effects may be greater than the effects of stimulant use alone.<sup>59</sup> Prenatal substance exposure can cause birth defects, fetal death, growth retardation, premature birth, low birth weight, developmental disorders, difficulty sucking and swallowing, and hypersensitivity to touch after birth.<sup>60,61,62</sup>

Methamphetamine exposure during pregnancy can jeopardize the development of the fetal brain and other organs. An echoencephalographic study of neonates who were exposed prenatally to methamphetamine or cocaine indicated higher rates of bleeding, decay, and lesions in the brain.<sup>63</sup> A high dose of methamphetamine taken during pregnancy can cause a rapid rise in temperature and blood pressure in the brain of the fetus, which can lead to stroke or brain hemorrhage. Infants prenatally exposed to methamphetamine are significantly smaller for their gestational age compared with unexposed infants<sup>64</sup>, and methamphetamine-exposed infants whose mothers also smoked tobacco had significantly decreased growth, compared with infants exposed to methamphetamine alone.<sup>65</sup>

Earlier studies of infants prenatally exposed to cocaine, methamphetamine, or both revealed no significant differences in perinatal variables among the three drug-exposed groups.<sup>66</sup> All three groups had altered neonatal behavioral patterns, characterized by abnormal sleep patterns, poor feeding, tremors, and hypertonia (excessive muscle tension). All three groups also had significantly higher rates of prematurity and intrauterine growth retardation, and had smaller head circumferences, compared to the drug-free comparison group.<sup>67</sup> Infants exposed prenatally to methamphetamine are more likely than other prenatally exposed infants to experience feeding problems due to difficulty in sucking and swallowing. Shah<sup>68</sup> found that 34.4% of methamphetamine exposed infants had feeding problems compared to 9.4% of infants prenatally exposed to cocaine. These difficulties suggest that infants prenatally exposed to methamphetamine may be at risk for failure to thrive issues.

Longer-term effects of prenatal methamphetamine exposure may be similar to other substances: long-term cognitive deficits, learning disabilities, and poor social adjustment in older children.<sup>69,70</sup> Over-stimulation and self-regulation difficulties have been observed with cocaine-exposed children<sup>71</sup>, and these effects may be seen in children exposed to other

stimulants. A study showed alterations of brain chemistry in children that may be related to findings that some cocaine-exposed children are more impulsive and easily distracted than their non-exposed peers.<sup>72</sup> Additional research is needed to determine if the same effects are found in methamphetamine-exposed children. Shah<sup>73</sup> describes the symptoms of prenatal exposure to methamphetamine in children 18 months to 5 years include less focused attention, easily distracted, poor anger management, and aggressive outbursts.

For many years child welfare agencies have been working with mothers, their infants and the families affected by prenatal stimulant exposure and can draw on those experiences to create the programs and services needed to address the needs of families affected by prenatal methamphetamine exposure as well.

### ***Home Labs***

Some parents produce relatively small quantities of methamphetamine in their homes for their own use or small-scale distribution. Children in these homes are subject to the same risks noted in the sections on parents who use/abuse and are dependent on the drug, but they have additional risks associated with the substances used in the production of methamphetamine and the method of production. The children may be exposed to toxic chemicals, contaminated food, fumes released during the “cooking” process, and the danger of fire or explosion from the manufacturing process.

The risk of toxic exposure for children in homes where methamphetamine is manufactured is high. Children are more likely than adults to suffer health effects from exposure to chemicals. They have higher metabolic rates; their skeletal systems and nervous systems are developing; their skin is not as thick as an adult’s skin, which means they absorb chemicals faster; and children tend to put things in their mouths and use touch to explore the world. Some fumes or gases are heavier than air, and will sink down to the child’s level, increasing their exposure. Children also tend to imitate adult behavior and are vulnerable in chaotic and unsafe environments.<sup>74</sup> A review by Kolecki<sup>75</sup> revealed that pediatric patients with methamphetamine poisoning often exhibited rapid heartbeat, agitation, inconsolable crying, irritability, and vomiting.

The section on superlabs below includes signs of methamphetamine production and symptoms of methamphetamine exposure.

### ***Trafficking***

Parents who traffic in methamphetamine by selling, transporting, or distributing it, expose their children to an increased risk of violence and abuse associated with drug trafficking. There may be weapons in the home. The parent’s associates or customers may carry weapons, putting the children at risk for violence. These children are also at increased risk of physical and sexual abuse by those who visit the home.<sup>76,77,78,79</sup>

### ***Superlabs***

Superlabs are methamphetamine laboratories where methamphetamine is produced on a large scale. Children are sometimes found in these superlabs, but they are less likely to be present in superlabs than in the homes where smaller quantities are produced. From 2000 to 2003, there were 7,513 known cases of children present at seized methamphetamine laboratory sites nationwide, with only 2,881 taken into protective custody.<sup>80</sup> During the same time frame, almost 1.2 million children were taken into protective custody for all



reasons.<sup>81</sup> The number of children removed from their parents due to methamphetamine lab involvement is an extremely small percentage of the total number of removals.

In 2001, the states reporting the highest number of children present at methamphetamine labs were California (503), Washington (326), Oregon (241), and Missouri (161). These figures are probably underreported, since many states do not keep records on children present at laboratory sites, nor do they medically evaluate the children for the presence of drugs or chemicals.

Children in methamphetamine labs are exposed to great risk. They are exposed to the chemicals used in the production of methamphetamine. They may be at increased risk for severe neglect, and may be physically or sexually abused by family members or others who frequent the lab.<sup>82,83</sup> They are exposed to the toxic effects of methamphetamine manufacturing such as fire explosions, toxic gas, and toxic waste. A child can also be harmed by consuming a chemical from a container or ingesting methamphetamine.<sup>84</sup>

Child welfare workers should be aware of the symptoms of methamphetamine exposure so that they can identify children affected by methamphetamine labs or their own exposure to toxic chemicals. Because of the creation of toxic waste at methamphetamine labs, many first response personnel incur injury when dealing with the hazardous substances.<sup>85</sup> Medical evaluation and treatment may be indicated if symptoms of illness develop following contact with methamphetamine lab chemicals or residual toxins. Symptoms<sup>86</sup> include:

- Chronic cough
- Chest pain or tightness
- Shortness of breath
- Dizziness
- Headache
- Skin and eye irritation
- Chemical burns
- Nausea
- Lethargy

In addition to the toxic effects, there are other signs that could signal the presence of a methamphetamine lab. These include:

- Unusual, strong odors (like cat urine, ether, ammonia, acetone, or other chemicals) coming from sheds, outbuildings or other structures, orchards, campsites, or vehicles
- Possession of unusual materials, such as large amounts of over-the-counter allergy/cold/diet medications (including ephedrine or pseudoephedrine), or large quantities of solvents (such as acetone, Coleman fuel, or toluene)
- Discarded items such as ephedrine bottles, coffee filters with oddly-colored stains, lithium batteries, antifreeze containers, lantern fuel cans, and propane tanks
- The mixing of unusual chemicals in house, garage, or barn, or the possession of chemical glassware by persons not involved in the chemical industry
- Heavy traffic during late hours
- Residences with operating fans in windows in cold weather or blacked out windows
- Renters who pay their landlords in cash.<sup>87</sup>

Through a grant funded by the Children's Bureau (DHHS), Crowell and Webber at the Illinois State University School of Social Work have created a training program for child welfare supervisors. This document provides information on signs of client methamphetamine use

and caseworker safety procedures. It can be found at:  
<http://www.drugfreeinfo.org/PDFs/strengthensupervision.pdf>.

The California Attorney General's Office Crime and Violence Prevention Center has created a synopsis of information about methamphetamine labs and how to respond. This is excellent information for child welfare workers who may be entering a house for the first time. This can be found at: <http://www.safestate.org/shop/files/clanlab.pdf>.

The considerations are complicated for child welfare workers dealing with a case where a methamphetamine lab is involved. Family reunification considerations must address the issues of child safety and well-being based on the child's potential exposure to toxic substances. Reunifying families where the home environment is literally toxic is problematic. Child welfare workers must also consider the possibility of methamphetamine use among potential relative caregivers.

## **5. Medical Interventions for Children**

Drug Endangered Children (DEC) teams have been created in several counties across the nation to deal specifically with methamphetamine labs.<sup>88</sup> Each DEC team includes a specially trained public health nurse, a county physician, and a social worker, to ensure that children are properly documented and monitored to keep them away from the dangerous conditions of a methamphetamine lab. Children are examined several times during the 18 months following identification to ensure that they have not suffered ill effects from the chemicals found in methamphetamine labs. During a typical DEC response, a public health nurse examines the child at the scene to determine whether emergency health care is needed. If not, the child is scheduled for a doctor visit within 48 hours. Follow-up exams are set for 30 days, six months, a year, and 18 months later. The Office of National Drug Control Policy (ONDCP) provides medical protocols for children found at methamphetamine lab sites (See Appendix 1). These protocols are color coded to identify the agency responsible for each part of the protocol. This document includes:

- A field medical assessment protocol to determine whether children are in need of emergency medical care
- An immediate care protocol for those problems that cannot wait 24 hours to be treated at the baseline exam; immediate care should be provided as soon as possible after significant health problems are identified
- A baseline assessment protocol to ascertain a child's general health status
- An initial follow-up care protocol to reevaluate the comprehensive health status of the child, identify any latent symptoms, and ensure appropriate and timely follow-up of services as the child's care plan and placement are established
- A long-term follow-up care protocol to: 1) monitor physical, emotional, and developmental health; 2) identify possible late developing problems related to the methamphetamine environment; and, 3) provide appropriate intervention.

Dr. Rizwan Z. Shah, the Medical Director of the Child Abuse Program at Blank Children's Hospital in Des Moines, developed an "effective care plan for drug-exposed infants" (See Appendix 2). This treatment plan was developed in response to infants exposed to any stimulant and has been effective when used with methamphetamine-affected infants.

It is difficult to grasp the true extent of the methamphetamine problem that child welfare workers face. Child welfare systems generally do not indicate whether reports of child abuse are related to substance abuse in general or methamphetamine use in particular. Much of what we know about children living with methamphetamine-using parents comes through the criminal justice arena.<sup>89</sup>

Although DEC teams incorporate medical and child welfare responses, they do not typically include substance abuse treatment agencies in their operations. Perhaps DEC teams assume that the criminal justice system will motivate parents toward treatment and provide access to appropriate treatment programs. Unfortunately, many jurisdictions do not have the structures or linkages in place to effectively address the needs of the parent for treatment. Intervention for the parent and entry to treatment programs may be the appropriate response in many cases. Research has established the efficacy of treatment programs for methamphetamine users. DEC programs focus their energy and attention on the children. It is crucial to create linkages between substance abuse treatment providers, child welfare services, and the courts, particularly in those jurisdictions that are experiencing increased methamphetamine use, in order to achieve positive outcomes for children affected by their parent's methamphetamine use.

## **6. Treatment Options for Parents**

There are various treatment options for methamphetamine users. These include inpatient hospitalization for severe cases of long-term methamphetamine dependence, and outpatient treatment with behavioral therapies such as cognitive behavioral therapy, contingency management, and the Matrix Model.<sup>90</sup> Contingency management reinforces the person for not using the drug by providing vouchers or other reinforcements. This method effectively reduces methamphetamine use during treatment.<sup>91</sup> Motivational interviewing and brief intervention models also hold promise for early intervention.<sup>92</sup> Anglin and colleagues<sup>93</sup> suggest that the optimum treatment for methamphetamine users is an intensive outpatient setting where the client receives comprehensive counseling three to five times per week for at least the first three months.

Between 1999 and 2001, the Substance Abuse and Mental Health Services Administration, Center for Substance Abuse Treatment, supported the largest randomized clinical trial of treatment for meth dependence based on the Matrix Treatment Model. The Matrix Model provides a structured outpatient treatment program that combines behavioral, educational, and 12-step counseling techniques; relapse prevention groups; social support groups; individual counseling; family and group sessions; and urine and breath testing.<sup>94,95</sup> Clients participate in the program three times a week for six months. The program is based on a cognitive-behavioral approach, and is designed in phases that decrease in intensity. The Matrix Model has been found to retain more than 50% of patients for a clinically meaningful treatment episode.<sup>96</sup> Evaluations of the Matrix Model have supported its usefulness and efficacy with methamphetamine users.<sup>97,98,99</sup> The Matrix Model is documented in a manual that allows providers to present the program in their own setting.

The findings from these treatment approaches indicate that treatment models for cocaine and other substance users are equally effective when used with methamphetamine users. The "best practices" developed for treatment of other substances of abuse can also be applied in the case of methamphetamine.

Treatment practices may require some modification for methamphetamine users. The cognitive deficits found in methamphetamine users, and the tendency for the deficits to

worsen in the early phase of recovery, may need to be accommodated. Because the impairment of picture recognition is less severe than the impairment of word recognition, some treatment programs have relied on visual cues in providing information to clients. Methamphetamine users in recovery are more likely to understand and remember handouts that include pictures.<sup>100</sup>

Another issue that needs to be considered in methamphetamine treatment is the generally continual pattern of use. Understanding this pattern helps treatment providers and substance users identify the circumstances and triggers that may lead to relapse.<sup>101</sup>

There are no effective pharmacological treatments for methamphetamine dependence at the present time. Medication adjuncts to behavioral therapy are being researched.<sup>102,103</sup>

Recent research into the correlation between methamphetamine use and psychiatric disorders, particularly depression and anxiety, has highlighted the need for a mental health component in methamphetamine treatment. Treatment outcomes may improve if the client's mental health problems are addressed during treatment.<sup>104,105,106</sup>

A child welfare worker who encounters a parent in need of treatment for methamphetamine use should refer the parent to a treatment agency for a comprehensive assessment. The assessment should determine the level of care the person needs and the ancillary services they require, including mental health services, medical treatment, housing, parenting classes, etc. Once the parent has entered a treatment program, the child welfare worker may want to learn what services the parent is receiving in addition to treatment.

## **7. Treatment Outcomes**

Research indicates that treatment outcomes for methamphetamine users are similar to those of other drug users, including cocaine users.<sup>107,108</sup> In the year following discharge from treatment, no differences in treatment outcomes, such as treatment readmission, arrests, convictions, and employment, have been found between methamphetamine users and users of other substances.<sup>109</sup> Methamphetamine users appear to respond to treatment in the same way cocaine users respond, and many continue to show improvements with increasing length of abstinence.<sup>110</sup> The treatment response to a multi-component outpatient program has been found to be very similar for users of all stimulant drugs, including methamphetamine.<sup>111</sup>

Relapse rates for methamphetamine users are similar to those for other drugs. A study of substance users who were treated in publicly-funded residential or outpatient treatment programs in Los Angeles County found a 50% relapse rate for methamphetamine users, with 36% of relapses occurring within six months of completing treatment and an additional 15% within seven to 19 months after treatment.<sup>112</sup> The California Drug and Alcohol Treatment Assessment (CALDATA) study, which included residential and outpatient treatment modalities, found that 60% of methamphetamine users had relapsed at 12 months, which was similar to users of heroin and cocaine concurrently and marijuana abusers, better than heroin abusers, and less successful than cocaine or crack users.<sup>113</sup> A third study, the Los Angeles Target Cities Treatment Enhancement Project (TCTEP), showed that 35% of outpatient methamphetamine users had relapsed at 12 months compared to 23% of other outpatient drug users, a nonsignificant difference in rates.<sup>114</sup> In examining gender differences in treatment outcomes, recent study of former clients of a large publicly

funded treatment system found no differences in relapse rates among male and female methamphetamine users.<sup>115</sup>

Treatment completion rates for methamphetamine users appear to be similar or somewhat lower to that of other drug users.<sup>116</sup> One study found that 23.3% of methamphetamine users completed treatment, a rate similar to that for users of other drugs throughout California.<sup>117</sup> Methamphetamine users experienced somewhat greater difficulty in completing their programs than users of other drugs, and were marginally more likely to leave treatment prior to its completion.<sup>118</sup> Several types of methamphetamine users were found to be significantly more likely to complete treatment: those who were over 40 years old, those who had less severe drug use patterns (did not use every day or did not inject), and those who were ordered into treatment by the criminal justice system.<sup>119</sup> Methamphetamine users who did not complete their treatment program either relapsed and did not return to the program or were asked to leave.<sup>120</sup>

The relapse rates and treatment retention rates of methamphetamine users may reflect the cognitive impairments and mental health issues such as depression and anxiety that may arise and persist during recovery. Women often cite "to help with depression," as one of the reasons that they initiate methamphetamine use. If these issues are addressed in a comprehensive treatment program, relapse and retention rates may improve.

Child welfare workers should be familiar with the treatment options available in their communities. Because a high percentage of those who enter treatment experience relapse, case plans need to include a contingency plan to cover the possibility of relapse. The case plan should specify an individual the child can stay with to remain safe.

## **8. Summary**

As child welfare workers encounter children affected by their parents' use of methamphetamine, they need accurate information about the drug, its effects on parents, the potential dangers to children, the efficacy of treatment, and the possibility of recovery for the parent.

Methamphetamine is a dangerous drug that can lead to severe problems for users and puts their children at risk. However, research indicates that the physiological damage created by methamphetamine use is reversible with long-term abstinence. Research also shows that treatment models that work for addiction to other substances are also effective for methamphetamine addiction. Treatment outcomes for methamphetamine users appear to be similar to those for users of other drugs. Successful treatment for the parent may lead to family reunification and resultant benefit to both the child and the parent.

In dealing with the children of methamphetamine-using parents, child welfare workers must be alert to the immediate and long-term symptoms of exposure to the drug itself and the chemicals used in its manufacture. They must also be aware of the potential dangers to children in a methamphetamine manufacturing situation. They need to understand the danger they themselves face in visiting a location where methamphetamine may be produced. See Appendix 3 for additional resources related to methamphetamine prevention and treatment.

Child welfare workers must take into consideration the cognitive impairments that result from prolonged use. Residual impairments may be apparent for a year or more after

treatment begins. A parent who appears unwilling to meet case plan requirements may in fact be unable to meet the requirements without additional support.

The issue of prenatal exposure requires attention as well. Early intervention, effective treatment, and supportive follow-up are the keys to ensuring that a healthy baby is born to a healthy mother.

Methamphetamine-using parents may have needs beyond treatment for addiction, such as needs for mental health services, medical services, housing, and employment. Their children may have needs beyond safety from immediate harm. The most effective approach to the problem of methamphetamine-using parents and their at-risk children is a comprehensive integrated services strategy, where treatment includes a range of services that support the parent in leaving addiction behind and stepping into the role of a positive, successful parent.

## Appendix 1

# Medical Protocols for Children Found at Methamphetamine Labs

### #1 FIELD MEDICAL ASSESSMENT PROTOCOL

The field medical assessment is done to determine whether children discovered at the scene of a methamphetamine laboratory discovery are in need of **emergency medical care**. Medically trained personnel (e.g. EMT or paramedic) must do the assessment. If no medical personnel are available on-site, the child must be seen at a medical facility. In either case, a medical assessment should be done for each child **within 2 hours** of discovering children at a methamphetamine lab site.

#### #1 STEPS

1. For child with obvious injury or illness, call 911 or other emergency number.
2. For all children who are not obviously critical, perform field medical assessment consisting of:
  3. Vital signs (temperature, blood pressure, pulse, respirations)
  4. Pediatric Triangle of Assessment (Airway, Breathing, Circulation)
  5. For life-threatening findings, seek immediate medical attention. (See Protocol #2) Transport to a facility capable of pediatric emergency response appropriate to findings.
  6. A child's personal possessions should always be left at lab scene to avoid possible chemical/drug contamination in other settings. It is necessary to remove a child's clothing, decontaminate the child in a minimally traumatic manner (such as warm water) and provide clean and appropriate attire prior to removing them from scene. (The child's clothing and belongings remain at the scene and are bagged as evidence.)
  7. If there are no pressing clinical findings, short-term shelter or other secure placement should be implemented by child welfare personnel.

### #2 IMMEDIATE CARE PROTOCOL

Problems requiring immediate care are those that cannot wait 24 hours to be treated at the baseline exam (discussed in Protocol #3). Immediate care must be provided as soon as possible after significant health problems are identified. Care should preferably be provided **within 2 hours, but not later than 4 hours** after the child is identified at a lab site. Immediate care may be provided in a hospital emergency room, or pediatric or urgent care facility depending on the severity/urgency of the problem and the time of day. If a field medical assessment was not completed (Protocol #1), children should be taken to an immediate care facility within 2 hours for the medical assessment.

#### #2 STEPS

1. Perform the field medical assessment (follow Protocol #1 if not already done in the field).
2. Administer tests and procedures as indicated by clinical findings. A urine specimen for toxicology screening should be collected from each child within 12 hours of identification because some chemicals/drugs are eliminated in a short time. Use appropriate chain of evidence procedures and request urine screen and confirmatory test results to be reported at *any detectable level*.
3. Call Poison Control if clinically indicated (800-222-1222).
4. Follow baseline assessment (see Protocol #3) if appropriate to medical site and time permitting or schedule baseline assessment exam to be completed within 24 hours of lab discovery.
5. Secure the release of the child's medical records to all involved agencies to ensure ongoing continuity of care.
6. Child welfare personnel should evaluate placement options and implement short-term shelter for the child in which they will be closely observed for possible developing symptoms.

### #3 BASELINE ASSESSMENT PROTOCOL

The baseline assessment exam needs to be done **within 24 hours** of a lab discovery to ascertain a child's general health status. Prompt medical assessment is warranted due to the risk of toxicologic, neurologic, respiratory, dermatologic, or other adverse affects of methamphetamine lab chemical and/or stimulant or other drug exposure, and the high risk of neglect/abuse.

#### #3 STEPS

1. Obtain child's medical history by calling parents directly for the information, or, if impossible, seek information from social workers who have taken the medical history or from the child's past medical record.
  2. Perform complete pediatric physical exam to include as much of the Early Periodic Screening, Detection, and Treatment (EPSDT) exam as possible. Pay particular attention to:
    - a. Neurologic screen
    - b. Respiratory status
  3. Call Poison Control if clinically indicated (800-222-1222).
  4. Required Medical Evaluations
    - a. Temperature (otic, rectal, or oral)
    - b. Oxygen saturation levels
    - c. Liver function tests: AST, ALT, Total Bilirubin and Alkaline Phosphatase.
    - d. Kidney function tests: BUN and Creatinine
    - e. Electrolytes: Sodium, Potassium, Chloride, and Bicarbonate
    - f. Complete Blood Count (CBC)
    - g. Chest x-ray (AP and lateral)
    - h. Urinalysis and urine dipstick for blood  
If not done earlier, a urine specimen should be collected. This should be done **within 12 hours** of identification of the child because some chemicals/drugs are eliminated in a short time. Urine screen and confirmatory results should be reported at **any detectable level**.
- Optional Clinical Evaluations
- i. Complete metabolic panel (Chem 20 or equivalent)
  - j. Pulmonary function tests
  - k. CPK
  - l. Lead level (on whole blood)
  - m. Coagulation studies
  - n. Carboxyhemoglobin level
5. Refer for local (county department of social services/law enforcement) child abuse and neglect evaluation.
  6. Conduct a developmental screen. This is an initial age-appropriate screen, not a full-scale assessment; may need referral to a pediatric specialist.
  7. Provide a mental health screen on all children and crisis intervention services as clinically indicated. These services require a qualified pediatrician or mental health professional and may require a visit to a separate facility.
  8. Secure the release of child(ren)'s medical records to involved agencies including child welfare worker.
  9. *Note: Child welfare personnel may not have immediate legal access to certain health care records. Every effort should be made to facilitate transfer of medical records, by providing information about where, when, and to whom records should be transferred.*

9. For any positive findings, follow-up with appropriate care as necessary. **ALL** children must be provided long-term follow-up care (see Protocol #5) using specified schedule.
10. Long-term shelter and placement options should be evaluated and implemented by child welfare worker.

#### #4 INITIAL FOLLOW-UP CARE PROTOCOL

A visit for initial follow-up care occurs **within 30 days** of the baseline assessment to reevaluate comprehensive health status of the child, identify any latent symptoms, and ensure appropriate and timely follow-up of services as the child's care plan and placement are established. If possible, the visit should be scheduled late in the 30-day time frame for more valid developmental and mental health results.

#### #4 STEPS

1. Follow-up of any abnormal baseline test results.
2. Perform developmental examination (using instruments such as the Denver, Gesell, and Bayley) as indicated by the developmental screen in Protocol #3.
3. Conduct mental health history and evaluation (requires a qualified pediatric professional).
4. If abnormal findings on any of the above, schedule intervention and follow-up as appropriate to the findings; then proceed with long-term follow-up protocol (see Protocol #5). If no abnormal findings, schedule visits per long-term follow-up protocol (Protocol #5).
5. Adequacy of child's shelter/placement situation should be reviewed by child welfare worker and modified if necessary.

#### #5 LONG-TERM FOLLOW-UP CARE PROTOCOL

Long-term follow-up care is designed to 1) monitor physical, emotional, and developmental health, 2) identify possible late developing problems related to the methamphetamine environment, and 3) provide appropriate intervention. At minimum, **a pediatric visit is required 12 months** after the baseline assessment. Children considered to be Drug Endangered Children (DEC) cases should receive follow-up services a minimum of 18 months post identification.

For further information contact:  
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This protocol was modified slightly from the original DEC Protocol that was developed by the DEC Resource Center for the purpose of improving multi-agency response to children found in clandestine methamphetamine labs. The DEC Resource Center, The Children's Hospital and The Kempe Children's Center disclaim liability for outcomes from use of this protocol or misuse of the sequential steps herein.

#### #5 STEPS

##### *Required Components of Follow-Up Care*

1. Pediatric Care Visits. The visits should occur according to the American Academy of Pediatrics' schedule.
  - a. Follow-up of previously identified problems.
  - b. Perform comprehensive (EPSDT) physical exam and laboratory examination with particular attention to:
    - 1) Liver function (repeat panel at first follow-up only unless abnormal)
    - 2) Respiratory function (history of respiratory problems, asthma, recurrent pneumonia, check for clear breath sounds).
    - 3) Neurologic evaluation.
  - c. Perform full developmental screen.
  - d. Perform mental health evaluation (requires a qualified mental health professional, pediatrician, licensed therapist, child psychologist or licensed child mental health professional).
2. Plan follow-up and treatment or adjust existing treatment for any medical problems identified. Medical records should continue to accompany the child's course of care.
3. Adequacy of child's shelter/placement situation should be reviewed by child welfare worker and modified as necessary.
4. Plan follow-up strategies for developmental, mental health or placement problems identified.

##### *Optional Enhancements of Follow-up Care*

1. Conduct pediatric care visits including developmental screen and mental health evaluation at 6, 12, and 18 months post-baseline assessment.
2. Conduct home visits by pediatrically trained PHN or other nurse, at 3, 9, 15, and 18 months post-baseline assessment. Ensure that home visits occur between the pediatric clinic visits until the last visit at 18 months.

**IF YOUR COMMUNITY HAS ADDITIONAL SPECIFIC INSTRUCTIONS AND/OR LOCAL PHONE NUMBERS, AFFIX THE ATTACHED POUCH, INSERT INSTRUCTIONS AND PLACE IN THIS SPACE**

#### **Color Code of Agency Responsibility:**

**HA ZMAT/Law Enforcement/Fire**

**Emergency Medical Personnel**

**Social Services**

**Physicians**



## **Second Chance Kids**

### ***Providing Development Focused Care For Drug-Exposed Infants***

By Rizwan Z. Shah, M.D., FAAP

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It is generally assumed that pregnant women will provide a healthy environment for their unborn children and know how to avoid harmful consequences for the unborn. But this is not so when the compulsive need to remain high on addictive drugs of abuse, such as crack cocaine and other substances, supersedes the need to protect the welfare of unborn children.

Women who use drugs during pregnancy expose their unborn children to harmful effects of illicit drugs at the critical period of neurological development as well as physical growth. Scientific evidence regarding the impact of some drugs such as alcohol, heroine and crack cocaine are better understood than the impact of methamphetamine on infants exposed prenatally to these drugs.

During the 1980s epidemic of crack cocaine use, clinical observations documented a variety of possible abnormalities among infants of mothers who used crack cocaine during pregnancy. These initial observations paved the way for more concrete science-based research into the effect of crack cocaine on fetal development and the infant's outcome. Even though the earlier fears regarding possibility of "crack kids" leading a wasteful vegetative life have been allayed, concerns regarding subtle neurological problems are mounting as new technology helps researchers document brain function abnormalities with accuracy not possible in the 80s.

The ultimate goal of scientific research and service providers remains focused on providing the best possible options for drug-exposed infants to achieve better outcomes for developmental and academic functioning.

For pregnant women abusing cocaine or other drugs, early and regular prenatal care can provide protection against known complications of pregnancy such as premature birth, abruption of placenta, high blood pressure and fetal death. Both crack cocaine and methamphetamine are stimulants with the potential to cause blood vessel spasms resulting in compromising oxygen and blood supply to fetal brain and other organs vital for future functioning of the child. In fact, drug abuse at any stage of pregnancy can compromise infant outcome.

#### **EFFECTIVE CARE PLAN FOR DRUG-EXPOSED INFANTS:**

Treatment plans based upon systematic behavior observations of drug-exposed infants provide effective and developmentally appropriate intervention with successful outcome potential.

Age-related intervention plans can be organized in the following time spans of early life of drug-exposed infants:

#### **1) 0–6 Months: Problem areas to focus on are:**

Habituation Orientation: Soon after birth, infants need to develop skills to adjust stimulus input from their environment. For instance, infants learn to watch people's faces, react to light, darkness and sounds and learn to take interest in their surroundings. These skills are

established in the central nervous system based upon maturity and infant-receptor sites. Drug-exposed infants demonstrate poor orientation and habituations in responding to environmental stimuli. They either sleep too much or not enough, and they turn away from visual contact, disregarding objects in the surroundings.

Care Plan: By recognizing alert and passive cycles, the care giver can provide appropriate interactive input for necessary neuromotor development. Planning meal time for an infant who is born small for age and has poor suck coordination requires an organized approach to scheduled meal times, rather than waiting for the infant to ask for nourishment. Likewise, avoiding overstimulation for a child who is in down time is equally important.

Interaction Attachment: Providing opportunities for physical contact, visual regard and verbal interaction becomes an integral part of social development in early stages of life.

Response to Stress: A nonverbal child gives out many signals to indicate stress-generated anxiety. These symptoms range from changes in breathing, heart rate and temperature to stiffened arms and legs with obvious shaking; in the face of continued stress, the symptoms can escalate to inconsolable screaming and breath-holding with vomiting and turning blue.

To Minimize Stress: A care plan to deal with stress-related symptoms should include:

- Providing quiet, calm environment without noise or bright lights.
- Providing warmth and comfort by bundling the child in blankets.
- Encouraging habituation by providing sucking opportunity with pacifier.
- Initiating gentle rocking or soothing motions to help achieve neurobehavioral organization.

**2) 6 Months–2 Years:** Most drug-exposed children should achieve mastery of neurobehavioral organization by the end of 6 months. The age group 6 months to 18 months is typically called “honeymoon” period of development for drug-exposed infants where for all outside measures the child remains symptom-free. By the end of this period, speech and language development difficulties that require follow-up care can surface.

**3) 3 Years of Age and Older:** The potential for slight difficulty in focusing on tasks or in settling down in preschool years may get progressively worse with more demands on focused tasks in school years, and a child showing minor difficulty in controlling emotions may encounter significant social adjustment difficulties in later childhood. These problems get worse with high-risk social environment and unstable family units.

**SUMMARY** To summarize this complicated issue, a well-organized, developmentally oriented approach toward early recognition and intervention has the best chance to be a successful treatment outcome for drug-exposed children. Even though current research is reassuring regarding the “damaged goods” picture that earlier observations had painted, continued developmental surveillance is required to recognize minor difficulties early so that major problems are avoided later on in life. A team approach of health professionals, parents, early childhood educators and local support network is essential for achieving this goal.

**METHAMPHETAMINE AND ITS IMPACT ON WOMEN, CHILDREN AND FAMILIES:  
INVENTORY OF SELECT RESOURCES**

This document is intended to identify some of the major resources related to methamphetamine prevention and treatment. The listing of resources is organized in 11 major topic areas as follows:

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This document can be found at <http://www.ncsacw.samhsa.gov>

## 1. National and State Drug Endangered Children (DEC) Materials and Protocols

- *Drugs and Society: The True Cost to YOU! Drug Endangered Children* (September 2004). The goal of this broadcast is to educate the public about the problem of methamphetamine and its effects on children, provide solutions, and present ways that coalitions can become more involved in protecting children and reducing the tragic human costs associated with drug abuse. The discussion features Deborah Augustine, Victim Witness Program Manager, Drug Enforcement Administration; Ron Mullins, Coordinator, National Drug Endangered Children Alliance; and John Martyny, Associate Professor, Division of Environmental and Occupational Health Sciences, National Jewish Medical & Research Center.  
<http://www.health.org/multimedia/mediaDetails.aspx?ID=269>
- *Arizona Drug Endangered Children (DEC) Multidisciplinary/Integrated Protocol* (September 30, 2003). [http://www.ag.state.az.us/DEC/DEC\\_protocol.pdf](http://www.ag.state.az.us/DEC/DEC_protocol.pdf)
- *National Protocol for Medical Evaluation of Children Found in Methamphetamine Labs* (prepared by the National Alliance for Drug Endangered Children).  
<http://www.colodec.org/decpapers/Documents/DECNationalProtocol.pdf>
- *Medical Protocols for Children Found at Meth Lab Sites* (prepared by the California DEC Resource Center, June 1999).  
<http://www.doh.wa.gov/ehp/ts/CDL/CA%20DEC%20Medical%20Protocol.pdf>
- *Protocol for Investigating Child Protection Referrals Involving the Operation of Clandestine Labs* (prepared by Larimer County, Colorado).  
<http://www.colodec.org/decpapers/LarimerCoProtocol.htm>
- *Minnesota Medical Protocols for Children Found at Methamphetamine Lab Sites* (September 2003).  
<http://www.health.state.mn.us/divs/eh/meth/training/protocolsum.pdf>
- *The Nebraska CHEM-L Protocol* (version 4, January 2004). This protocol was developed by a Medical Working Group as part of the Midwest High Intensity Drug Trafficking Area (HIDTA) Program. <http://ccfl.unl.edu/projects/cprojects/chem-l/>
- *Drug Endangered Children Protocol for Tacoma-Pierce County* (Washington State)  
<http://www.doh.wa.gov/ehp/ts/CDL/decpierce.pdf>
- *Stevens County Sheriff's Office Meth Site Child Response Protocol* (Washington State) <http://www.doh.wa.gov/ehp/ts/CDL/decstevens.pdf>
- *Drug Endangered Children – Initial Response Forms*. Contains a set of 8 forms that include: 1) Review of hazards to children in a clandestine lab environment, 2) Chemicals of a clandestine drug lab – rooms where found, 3) Clandestine drug lab chemicals, 4) Order of protection C.R.S. 19-3-405/Protective hold C.R.S. 19-3-401, 5) Medical information form, 6) Medication form, 7) Methamphetamine lab medical charting form, and 8) Medical protocols for children found at meth lab sites. Though compiled for Colorado, other states may find these useful or want to modify them for their efforts.  
<http://www.colodec.org/decpapers/Documents/DECBestPracticesInitialResponseForms.pdf>

- *Memorandum of Understanding*. This MOU between the Larimer County Department of Human Services and the Larimer County Drug Task Force to assist in the identification, investigation and the removal of Drug Endangered Children from hazardous drugs usage and manufacturing locations found within the Larimer County Law Enforcement jurisdictions.  
<http://www.colodec.org/decpapers/LarimerCoMemo.htm>
- *Clandestine Methamphetamine Labs FAQ #1* (prepared by Dr. Kathryn Wells, Medical Director, Denver Family Crisis Center).  
<http://www.colodec.org/decpapers/clandestinelabfaq1.htm>
- *Medical Evaluation of Children Removed from Clandestine Labs FAQ #2* (prepared by Dr. Kathryn Wells, Medical Director, Denver Family Crisis Center).  
<http://www.colodec.org/decpapers/childmedevalfaq2.htm>
- *How to Care for Children Removed from a Drug Endangered Environment FAQ #3* (prepared by Dr. Kathryn Wells, Medical Director, Denver Family Crisis Center).  
<http://www.colodec.org/decpapers/careforchildrenfaq3.htm>
- *Medical Concerns Regarding Clandestine Labs*. (prepared by Dr. Kathryn Wells, Medical Director, Denver Family Crisis Center).  
<http://www.colodec.org/decpapers/medcncrnsclandestinelabs.htm>
- *Tennessee’s Child Protective Services Investigation of Children Exposed to Chemical Laboratories for the Manufacture of Methamphetamine*. This sets forth the policies and procedures for all Tennessee Department of Children’s Services CPS employees. It was originally issued in 2001 and revised in 2002.  
<http://www.state.tn.us/youth/policies/Chapter%2014%20Child%20Protective%20Services/14-28%20CPS%20Investigation%20of%20Children%20Exposed%20to%20Chemical%20Labs-.pdf>
- *Tennessee Department of Children’s Service Resource Data on Methamphetamine*. The Department of Children’s Services put this together this resource document from information from the DEA, NIDA, the Tennessee National Guard and the Koch Crime Institute. It includes suggested protocol for assessing medical needs of children found at methamphetamine labs.  
<http://www.state.tn.us/youth/policies/Chapter%2014%20Child%20Protective%20Services/Resource%20Data%20on%20Methamphetamines.pdf>

## 2. Other Meth-Related Protocols and Resources

- *Recommendation of Work Practices to Maintain Officer Safety*. These recommendations are based on draft guidelines developed by the California Department of Justice Bureau of Narcotics Enforcement.  
[http://www.publichealth.arizona.edu/divisions/envirocom/officer/phase\\_iii\\_final-officer\\_safety.doc](http://www.publichealth.arizona.edu/divisions/envirocom/officer/phase_iii_final-officer_safety.doc)
- *Second Chance Kids: Providing Development Focused Care for Drug-Exposed Infants* (2000). This document discusses the development of treatment plans for drug-exposed infants that provide effective and developmentally appropriate interventions with successful outcome potential. Prepared by Rizwan Z. Shah, M.D., Medical

Director, Child Abuse Program, Blank Children's Hospital, Des Moines, IA  
[http://www.addictionrecov.org/paradigm/P\\_PR\\_SP00/cont\\_shah.htm](http://www.addictionrecov.org/paradigm/P_PR_SP00/cont_shah.htm)

- *Project Strengthening Supervision: A Training Program for Child Welfare Supervisors. Signs of Client Methamphetamine Use and Caseworker Safety Procedures* (2001). This training program, which was provided through Illinois State University, School of Social Work, provided participants with the knowledge and skills necessary to maintain their safety and well-being when working with methamphetamine-involved clients. An outline of the training is available at <http://www.drugfreeinfo.org/PDFs/strengthensupervision.PDF>. The Illinois Department of Children and Family Services is currently considering adopting this particular module as part of its training package. For more information, please contact J. Randall Webber, M.P.H., Director of Training and Publications, Lighthouse Institute at Chestnut Health Systems, 309.820.3543 x8-3411, [Rwebber@chestnut.org](mailto:Rwebber@chestnut.org)
  - *Meth: A Reference Guide for Illinois Law Enforcement and Courts* (2004). This guide was authored by a multidisciplinary group of law enforcement officers, State's attorneys and prosecutors, and judges. The Reference Guide contains information on topics such as the methamphetamine problem in Illinois; indicators and hazards of making methamphetamine; law enforcement investigation; methamphetamine abuse and treatment; protection of children exposed to methamphetamine labs; methamphetamine charges and litigation; and Illinois case law. The guide and accompanying materials are expected to be available online and in CD format soon. For more information, please visit <http://cspl.uis.edu/ILAPS/TrainingPrograms/MethProtocol/>
  - *Reconnecting Youth – Methamphetamine Component*. With funding from SAMHSA/CSAP and the Department of Education, Iowa has developed a methamphetamine component to be added to the Reconnecting Youth curriculum. For more information, please contact Janet Zwick, Deputy Director, Iowa Department of Public Health, 515-281-4417; or Robin Heinemann (curriculum developer and trainer), Dr. Jerry Stubben (co-principal investigator) or Dr. Cathy Hockaday (co-principal investigator) at Iowa State University, Institute of Social and Behavioral Research, 515-294-4518.
3. Substance Abuse and Mental Health Services Administration (SAMHSA) Publications and Resources
- *The DASIS Report: Trends in Methamphetamine / Amphetamine Admissions to Treatment, 1993-2003* (2006). This report discusses rates, demographics and geographic distribution for methamphetamine treatment admissions for the period 1993 to 2003. <http://www.oas.samhsa.gov/2k6/methTX/methTX.cfm>
  - *METH: What's Cooking in Your Neighborhood? (Myths, Facts, and Illicit Drugs: What You Should Know Series)* (2001). This 30-minute video explains myths and facts surrounding methamphetamine. Viewers will learn about its many physical, psychological, and economic consequences for individuals, families, and communities. It includes highlights from "Meth: What's Cooking in Your Neighborhood?," one in a series of national 90-minute drug-specific teleconferences sponsored by the Office of National Drug Control Policy, SAMHSA, NIDA, the National Guard Counterdrug Office, and the Community Anti-Drug Coalitions of America. <http://store.health.org/catalog/productDetails.aspx?ProductID=16038>

- *Treatment for Stimulant Use Disorders: TIP 33* (1999). This Treatment Improvement Protocol (TIP) supplies substance use disorder treatment providers with vital information on the effects of stimulant abuse and dependence, discusses the relevance of these effects to treating stimulant users, describes treatment approaches that are appropriate and effective for treating these clients, and makes specific recommendations on the practical application of these treatment strategies. The treatment strategies that are described in this TIP have been scientifically validated as effective in treating people with stimulant use disorders. These strategies address the specific problems and needs that are inherent to chronic stimulant users. <http://www.health.org/govpubs/bkd289/>
- *Methamphetamines: A Guide for Parents and Other Caregivers* (1999). This CSAP Substance Abuse Resource Guide provides information on methamphetamine categorized in three areas: prevention materials, studies, articles and reports, and national organizations for substance abuse prevention.
- The Methamphetamine Treatment Project (MTP) is a multi-site initiative funded by SAMHSA/CSAT to study the treatment of methamphetamine dependence. Jointly implemented by the UCLA Integrated Substance Abuse Programs (ISAP), and the Matrix Institute on Addictions, its goal is to generate knowledge regarding how the Matrix comprehensive treatment protocol can be effectively transferred to the community drug treatment system. The web site (<http://www.methamphetamine.org>) provides information about the project, results when they become available, as well as general information on methamphetamine abuse and treatment and links to other useful sites. In addition, the April-June 2000 issue of the *Journal of Psychoactive Drugs* describes the efforts and progress of the MTP and includes more than a dozen articles on various aspects of the project.
- *Methamphetamine 101*. This video created by the Addiction Technology Transfer Center (ATTC) provides information about the etiology and physiology of an epidemic. This video is designed to provide an overview of the medical, psychological, and societal effects of methamphetamine abuse and dependence, and is intended to be used in conjunction with the second module addressing methamphetamine treatment. <http://www.abhp.arizona.edu/Training/Store/index.aspx#Meth101>
- *Methamphetamine 102*. This second video by the ATTC provides information about evidence-based treatment and addresses foundations for a clinical approach to methamphetamine treatment with emphasis on the Matrix Model, an evidence-based treatment protocol that has withstood the rigors of clinical trial research. <http://www.abhp.arizona.edu/Training/Store/index.aspx#Meth102>

#### 4. National Institute on Drug Abuse (NIDA) Publications

- *A Community Reinforcement Plus Vouchers Approach: Treating Cocaine Addiction. Therapy Manuals for Drug Addiction* (1998). This manual has been empirically tested with stimulant-using populations. Although the materials have been developed and tested with cocaine and crack users, evidence to suggest that cocaine and methamphetamine users respond quite similarly to behavioral and cognitive-behavioral strategies. <http://www.nida.nih.gov/TXManuals/CRA/CRA1.html>

- *NIDA Community Drug Alert Bulletin – Methamphetamine* (1998). This bulletin provides a condensed version of some of the latest scientific information on methamphetamine. <http://www.drugabuse.gov/MethAlert/MethAlert.html>
- *Methamphetamine Abuse and Addiction: NIDA Research Report Series* (Printed April 1998, reprinted January 2002). NIDA's Research Reports simplify the science of research findings for the educated lay public, legislators, educational groups, and practitioners. The series is updated periodically to reflect current knowledge on drugs of national interest. <http://www.drugabuse.gov/ResearchReports/methamph/methamph.html>
- *Mind Over Matter* (1998). This NIDA series is designed to encourage young people in grades five through nine to learn about the effects of drug abuse on the body and the brain. There is a section specifically on methamphetamine. <http://www.drugabuse.gov/MOM/MOMIndex.html>

## 5. Other Major Reports and Publications

### **Federal/National Reports**

- *Methamphetamine and Other Substance Use During Pregnancy: Preliminary Estimates From the Infant Development, Environment, and Lifestyle (IDEAL) Study* (2006). This article highlights preliminary estimates from a longitudinal study, supported by a grant from the National Institute on Drug Abuse. The purpose of the study is to estimate the prevalence and correlates of alcohol, tobacco, and other substance use during pregnancy, including methamphetamine. This is the first large-scale investigation to report the prevalence of methamphetamine use during pregnancy in areas of the United States where methamphetamine is a notable concern. Follow-up research is ongoing to investigate the outcomes associated with prenatal methamphetamine exposure. [http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list\\_uids=16395620](http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&dopt=Citation&list_uids=16395620)
- *Methamphetamine Interagency Task Force Final Report 2000* (2000). This report lays out guiding principles, needs and recommendations, and research priorities to inform future prevention and education, treatment, and law enforcement efforts. It also identifies a number of themes to inform future efforts to implement a national strategy to address methamphetamine. <http://www.ncjrs.org/pdffiles1/nij/180155.pdf>
- *Methamphetamine – Drug Facts* (2005). This ONDCP fact sheet provides an overview on methamphetamine, the extent of use, health effects, treatment, arrests and sentencing, production and trafficking, and legislation, as well as links to other sources. <http://www.whitehousedrugpolicy.gov/drugfact/methamphetamine/index.html>
- *Children at Clandestine Methamphetamine Labs: Helping Meth's Youngest Victims*. (June 2003). This Office for Victims of Crime (OVC) Bulletin provides an overview of methamphetamine production and trends and discusses the dangers to children living in methamphetamine labs. It also outlines recommendations for a multidisciplinary team approach to meet the needs of children found at clandestine labs, and highlights some promising practices in the field. <http://www.ojp.usdoj.gov/ovc/publications/bulletins/children>



- *The Methamphetamine Problem: A Question and Answer Guide* (n.d.) This guide, prepared by the Institute for Intergovernmental Research, addresses a wide range of questions on methamphetamine including how meth is made, its effects, treatment, and strategies to combat the problem. <http://www.iir.com/centf/guide.htm>

### **State/Local Reports**

- *The Governor's Task Force on Methamphetamine Abuse: Final Report* (September 1, 2004). This report provides recommendations from the Governor's Task Force on Methamphetamine that are intended to serve as the basis for a comprehensive strategy to address the methamphetamine epidemic in Tennessee. The recommendations are categorized under seven fundamental "cornerstones," including increased funding for methamphetamine treatment with an eye toward long-term initiatives and committing resources to help children harmed by methamphetamine manufacturing and abuse. [http://kci.org/meth\\_info/methreport.pdf](http://kci.org/meth_info/methreport.pdf)
- *Final Report of the Joint House-Senate Task Force on Ice and Drug Abatement* (January 2004). This report, prepared by a Hawaii legislative task force studying methamphetamine use in the state, includes a package of legislative proposals geared more toward education, prevention and treatment rather than increased law enforcement strategies. Spending priorities for the \$21.6 million dollar set of programs include: \$10.7 million for adult drug treatment, \$4.5 million for teen intervention and drug treatment, \$3.5 million for drug abuse prevention for families, schools, and youth programs, \$1.2 million for expanded drug court programs, \$850,000 to fund the state's "treatment not jail" program for first-time, nonviolent drug offenders, and \$300,000 to study the impact of ice labs on Hawaii's environment, particularly groundwater supplies. [http://www.capitol.hawaii.gov/sessioncurrent/lists/ice\\_finalrpt.pdf](http://www.capitol.hawaii.gov/sessioncurrent/lists/ice_finalrpt.pdf)
- *Narratives from County Survey on Methamphetamine Impact on Social Service Delivery in North Dakota* (2003). The North Dakota Division of Children and Family Services surveyed the county social services offices on August 22, 2003, with three questions assessing the role methamphetamine use, manufacture or selling has in the placement of children in foster care, as well as other kinds of consequences within the child welfare system. At the time of the survey, there were 865 children in care through either county social services or the Division of Juvenile services. The response rate to the survey was 88% (758 responses). The survey found that methamphetamine use has had a significant impact on the child welfare system, not only in the numbers of children placed in foster care, but also in the number of reports of child abuse and neglect that the county offices are assessing and the complexity of the issues surrounding the children who are being served. This document contains some of the open-ended comments received. <http://www.state.nd.us/humanservices/info/testimony/2003/gov-services/030917b.html>
- *Methamphetamine in Illinois: Examination of an Emerging Drug* (2003). Research Bulletin. 1:2. This bulletin demonstrates how key indicators can be used to measure, monitor and evaluate the extent and nature of meth abuse in Illinois. Published by the Illinois Criminal Justice Information Authority. <http://www.icjia.state.il.us/public/pdf/bulletins/meth.pdf>

- *Responding to Methamphetamine: Washington State's Promising Example* (2002). This report documents the process and initial results of Washington State's methamphetamine initiative, which brought together law enforcement, criminal justice, health, treatment, education, child and family services, environmental protection, government, and youth to discuss action steps and strategies to address the meth problem. <http://www.ncpc.org/cms/cms-upload/ncpc/files/RespondtoMeth.pdf>
- *Wyoming's Methamphetamine Initiative: The Power of Informed Process* (2001), <http://www.ncjrs.org/pdffiles1/bja/186266.pdf> and *Wyoming Methamphetamine Treatment Initiative* (2002), <http://www.ncjrs.org/pdffiles1/nij/grants/194103.pdf> discuss Wyoming's initiative.
- *Meth Matters: Report on Methamphetamine Users in Five Western Cities* (1999). This study, supported by the National Institute of Justice (NIJ) and conducted by the Criminal Justice Research Division of the San Diego Association of Governments (SANDAG), documented methamphetamine use and its consequences among arrestees in Los Angeles, Phoenix, Portland, San Diego and San Jose. The study used data from the Arrestee Drug Abuse Monitoring (ADAM) program. <http://www.ncjrs.org/pdffiles1/176331.pdf>.

## 6. Federal Methamphetamine Conferences

- In September 2000, SAMHSA/CSAT convened a methamphetamine conference, *Meeting the Challenge: Treatment, Prevention, and Research*. This two-day conference brought together stakeholders from the treatment, child welfare, law enforcement, research, policymaking and other arenas to discuss a broad range of methamphetamine-related issues. The agenda is available at <http://www.methamphetamine.org/docs/AttachmentAConferenceAgenda.doc> and the conference summary is available at <http://www.methamphetamine.org/docs/SummarywithAttachmentD.doc>
- In 1997, ONDCP convened *The National Methamphetamine Drug Conference* in Omaha, Nebraska. This three-day conference brought together experts from the fields of law enforcement, prevention, and treatment at federal, state and local levels, as well as business and public interest groups from across the country. More than 375 attendees from 35 States and territories participated. A summary of the conference and proceedings from the plenary, panel and workshop presentations are available at <http://www.ncjrs.org/ondcppubs/publications/drugfact/methconf/contents.html>

## 7. The Methamphetamine Clearinghouse

- The Methamphetamine Clearinghouse (<http://www.ncpc.org/ncpc/ncpc/?pg=5882-2006-11324-9654>) was developed by the National Crime Prevention Council (NCPC) to provide a forum for the dissemination of effective practices related to reducing the production, distribution, and use of methamphetamine. Particular attention is paid to the areas of law enforcement, courts, drug endangered children, treatment, prevention, public awareness, and clan lab clean-up. The database will house best practices, emerging strategies, training curricula, legislation, city ordinances, protocols, strategic plans, interagency initiatives, individual agency initiatives, and examples, information, or other materials.

## 8. Clandestine Labs and High Intensity Drug Trafficking Areas

- *Developing a Strategy for Multiagency Response to Clandestine Drug Laboratories* (written 1993; reprinted 2000). This BJA monograph identifies and discusses eight essential components of a successful CLEP; outlines a 5-stage strategic planning process to developing and implementing a CLEP; provides worksheets to assist policymakers and program planners with the strategic planning process; and includes models of forms and procedures that State and local agencies can use to develop their own CLEP. <http://www.ncjrs.org/pdffiles/clan.pdf>
- *Clandestine Drug Labs. Problem-Oriented Guides for Police, Series No. 16.* (2002). This guide, published by the Department of Justice's Office of Community Oriented Policing Services (COPS), provides information for police on prevention and how to improve overall response to incidents involving clandestine drug labs. <http://www.cops.usdoj.gov/mime/open.pdf?Item=274>.
- *Design for a HIDTA/OCDETF Performance Monitoring and Management System: Technical Report* (January 2003). Washington, DC: Office of National Drug Control Policy. [http://www.whitehousedrugpolicy.gov/pdf/hidta\\_ocdetf.pdf](http://www.whitehousedrugpolicy.gov/pdf/hidta_ocdetf.pdf)

## 9. Methamphetamine Trainings

- *California Addiction and Training Education Series (CATES)*. The CATES is a series of one-day trainings designed to provide in-depth information to individuals working with substance using populations. With support from Pacific Southwest ATTC, UCLA Integrated Substance Abuse Programs (ISAP), and others, CATES is holding a series of three methamphetamine conferences across California. The first was March 30, 2004 in Pasadena; the second was June 11 in San Francisco and the third was August 20 in Sacramento. Workshop PowerPoints from the first training are available at <http://www.psattc.org/events/cates/I/presentations/index.html>.
- *New England ATTC Training*. Beginning in August of 2004, the New England ATTC offered a four-week, credited, online course entitled, "Speed Still Kills: The Growing Methamphetamine Problem." This presentation consists of an overview of methamphetamine; its history; patterns of use (including various forms and methods of injection, and geographical patterns of use); physical and psychological effects; comparison of methamphetamine and cocaine related problems; and a discussion of the treatment issues critical for successful methamphetamine dependence treatment. <http://www.attc-ne.org/education/index.html>.
- *Community Policing for America's Future: National Community Policing Conference* (June 21-23, 2004). This DOJ conference featured workshops grouped into seven subject tracks: Homeland Security, Integrity, Effective Technology, School and Campus Policing, Problem-Solving Strategies, Partnerships, and Contemporary Issues in Community Policing. The workshops in each track addressed critical law enforcement and community issues and emphasized the importance of collaboration between police and citizens. Laura Birkmeyer and Ron Mullins were speakers at this conference. <http://www.cops.usdoj.gov/mime/open.pdf?Item=1270>
- *Inaugural Drug Endangered Children National Conference* (June 29-30, 2004). The National Alliance for Drug Endangered Children held their inaugural "Drug Endangered Children National Conference" in Denver, Colorado. Speakers included Laura Birkmeyer, Assistant U.S. Attorney; Ron Mullins, DEC National Training

Coordinator; and Sue Webber-Brown, Butte Interagency Narcotic Task Force. Resources are available through their website. <http://colodec.org>

- *17th Annual National Prevention Network Prevention Research Conference* (August 22-25, 2004). This annual conference, sponsored by the Southwest Prevention Center at the University of Oklahoma, featured two workshops on methamphetamine. The "Prevention of Methamphetamine Use" workshop highlighted prevention efforts in three different states: Kansas, Michigan, and Washington. The "Crank it Up! Successful Strategies for Addressing Meth in Your Community" workshop discussed the Kansas Methamphetamine Prevention Project.
- *Idaho's Second Annual Drug Endangered Children Conference* (September 14-16, 2004). This conference offered information to professionals from a variety of fields; each with roles in drug endangered children issues. The presentations covered current information on topics relating to medical testing, chemical exposure, child victimization, parental accountability, drug courts, fostering drug endangered children, and a wide array of other educational topics. Presentations from this and the first conference (July 8-10, 2003 in Boise) are available on the web. [http://www.isp.state.id.us/DEC\\_Conference/](http://www.isp.state.id.us/DEC_Conference/)
- *Southern Illinois Meth Awareness Conference* (October 18-19, 2004). This two-day seminar, hosted by the John A. Logan College Center for Business and Industry, brought local agencies together to tackle the methamphetamine epidemic that southern Illinois is experiencing. Experts in the fields of law enforcement, medical, child and family, environmental, and treatment informed southern Illinois professionals on procedures and protocols needed to respond to the meth problem. [http://www.jal.cc.il.us/bus\\_ind/methconf.html](http://www.jal.cc.il.us/bus_ind/methconf.html)
- *National Methamphetamine Legislative and Policy Conference* (October 25-27, 2004). This conference, offered by the National Alliance for Model State Drug Laws (NAMSDL), focuses on legislative and policy options toward creating effective, comprehensive, and coordinated responses to issues such as protecting children found at methamphetamine labs, protecting families affected by addiction, controlling precursor chemicals used to produce meth, and environmental clean-up and liability. For more information, please contact Amy Powell, Deputy Director of NAMSDL, at 703.836.6100 x18 or [amypowell@natlalliance.org](mailto:amypowell@natlalliance.org)
- *Western Conference on Addictions: Best Practices in Treatment and Community Interventions* (November 11-14, 2004). This conference features top researchers and therapists in the substance abuse field. Richard Rawson, Ph.D., from UCLA Integrated Substance Abuse Programs (ISAP), is a featured plenary speaker and presents on the "Latest Research on Methamphetamine Abuse and Treatment." For more information, go to <http://www.psattc.org/events/11-11-04.html>

#### 10. UCLA Integrated Substance Abuse Programs (ISAP)

UCLA ISAP coordinates substance abuse research and treatment under authority of the UCLA Neuropsychiatric Institute & Hospital (NPI&H). NPI&H is a division of the UCLA Department of Psychiatry and Biobehavioral Sciences, housed within the David Geffen School of Medicine at UCLA. The integrated components of ISAP include four organizations: Pacific Node of the NIDA Center for Clinical Trials Network, Matrix Institute on Addictions, UCLA Addictions Studies Neurobiology Unit, and UCLA Substance Abuse Service Inpatient Unit.

Much of ISAP's work has focused on methamphetamine and the ISAP website (<http://www.uclaisap.org/>) includes a number of PowerPoint presentations, findings and abstracts from their efforts. Two ISAP projects of note are the *CSAT Methamphetamine Treatment Project (MTP)* discussed above (see ##) and *The Methamphetamine Abuse Treatment - Special Studies (MAT-SS)*, a collection of three separate research studies – the Multiyear Follow-up Study, Treatment Adherence Study, and the Cost Analysis Study – that build on the MTP.

#### 11. Videos from Washington State's Alcohol and Drug Clearinghouse

The following videos are available through Washington State's Alcohol and Drug Clearinghouse ([http://clearinghouse.adhl.org/video/A-Z\\_html/M.html](http://clearinghouse.adhl.org/video/A-Z_html/M.html))

*Methamphetamine Addiction Treatment Forum-Part 1: "Myths and Facts About Meth Addiction"* (2001). Methamphetamine Forum focusing on the treatment of methamphetamine addiction, held in Tacoma, WA on December 7, 2001.

*Methamphetamine Addiction Treatment Forum-Part 2 "Dealing with the Issue"* (2001). Methamphetamine Forum focusing on the treatment of methamphetamine addiction, held in Tacoma, WA on December 7, 2001.

*Methamphetamine: The Crystal Cage* (1998) Designed for teens, this video extensively interviews five former users as a means of exploring the cycle of addiction and learning first-hand the risks involved in methamphetamine use and addiction.

*Methamphetamine: The Rush to Crash* (1997). Educates the viewer to the dangers of methamphetamine use through slick computer graphics and personal testimonies.

*Meth: A Snap Shot of an Ugly Drug* (1997). The Drug Enforcement Administration explores the creation and increased usage of meth.

*The East Coast Meth-Challenge* (1997). A teleconference that discusses the increase of meth and what is being done to try to stop the epidemic and educate individuals on the harmful effects of meth.

*The West Coast Meth-Challenge* (1997). A teleconference hosted by Barry R. McCaffrey, Director Office of National Drug Control Policy, and moderated by Tim Koppel.

*The Meth Effect* (1997). Illustrates how methamphetamines affect the brain and other body systems. Also discussed are the meth high, withdrawal, relapse, and recovery.

*Meth Madness Town Hall Meeting-Public Forum on Meth's Potential Deadly Effects* (2001). A public forum with 13 speakers discussing methamphetamines, held in Yakima, WA on October 23, 2001.

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## Endnotes

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