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Parental Methamphetamine Use and Manufacture: Child and Familial Outcomes

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Abstract

The children of methamphetamine (MA) users and manufacturers are at high risk of neglect and abuse and physical harm from exposure to the drug and the chemicals used to produce it. This study is the first to document the epidemiology of children removed from home-based MA labs and their familial outcomes. Analyses are predominantly descriptive for 99 cases of drug-endangered children recorded from 2001–2003 in Los Angeles County. Neglect was substantiated in 93% of the cases; 97% of the cases resulted in child protective services detainment. Eighty percent had a documented medical diagnosis, most often related to exposure to MA manufacture.

Keywords

drug-endangered children; child abuse and neglect; methamphetamine use; and manufacture

Introduction

Methamphetamine (MA) currently ranks as the most widely used illicit drug in the world after cannabis (United Nations Office on Drugs and Crime [UNODC], 2009). The UNODC estimates that between 15 and 51 million people worldwide use MA or other amphetamines. In comparison, cocaine and opiates are each used by approximately 15 to 20 million people worldwide. Methamphetamine is a highly addictive psychoactive stimulant that produces an intensely euphoric high, followed by a “crash” that causes depression, irritability, insomnia, nervousness, and paranoid aggressive behaviors (Office of National Drug Control Policy, 2010)—all of which present a risk of serious neglect and abuse to the children of MA-dependent parents.

National Drug Intelligence Center (2009) data further indicate an increase in domestic MA clandestine laboratory seizures in 2008, after they had been steadily declining since 2003. Methamphetamine-producing small toxic labs (STLs) are usually found in home environments where children can be present. Possibly as a result of the increased awareness of STLs, there was a parallel increase in the reported number of children injured or affected by MA labs across the country in 2008 (El Paso Intelligence Center [EPIC] National Clandestine Laboratory Seizure System, 2008). Children living in settings of MA labs are at extremely high risk of a wide range of serious negative consequences including poisoning, homicides, and accidental deaths and burns due to home-based MA lab fires and explosions (Messina, Marinelli-Casey, West, & Rawson, 2007).

The total impact of the MA epidemic on communities and families is not fully known, but the effects on many have been severe. To date, research indicates that chronic MA use can lead to unemployment, homelessness, arrest and incarceration, serious physical and mental health problems, and child welfare involvement or termination of parental rights (Gonzales, Marinelli-Casey, Shoptaw, Ang, & Rawson, 2006; Johnson & Waldfogel, 2002; Messina, Marinelli-Casey, Hillhouse, Ang, Hunter, & Rawson, 2008). Children removed from home-based MA labs are a major concern among child welfare professionals, as they have not only been exposed to their parents' chaotic and drug-focused lifestyles, but also to the psychoactive stimulant itself and the toxic precursor chemicals associated with MA manufacture (Anglin, Burke, Perrochet, Stamper, & Dawad-Noursi, 2000; Messina et al., 2007; Haight, Ostler, Black, Sheridan, & Kingery, 2007). Psychoactive compounds can cause psychosis, seizures, and death from accidental ingestion (National Institute on Drug Abuse [NIDA], 1998; Perez, Arsura, & Strategos, 1999). Consequences of exposure to the toxic precursor chemicals can include poisoning, burns, and lung irritation; damage to the liver, kidneys, heart, brain, and immune system; cancers; bone marrow suppression; and developmental and growth problems (Drug Endangered Children [DEC], 2000; Grant, Bell, Stewart, Paulson, & Rogers, 2010; Irvine & Chin, 1997; NIDA, 1998).

In 2008, more than 1,000 children across the nation (130 in California) were affected by MA lab incidents (EPIC National Clandestine Laboratory Seizure System, 2008). However, because systematic state and nationwide data collection and reporting protocols are not yet in place, the exact number of children exposed to these hazardous environments is unclear. What is clear is that MA use continues to be a persistent problem across our nation—complicating existing treatment, criminal justice, child welfare, familial, environmental, and public health challenges.

Drug-Endangered Children (DEC) Pilot Project

In response to the growing awareness of children discovered in MA lab settings, the California Governor's Office of Criminal Justice Planning funded a three-year pilot of the Drug-Endangered Children (DEC) project in 1997 (DEC, 2000). Seven county-based multidisciplinary DEC Response Teams were developed to protect the children found living in these environments. The pilot DEC Teams were composed of child protective services (CPS) personnel, narcotic officers, medical professionals, and prosecutors. Data from some of the original counties indicated that 38% of the children removed from MA labs tested positive for MA and exhibited a higher than expected incidence of respiratory, dermatological, and dental problems (Oishi, West, & Stuntz, 2000). Inhalation from second-hand smoke, accidental ingestion, skin absorption, and food and beverage contamination were the primary routes of exposure among young children. Analysis of the medical and developmental exams for 95 DEC cases from San Bernardino County found that 43% revealed abnormal medical exam results following the lab seizure, and 42% revealed developmental delays or cautions (Oishi et al., 2000). In San Diego County, 472 children were found in 176 homes during lab seizures and were removed by CPS during a two-year period (1997–1999). Over one third of these children tested positive for illicit drugs. Of these children, 386 had dependency petitions sustained in juvenile court (Hohman, Oliver, & Wright, 2004).

The long-term medical and developmental effects on these children, as well as their placement, remain unknown as only minimal data collection and follow-up have occurred. In addition, limited data were collected on familial outcomes, such as referral to substance abuse treatment services, criminal charges against parents, incarceration, and how parental outcomes affect final case disposition and child placement.

This study is the first attempt to identify the epidemiology and the nature and extent of the problems associated with this population of children and subsequent familial outcomes. Based on the gap in knowledge regarding this special population of children and families, we formed several research questions.

1. What is the epidemiology of the children removed from home-based MA labs in Los Angeles County?
2. What are the rates of child neglect and abuse, exposure to MA manufacturing, and CPS involvement and placement outcomes of these children?
3. What are the rates and results of medical, mental health, and developmental examinations of these children?
4. Are parents referred for social services and, if so, what are these services?
5. What criminal charges are filed against parents?

Method

Study Design

The University of California, Los Angeles, Integrated Substance Abuse Programs (UCLA ISAP) conducted a three-year exploratory study to examine the available CPS data for children exposed to MA manufacture. The study was funded by the National Institute on Drug Abuse (NIDA), and the data were provided by the Los Angeles County Department of Children and Family Services (DCFS). The UCLA General Campus Internal Review Board determined the study to be exempt from continuing committee review under the secondary data analyses criteria. In addition, we petitioned the Juvenile Division of the Los Angeles Superior Court for an order for research approvals. All approvals requested were reviewed and granted by the appropriate agencies.

Eligibility

Los Angeles County DCFS defines a drug-endangered child as any infant or child under the age of 18 found to be residing in a home or other environment where current or historical drug use, manufacture, sales, or trafficking places that child in immediate or eminent danger. UCLA ISAP analyzed DCFS data previously collected on 99 DEC cases in Los Angeles County.

Data Collection and Analyses

DEC cases with children's information are kept as part of the Child Welfare Systems (CWS) database maintained by DCFS. The CWS database includes variables identifying the type of drug in the home, the civil and criminal allegations, the demographics of the children, and the initial as well as long-term disposition of the legal aspects of each case.

This study analyzed data exclusively from past DEC case records (2001–2003) extracted from the Los Angeles County DCFS database and other DEC case data records. All identifying information was removed and substituted with a unique identifier prior to submission to ISAP.

Analysis for the study was predominantly descriptive. Statistics include percentages, means, rates, correlations, measures of variance, and distribution characteristics as appropriate to the measurement level of selected variables. Frequencies, cell sizes for categorical variables, and normality for continuous variables were examined prior to statistical analyses. Where categorical variables had small cell sizes, categories were collapsed to create cells of sufficient size. We further explored the differences between CPS services offered to the

mothers versus the fathers of the DEC cases (e.g., substance abuse treatment, parenting classes, individual therapy) using chi square analyses.

Results

Demographics Characteristics of DEC

Table 1 shows the demographic characteristics of children who were removed from home-based MA labs in Los Angeles County from 2001 through 2003. All of the cases were considered Level I MA-Endangered Cases (indicating the child had been exposed to a MA lab and the precursor chemicals which are often present), although other illicit substances may have been present in the home. The distribution of female and male children was approximately equal, with 46% being female and 55% being male. There were significantly more Latino and Caucasian children compared to children from other ethnic groups (68% Latino, 29% Caucasian, 2% Native American, and 1% Asian), as expected from a Los Angeles County sample.

The mean age of the children was 6.9 years ($SD = 4.5$) with a range from less than 12 months to 17 years. Specifically, 38% of the children were 5 years old or under, 38% were between the ages of 6 and 10, 21% were between the ages of 11 and 15, and 2% were over the age of 16. Overall, 59% of the school-age children were functioning at grade level, 7% were below grade level, and 6% had severe deficits (i.e., were at least two years below grade level). Nearly a third of the children (30%) were not of school age and could not be assessed. English was the primary language for 58% of the children, Spanish for 22%, 9% were bilingual (English and Spanish), and 11% of the children were non-verbal.

Allegations of Child Abuse and Case Referral

Ninety-four percent of CPS allegations of neglect were substantiated and sustained by DCFS (68% against both parents; 11% against mother only; 14% against father only; 1% against legal guardian; 6% not filed), 11% of the allegations of abandonment were substantiated, and 8% of the allegations of physical abuse (including one case of severe abuse of a child under the age of 5 and one case resulting in the death of a child) were substantiated. Allegations of sexual abuse were substantiated in 1% of the cases (Table 2). A history of domestic violence in the home was substantiated 56% of the time. Nearly all of the instances where children were present during the MA lab seizure resulted in the child being removed by CPS workers (97%) pending further investigation of their home and parents. The majority of child detentions resulted in DCFS opening an active case of investigation of the home and parents (95%).

Home Condition and Exposure to Methamphetamine Manufacture

Assessments of the homes showed that 93% had running water or working utilities at the time the MA lab was discovered. Eighty-six percent were adequately furnished; however, 56% did not have adequate food storage. In addition, 71% had dirty bedding, and 44% of the children were found in dirty clothing. Lack of animal hygiene was found in 82% of the homes and a foul odor was prevalent in 90%. Firearms and pervasive pornography were also found during many of the lab seizures. Handguns/revolvers were present 35% of the time and rifles or shotguns were present 13% of the time; knives and other weapons were also commonly present (also shown in Table 2).

In 18% of the lab seizures, the lab was set up in an attached garage; 13% were found in the backyard; 12% were found in the kitchen or in a bedroom; and 10% were found in the master bedroom or a detached garage. Predominant chemical precursors used for MA manufacture found at the scene included ephedrine/pseudo-ephedrine (the primary

ingredient for manufacturing MA – 81%); denatured alcohol – 57%; phosphorus – 51%; acetone – 49%; and iodine – 48%. All of these chemicals are highly toxic and flammable. Current analyses revealed that 89% of the labs seized showed evidence of a severe fire hazard, and lab fires had occurred in two cases.

Laboratory seizure reports further included the percentage of chemically contaminated evidence found at the scene. Drug residue was found at 82% of the lab seizures. Bi-layer liquid was found in a cooking vessel 77% of the time, indicating the presence of MA in base form. In addition, MA sediment was found during 78% of the seizures (including one case in baby bottles). The location of the children during the seizure and their proximity to the MA lab inform CPS about additional dangers to the children living in the environment. In 92% of the lab seizures, the children were found within one foot of the MA manufacturing apparatus, precursor chemicals, or other manufacturing paraphernalia, even though most were found in their bedroom (44%) or living room/dining room (13%). Eleven percent were found in an attached garage, and 14% were in undetermined locations.

Child Medical Assessments

Fifty-one percent of the DEC cases reviewed received a DEC medical evaluation at a public hospital within 12 hours of the lab seizure, and 9% received an exam after 12 hours; 11% were given medical examinations at a private hospital, and 29% were not referred for medical examinations. Seventy-nine percent of those who were referred for medical assessments were under the age of 10 years.

A single DEC case was sometimes coded with multiple medical problems; thus the primary, secondary, and tertiary medical diagnoses are reported for those who were evaluated (not in order of severity). In total, 80% of the children who were medically evaluated had at least one documented medical issue. Direct exposure (e.g., involving inhalation, dermatologic, residue, or other evidence) to the MA lab, chemical precursors, or to the drug itself was the most often recorded and treated medical issue (73%). Dental decay was noted in 4% of the cases; sinus, throat, and ear infections were present in 4% of the cases; obesity in 4%; and asthma in 3%. Other diagnoses were reported for single cases: cerebral palsy, colic, heart murmur, rhinitis, fever, gastrointestinal inflammation, anemia, seizure disorder, and an abscess. Noted preexisting conditions also included one case of blindness and one case of severe hearing loss.

Additional notations from medical evaluations indicated abnormal blood results in 15 out of 20 reported results. It is unclear from the data if additional blood tests resulting in normal blood levels were conducted and not indicated in the medical notes. If so, this finding is substantially inflated due to sporadic reporting procedures or primary reporting of only abnormal results. Sixty percent of the children were also referred for urinalysis testing. None of the children who were drug tested via urinalysis tested positive for MA (see Discussion for further explanation of this finding) and as a result, only 8% of the cases reviewed had received a DEC follow-up medical exam.

Child Mental Health Assessments

Eighty-three percent of the DEC cases in Los Angeles County were referred for psychological evaluations. In total, 44% of the children who received mental health evaluations were diagnosed with at least one disorder. Twenty percent of the cases assessed had a primary diagnosis of adjustment disorder, 9% were diagnosed with PTSD, 5% with oppositional defiance disorder, 5% ADHD, 4% developmental disability, and 2% depressive disorder.

Parenting Services

Services to address household dysfunction were more often offered to, and completed by, the mother of the children as opposed to the father (see Table 3). For example, 15% of the mothers were referred to and completed family preservation services, while none of the fathers were referred for these services. Also, 69% of the mothers who were referred to parenting classes also completed those classes, compared with 16% of the fathers. Similarly, the mothers were also more likely than the fathers to be referred for drug-testing services (12% of the mothers tested positive; 8% of the fathers tested positive); substance abuse treatment services (31% of the mothers compared to 24% of the fathers were referred for inpatient treatment; 55% of the mothers compared to 25% of the fathers were referred to outpatient treatment); and individual therapy and crisis management therapy (65% of the women completed drug testing services compared with 15% of the men; 69% of the women were referred and attempted to or completed therapy services compared with 6% of the men).

Criminal Justice Outcomes

In more than half of the MA lab seizures, both the mother and father were taken into custody at the scene (56%). In 25% of the seizures, only the father was incarcerated, whereas in 14% of the seizures, only the mother was incarcerated. Approximately 5% of the seizures did not result in charges being filed against either parent (see Table 4). Both parents were most often charged with felony child endangerment (45%) and drug manufacturing (38%). As these charges are the most serious, it follows that possession, possession for sale, and being under the influence of a controlled substance were less often filed.

Final DCFS Case Disposition

In most cases, the children were returned to the custody of the mother (46%) after jail/prison sentences were served or after court cases were closed (shown in Table 4). In fewer instances, the children were returned to both parents (6%) or to the father only (9%) upon closure of the case. Children who were close to 18 years old were often emancipated and released to care for themselves (8%). Six percent of the cases were given permanent placement outside the natural home (i.e., long-term foster care). Four percent of the cases resulted in permanent adoption either by family members or nonrelatives. In other instances, children were detained and then released to the custody of their parents without court intervention (4%).

Discussion

The findings from this pilot study of Los Angeles County's DEC cases provide an indepth look at this special population of children beyond what was recorded during the 1997 DEC pilot project. Furthermore, this study describes the CPS and criminal justice investigational outcomes of the parents and final child placement case dispositions.

Our first goal was to identify the demographics of the children from this particular county. An important finding regarding the demographic characteristics of these children is that the majority of children removed from home-based MA labs during the study period were under the age of 7. This is consistent with reports from other California counties with DEC programs and may be related to CPS policies regarding removal of young children from parental custody. Young children are differentially at risk compared with adults exposed to MA manufacture. Specifically, children's smaller body size, higher rate of growth, and faster metabolism and breathing rate mean that they are more likely to absorb the precursor chemicals and drugs into their bodies than are adults. In addition, children's developing brain and organ systems are more susceptible to damage at specific maturational levels

(Oishi et al., 2000). Because young children have greater contact than adults with their physical environment, they are likely to be exposed to more of the contaminants in their homes. Finally, children have a much longer life span than adults in which to develop acute or chronic effects of chemical exposure. To date, empirical research on general developmental outcomes of pre- or postnatal MA-exposed children is sparse and the long-term effects of exposure to MA manufacture on children are unclear.

We also explored the rates of child abuse and neglect among this sample and found that CPS caseworkers most often substantiated and sustained allegations of child neglect within these environments, compared to allegations of physical or sexual abuse. Recent research has shown that neglect in early stages of life may lead to irreversible developmental damage (Dubowitz, Papas, Black, & Starr, 2002). Physical consequences of neglect arise because lack of nutrition or absence of a nurturing emotional environment can alter the release of important growth-regulating hormones and influence the physical development of children, including their brain (Dubowitz et al., 2002; Springer, Sheridan, Kuo, & Carnes, 2007). Yet, the impact of child neglect can vary depending on the child and on the remedial and enrichment experiences provided *after* the neglect occurs (Perry, Colwell, & Schick, 2002).

Lack of parental supervision further contributes to the possibility of children ingesting chemically contaminated food, as MA solutions are often stored in food or drink containers (Grant et al., 2010; Manning, 1999; U.S. Department of Justice, 2002). The data show that a lack of cleanliness in the homes was customary, often with poor animal hygiene, providing an atmosphere for bacteria to thrive and increasing a child's risk of illness. Findings of hazardous conditions (e.g., presence of toxic chemicals and residue, child's proximity to drug apparatus, risk of fire or explosion, and accessibility to weapons) in the home indicate that the immediate dangers that MA labs pose to children move beyond household dysfunction. However, the multiple risks posed to children in these environments create potential problems for interpretation of research findings because of numerous confounding factors, such as poor maternal health, inadequate nutrition, and overall family dysfunction.

Child medical assessments were further examined and were most often found to be routine examinations that were provided due to direct exposure to the MA lab or the drug itself. When evaluations reported other categories of health issues, it was most often symptoms of the common cold or flu. Some experts contend that symptoms of MA exposure mirror cold/flu symptoms such as respiratory problems, runny nose, and sore throat (Bratcher, Clayton, & Greeley, 2007). There is a potential for misdiagnosis if the examining doctor is not familiar with DEC medical protocols and procedures (see www.nationaldec.org for medical protocols). More problematic health issues were also reported, such as seizure disorder, anemia, obesity, cerebral palsy, colic, and asthma. The most prevalent mental health diagnoses included adjustment disorder, PTSD, and oppositional defiant disorder. However, without a comparison sample of non-MA lab homes and child assessments, it is difficult to speculate on the relationship between these medical and mental health diagnoses to the environment in which the children were found.

Examining the services offered and provided to the families was our final goal. In an attempt to preserve families, CPS professionals often recommend services to address the dysfunction in these families. Our findings show that these services were significantly more often offered to, and completed by, the mother of the children. For example, 69% of the mothers who were referred to parenting classes also completed those classes, compared with 16% of the fathers. Parenting classes are often a requirement from the court in order for the parents to retain custody of their children. The children were most often returned to the custody of their mother after her jail/prison sentences were served or after court cases were closed. However, there is currently no comprehensive information about the implications of

California felony child endangerment legislation and the federal Adoption and Safe Families Act (ASFA - P.L. 105-89) on these cases in juvenile dependency court settings. California is among several states that have elected to implement the ASFA more rigorously than required by federal law and has chosen to enact termination of parental rights at 6 months, versus the federal 12-month timeline, in instances in which the child is 3 years old or younger. In California, chronic history of drug use, no treatment for the past three years, and prolonged incarceration are conditions under which family reunification services need not be offered, and expedited termination of parental rights may proceed. California also enacted a law that mandates felony child endangerment charges for those who manufacture MA with children under the age of 18 present. Thus, incarceration and termination of parental rights is very likely in DEC cases.

Efforts during the early years of the DEC initiative were slow to promote treatment for parents using and manufacturing MA. This is evident with regard to the percentages of parents who were arrested and incarcerated versus the percentage of parents who were referred to treatment programs at the time this data was collected. In more than half of the MA lab seizures, both the mother and the father were taken into custody at the scene. It seems that recently the pendulum has begun to swing again toward a belief in treatment and rehabilitation, as evidenced by the California Department of Corrections recently adding “and Rehabilitation” to its title. As the United States prison population overflows with drug-dependent individuals (predominantly MA-dependent), it is necessary to explore the treatment opportunities and therapies that may aid in their recovery. Advocating for treatment may necessitate ongoing collaborations between substance abuse treatment practitioners and mental health and medical professionals, in addition to the existing multi-agency collaborations (Messina, Marinelli-Casey, Hillhouse, Ang, Hunter, & Rawson, 2008). Education about the benefits of treatment can guide child welfare policy and its effect on substance-abusing families in California and other states. In fact, recent research from MA-specific treatment programs has shown promising results with regard to MA-dependence (Lee & Rawson, 2008).

Limitations of the Study

Varying CPS definitions and procedures for DEC cases make it difficult to generalize findings beyond Los Angeles County. Additionally, the information available for DEC cases may only reflect the dysfunction, abuse, and neglect that is evident at the time of the MA lab seizure, and may not be indicative of the chronicity of the maltreatment. We also found very limited data on the results of medical exams. Medical evaluations and resulting health issues are not documented regularly or consistently. None of the children who were drug tested in Los Angeles County tested positive for MA, which is inconsistent with other reports. This may be attributed to the Gas Chromatography/Mass Spectrometry exam, which is not conducted appropriately in Los Angeles County on children as compared with adults, due to the proportion and size differences between them. Concentrations of MA or the presence of precursor chemicals are much easier to detect in adults than concentrations in children. These calibration issues during testing remain a problem. However, other counties in California have adjusted calibrations to detect levels of MA and other chemicals in DEC cases and have reported that 55% of children removed from home-based MA labs tested positive for toxic levels of chemicals (EPIC National Clandestine Laboratory Seizure System, 2003).

Relying on preexisting data is a further limitation, as we are restricted to analyzing only what has previously been collected on these children and families, and this particular DEC data included cases from 7 – 10 years ago. The standardization and representativeness of the data are questionable when it is not collected directly by the researcher. Furthermore, we did not have access to information on the parents/family beyond the recommended services,

case disposition, and criminal charges. We also did not have access to data to compare the MA cases to other CPS cases or access to case services with case outcomes.

Public Policy Implications

The combination of exposure to the toxic effects of the MA and to the behavior of the adult MA users puts children living in these settings in a uniquely dangerous and damaging environment. However, no empirical studies to date have measured the impact of these circumstances, and the lack of statistical data to validate the extent of the DEC problem has masked its significance by policy makers. Thus, the medical, developmental, and placement outcomes of these children are largely unknown as there is currently no state or nationwide comprehensive information about the needs of this special population of children or the implications of California legislation and the federal ASFA regulations on their cases in juvenile dependency court settings.

The findings from this study of Los Angeles County's DEC cases begin to provide a foundation for ongoing research in this area. Comprehensive documentation of the needs of these children could benefit the fields of pediatrics, criminal justice, law enforcement, and child welfare. Empirical research in this area could further guide policy decisions regarding communities, families, children, treatment, and adoption guidelines affected by the growing epidemic of home-based MA labs.

Moreover, children of MA-dependent parents are at high-risk to continue intergenerational patterns of drug abuse, criminal behaviors, and neglectful parenting (Messina, Marinelli-Casey, Hillhouse, Rawson, Hunter, & Ang, 2008). Histories of childhood abuse and household dysfunction are commonly reported by MA-dependent men and women. (Messina, Marinelli-Casey, Hillhouse, Ang, Hunter, & Rawson and colleagues (2008) also found that the onset of MA use is related to early childhood abuse and neglect, indicating the need for early prevention and treatment for childhood trauma. Systematic data collection from the national DEC effort and case disposition follow-up could begin to provide a clearer picture of policies and practices that promote or hinder coordination between child welfare, substance abuse treatment providers, and criminal justice agencies.

Conclusion

Findings from this study may shift the attention of scientists studying prenatal drug exposure to include the topic of children's postnatal environments, specifically looking at the effects of parental MA use and manufacture on child development. Developmental theorists assert that an accumulation of multiple risk factors, such as prenatal exposure to drugs and alcohol, ongoing parental substance abuse, childhood maltreatment, and exposure to violence, has a greater negative impact on children's psychological development than any specific risk factor (Hans, 2002).

Longitudinal studies are needed to investigate the independent and combined contributions of biologic/genetic, psychosocial, and contextual factors that influence the development of children. Findings from such an evaluation could provide information for public education, prevention, and treatment services that reach beyond the individual drug-involved offender to his/her children, family, and local community.

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References

- Anglin MD, Burke C, Perrochet B, Stamper E, Dawad-Noursi S. History of the methamphetamine problem. *Journal of Psychoactive Drugs*. 2000; 32(2):137–1. 41. [PubMed: 10908000]
- Bratcher L, Clayton EW, Greeley C. Children in methamphetamine homes: A survey of physicians practicing in Southeast Tennessee. *Pediatric Emergency Care*. 2007; 23(10):696–702. [PubMed: 18090100]
- Drug Endangered Children Resource Center. Drug endangered children health and safety manual. 2000. (Previously available from the Drug Endangered Children Resource Center, 14622 Victory Blvd., Van Nuys, CA 91411)
- Dubowitz H, Papas M, Black M, Starr R. Child neglect: Outcomes in high-risk urban preschoolers. *Pediatrics*. 2002; 109(6):1100–1108. [PubMed: 12042549]
- El Paso Intelligence Center (EPIC) National Clandestine Laboratory Seizure System. Statistics. 2003. Retrieved from www.usdoj.gov/dea
- El Paso Intelligence Center (EPIC) National Clandestine Laboratory Seizure System. Statistics. 2008. Retrieved from www.usdoj.gov/dea
- Gonzales R, Marinelli-Casey P, Shoptaw S, Ang A, Rawson R. Hepatitis C virus infection among methamphetamine-dependent individuals in outpatient treatment. *Journal of Substance Abuse Treatment*. 2006; 31:195–202. [PubMed: 16919748]
- Grant P, Bell K, Stewart D, Paulson J, Rogers K. Evidence of methamphetamine exposure in children removed from clandestine methamphetamine laboratories. *Pediatric Emergency Care*. 2010; 26(1):10–14. [PubMed: 20042914]
- Haight W, Ostler T, Black J, Sheridan K, Kingery L. A child's-eye view of parent methamphetamine abuse: Implications for helping foster families to succeed. *Children and Youth Services Review*. 2007; 29(1):1–15.
- Hans SL. Studies of prenatal exposure to drugs: Focusing on parental care of children. *Neurotoxicology and Teratology*. 2002; 24(3):329–337. [PubMed: 12009488]
- Hohman M, Oliver R, Wright W. Methamphetamine abuse and manufacture: The child welfare response. *Social Work*. 2004; 49(3):373–379. [PubMed: 15281692]
- Irvine GD, Chin L. The environmental impact and adverse health effects of the clandestine manufacture of methamphetamine. *Substance Use and Misuse*. 1997; 32(12 & 13):1811–1812.
- Johnson E, Waldfogel J. Parental incarceration: Recent trends and implications for child welfare. *Social Services Review*. 2002; 76(3):460–481.
- Lee NK, Rawson RA. A systematic review of cognitive and behavioural therapies for methamphetamine dependence. *Drug and Alcohol Review*. 2008; 27(3):309–317. [PubMed: 18368613]
- Manning T. Drug labs and endangered children. *FBI Law Enforcement Bulletin*. 1999; 68(7):10–14. Retrieved from <http://www.fbi.gov/stats-services/publications/law-enforcement-bulletin/1999-pdfs/jul99leb.pdf>.
- Messina N, Marinelli-Casey P, Hillhouse M, Ang A, Hunter J, Rawson R. Childhood adverse events and health outcomes among methamphetamine dependent men and women. *International Journal of Mental Health and Addiction*. 2008; 6(4):522–536.
- Messina N, Marinelli-Casey P, Hillhouse M, Rawson R, Hunter J, Ang A. Childhood adverse events and onset and severity of methamphetamine dependence among men and women. *The Journal of Psychoactive Drugs*. 2008; 3:399–409. PMID: 19248397.
- Messina N, Marinelli-Casey P, West K, Rawson R. Children exposed to methamphetamine use and manufacture. *Child Abuse & Neglect*. 2007 doi: 10.1016/j.chiabu.2006.06.009 (PMID: 17383002).

- National Drug Intelligence Center. Methamphetamine production in the United States rebounds to meet domestic demand. U.S. Department of Justice; Johnstown, PA: Aug. 2009 Situation Report: Product Number 2009-S0787-005
- National Institute on Drug Abuse (NIDA). NIDA Research Report: Methamphetamine, abuse and addiction. 1998. NIH Publication No. 98-4210 Retrieved from <http://www.nida.nih.gov/ResearchReports/methamph/methamph.html>
- Office of National Drug Control Policy. Methamphetamine trends in the United States. Jul. 2010 Retrieved from <http://www.whitehousedrugpolicy.gov/publications/pdf/Pseudoephedrine.pdf>
- Oishi, SM.; West, KM.; Stuntz, S. Drug endangered children health and safety manual. West, KM., editor. Drug Endangered Children Resource Center; Los Angeles, CA: May. 2000
- Perez JA, Arsura EL, Strategos S. Methamphetamine-related stroke: Four cases. Journal of Emergency Medicine. 1999; 17(3):469–471. [PubMed: 10338241]
- Perry, BD.; Colwell, K.; Schick, S. Child neglect. In: Levinson, D., editor. Encyclopedia of crime and punishment. Vol. Vol. 1. Berkshire Reference Works; Great Barrington, MA: 2002. p. 192-196.
- Springer KW, Sheridan J, Kuo D, Carnes M. Long-term physical and mental health consequences of childhood physical abuse: Results from a large population-based sample of men and women. Child Abuse & Neglect. 2007; 31:517–530. [PubMed: 17532465]
- United Nations Office on Drugs and Crime. World drug report. Oxford University Press; New York: 2009.
- U.S. Department of Justice. Information Bulletin. Author; Johnstown, PA: Jul. 2002 Children at risk (No. 2002-L0424-001) Retrieved from <http://www.justice.gov/ndic/pubs1/1466/1466p.pdf>

Table 1

Demographic Characteristics of DEC Cases in Los Angeles County (N = 99)

Characteristic	n	%	Mean	SD	Min	Max
Child gender						
Male	54	54.5				
Female	45	45.5				
Child age	99		6.9	4.5	0	17
Ethnicity						
Latino (Mexican/Hispanic)	65	65.7				
Latino (Other)	1	1				
Caucasian (European)	29	29.3				
Asian	1	1				
Native American	3	3				
Educational level						
At grade level	54	59.3				
Below grade level	5	5.5				
Severe deficit	5	5.5				
Not school age	27	29.8				
Language						
English	57	57.6				
Spanish	22	22.2				
Bilingual	9	9.1				
Non-verbal	11	11.1				

Table 2

Child Protective Services' Home Assessment of DEC Cases in Los Angeles County (N = 99)

Home assessment	N	%	Mean	SD	Min	Max
CPS sustained allegations						
Neglect	93	93.0				
Abandonment	11	11.1				
Physical abuse	8	8.1				
Sexual abuse	1	1				
Death of child	1	1				
History of domestic violence	45	56.3				
CPS case referral						
Child removed from premises	96	97				
Detained pending investigation	96	97				
Number of prior referrals	99	1.5	2.3	0	11	
Referral outcome						
DCFS opens investigation on home and parents	94	95				
Opened/closed	2	2				
Transferred out of county	3	3				
Condition of home						
Running water/working utilities	91	94.8				
Broken/missing furniture	13	14.1				
Adequate food storage	29	43.9				
Dirty bedding	54	71.0				
Dirty clothing	34	43.6				
Foul odor	83	90.2				
Poor animal hygiene	16	18.0				
Handguns/revolvers in home	35	35.3				

Table 3

The Status of Referrals for and Completion of Familial Services for Parents

Service type	Mother		Father	
	<i>N</i> = 99	%	<i>N</i> = 99	%
Family preservation services				
Referred, attempted, completed	15	15.2	0	--
Referred, attempted, not completed	2	2.0	2	2.0
Referred, Not attempted	2	2.0	4	4.0
Not referred	80	80.8	93	93.4
Parenting classes				
Referred, attempted, completed	68	68.7	19	19.2
Referred, attempted, not completed	15	15.2	13	13.1
Referred, not attempted	4	4.0	27	27.3
Not referred	12	12.1	40	40.4
Drug testing services				
Referred, attempted, completed	64	64.7	15	15.2
Referred, attempted, not completed	20	20.2	9	9.1
Referred, not attempted	3	3.0	22	22.2
Not referred	12	12.1	53	53.5
Individual therapy/Crisis Management				
Referred, attempted, completed	68	68.7	6	6.0
Referred, attempted, not completed	19	19.2	8	8.1
Referred, not attempted	3	3.0	26	26.3
Not referred	9	9.1	59	59.6
Psychiatric referral services				
Referred, attempted, completed	5	5.0	0	--
Referred, attempted, not completed	0	--	2	2.0
Referred, not attempted	1	1.0	2	2.0
Not referred	93	94.1	95	96.0
Substance abuse/Inpatient service				
Referred, attempted, completed	8	8.1	0	--
Referred, attempted, not completed	4	4.0	6	6.1
Referred, not attempted	19	19.2	18	18.2
Not referred	68	68.7	75	75.8
Substance abuse/Outpatient service				
Referred, attempted, completed	28	28.3	9	9.1
Referred, attempted, not completed	23	23.2	2	2.0
Referred, not attempted	3	3.0	14	14.1
Not referred	45	45.4	74	74.7

Table 4

Criminal Justice Outcomes and Final DEC Case Disposition (N = 99)

Criminal justice and case disposition outcomes	<i>n</i>	%
Incarcerated at the scene		
Both parents	55	55.6
Mother	14	14.1
Father	25	25.3
Not taken into custody	5	5.1
Felony charges for possession/sales		
Both parents	15	15.1
Mother	4	4.0
Father	6	6.0
Not filed	74	74.7
Felony charges for MA manufacture		
Both parents	38	37.4
Mother	15	15.2
Father	25	25.2
Not filed	21	21.2
Felony charges for child endangerment		
Both parents	43	43.4
Mother	11	11.1
Father	15	15.2
Not filed	30	30.3
Final case disposition		
Court returned to custody of both parents	6	6.4
Court returned to mother	43	45.2
Court returned to father	7	7.5
Legal guardian/family or friends	1	1.1
Legal guardian/non-relative	3	3.2
Permanent placement/Long-term foster care	5	5.4
Adoption within family	1	1.1
Adoption non-relative	3	3.2
No dependency court intervention (returned to both or one parent)	8	8.6
Emancipated	7	7.5
Transferred out of county	3	3.2
Other	7	7.5