

Maternal Drug Abuse and  
Drug Exposed Children:

4747

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# Understanding the Problem



# **Maternal Drug Abuse and Drug Exposed Children: Understanding the Problem**

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<sup>1</sup> The subgroup operated primarily during 1991. Some participants have subsequently moved to other organizations. The Ad Hoc Drug Policy Group operates out of the Office of the Counsel to the Secretary on Drug Abuse Policy.





## EXECUTIVE SUMMARY

Drug abuse is a serious problem in the United States. In particular, the expanding popularity and highly addictive properties of crack cocaine have generated considerable concern at the local and national levels. With large numbers of women using illicit substances during pregnancy, Federal, State, and local policy makers and service providers are struggling to define how best to address the growing problem of infants exposed to drugs.

Analysis of NIDA's most recent National Household Survey on Drug Use (1991) indicates that the use of cocaine by women of childbearing age is still high. Of the approximately 59.2 million women in the childbearing age group (15 - 44 years), over 4.5 million are estimated to have used illicit drugs in the past month. Especially alarming is the fact that about 601,000 women in this age group appear to be current users of cocaine. There is, however, no accurate estimate of how many of these women are pregnant.

There are several overlapping populations of concern when one talks about maternal drug use. From the broadest perspective, the population of concern is women of childbearing age who use or are at high risk of using drugs, and their children. Of particular concern are pregnant substance abusers, mothers currently using drugs, children exposed to drugs in-utero, and children residing in drug using households.

This paper was written as a step toward defining the problem of maternal drug use and prenatal drug exposure for the U.S. Department of Health and Human Services (HHS) and its component agencies. Its authors include representatives from the variety of HHS agencies which have an interest in this issue. This paper is not intended to serve as a definitive analysis of the problem. However, we hope that it will help inform the field on varying aspects of the problem and the strategies which are evolving to help in its solution.

The discussion includes descriptions of the nature and extent of the problem of maternal drug-abuse and the prevalence of drug-exposed children; research on substance abusing women and their children; drug treatment and prevention services for mothers; child welfare and legal issues relating to drug abusing women and their children; and Medicaid and Social Security financing for this population. The paper concludes with observations about the nature of maternal drug abuse and effective strategies for intervention,

This paper does not address the emerging issue of the long term developmental needs of drug-exposed children. While research is underway to document possible implications for child development of parental drug use before and after birth, as well to develop appropriate interventions for affected children, such work has not yet produced sufficient consensus for a comprehensive discussion. It is clear, however, that drug-exposed children display a wide range of ability levels and that only a small proportion display serious, long term impairment. Materials under development both within HHS and the Department of Education will address this issue in the coming months and years.

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**Problem** Drug abuse among pregnant women and women of childbearing age is a complex and growing problem with several important inter-related components.

- ◆ Prenatal drug exposure has significant, although not yet clearly defined, negative effects on the infant and developing child. Low birthweight and premature delivery are among the most serious. Parental drug use also puts children at increased risk of child neglect and abuse.
- ◆ Drug using women and their children are a particularly hard to reach population.
- ◆ Strained drug treatment and social service systems throughout the Nation currently either lack the capacity or appropriate family orientation to effectively serve this population.

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**Strategy** Service providers are finding the needs of drug-exposed families so extensive that no one agency can address them all. Instead, the agencies must work together and pool their expertise and resources to serve these families most effectively.

HHS efforts regarding this population are focused on the following objectives:

- ◆ Conduct research in order to determine the nature and extent of maternal drug use; better understand the medical and developmental consequences of prenatal drug exposure on the fetus, infant, and developing child; and develop appropriate prevention and treatment approaches.
- ◆ Develop and disseminate effective interventions to:
  - Prevent drug use among women of childbearing age.
  - Treat drug addiction among women of childbearing age.
  - Prevent child abuse and neglect in families with substance abuse problems, and serve those children who have been abused or neglected because of their parents drug use.
  - Intervene with children who show or are at risk of developmental delays or other problems resulting at least in part from parental drug use.
- ◆ Continue to support drug treatment capacity by providing funds to States for prevention and treatment services.
- ◆ improve the ability of the child welfare system to serve increased numbers of drug-exposed or drug-affected children and families.

- ◆ Provide medical insurance and disability income supports for eligible individuals (including many with substance addictions) and their children. These programs enable many to receive treatment who might not otherwise.

A number of offices within HHS play vital roles in carrying out the objectives described above. Detailed descriptions of specific programmatic efforts of each agency with respect to this population may be found in the companion document to this piece, “Maternal Drug Abuse and Drug-exposed Children: A Compendium of HHS Activities”.

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### **Research on the Effects of Prenatal Drug Abuse**

The challenge to research is to design instruments and develop the methodologies to determine the nature, extent, and consequences of maternal drug abuse; enhance our understanding of the basic mechanisms of action of drugs and their effects when they cross the placenta; and to develop and test new treatment and prevention strategies which address the myriad of problems facing drug abusing women and their children. In addition, more research is needed on the effects of paternal drug abuse on children.

To determine the incidence and prevalence of maternal drug abuse and its developmental, psychological, and physical effects, NIDA is supporting research to develop and improve approaches for identifying pregnant women and neonates at risk; provide estimates of the prevalence of drug use during pregnancy and the number of infants exposed to drugs during pregnancy; and determine the effects of drug exposure on a variety of outcome measures. Research on the optimal combination of treatment and other services, as well as settings in which such services are provided will permit us to make recommendations regarding model treatment strategies and options for providing such services. NIDA’s basic research program is increasing the understanding of the effects of drug abuse on mothers and their offspring and laying the foundation for the development of medications appropriate to this population.

There has been little information on effects of paternal drug abuse on children until recently. One animal study has demonstrated a relationship between ingestion of morphine and alteration in normal development of offspring, and observed that these effects were long-term in nature. This research hints at the potential harmful effects of a father’s drug use on his children.

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### **Preventing and Treating Drug Abuse in Pregnant and Parenting Women**

The many negative health and social consequences of substance abuse for a woman and her children demand that such abuse be prevented to the extent possible and treated in those for whom prevention is too late or unsuccessful. The challenge for HHS and for State, local, and private agencies supporting prevention and treatment activities has been to tailor appropriate and effective prevention messages and treatment strategies for high risk groups.

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At the Federal level, HHS is working to develop, document, and disseminate effective models of substance abuse prevention and treatment.

Drug addiction is a chronic, relapsing disorder that is frequently accompanied by a host of medical, psychological, and sociological problems. The incidence of addiction-related health, mental health, social and emotional disorders is especially high in drug dependent women (as opposed to men), who typically are without family and community support systems or economic resources, and whose own family histories often include abuse and/or addiction. Treatment programs are often unprepared to meet the particular needs of women with children, including child care and development, parenting skills training and child abuse and neglect prevention, and addressing the consequences of addicted women's frequent histories of abuse as children and other domestic violence.

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### **Child Welfare Services for Drug Abusing Families**

The number of drug-exposed infants and children of drug abusers entering the child welfare system is creating a new set of demands that have yet to be properly addressed. Parental substance abuse significantly increases the risk of neglect, physical abuse, and sexual abuse.

During the 36 months between June 1987 and June 1989 the American Public Welfare Association estimates that the number of children in foster care in the U.S. increased approximately 29 percent, to 360,000 children. The States of California and New York were together responsible for 55 percent of this increase.

Assessment of the risks to the child is particularly complex and difficult in situations of illegal drug use. Intensive family service programs often will not accept drug involved families. The mother may deny drug use due to distrust of the child welfare authorities. In addition, child welfare caseworkers often doubt that promises of sobriety can be maintained.

Despite these uncertainties, most of the substance-exposed infants and children of drug users do not go into foster care placement. In New York, only about one-third of the substance exposed infants go into foster care immediately, and in a 1990 GAO study only 1,200 of the 4,000 infants reported to be born substance exposed were placed in foster care.

Many child welfare professionals are unfamiliar with the special care needs of drug-exposed children and do not have adequate preparation or resources to handle such a large proportion of high-risk cases. In-service training and staff education on drug effects, treatment, infant-parent interaction, and high-risk mother-infant pairs are essential supports for professionals and para professionals serving these children and their families.

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## **Legislative and Judicial Responses to Substance Abuse in Women**

For the most part, drug-exposed children are being served by the public child welfare system and the family courts, rather than the criminal justice system. However, a few States have begun to prosecute pregnant women as drug dealers, drug abusers, or as child abusers under criminal statutes. Some States have also enacted legislation to require reports of perinatal drug abuse to child protective service agencies, or similar authorities. Although, child welfare agencies adhere to a philosophy of preserving family unity, they frequently make out-of-home foster care placements to protect the child. Federal statutes require that States make "reasonable efforts" to rehabilitate and reunite the family, i.e., to provide services to the family, in order to qualify for certain Federal funds. When it is not possible to reunite the family, State laws govern the termination of parental rights and adoption. Federal legislation also provides fiscal support for adoption of children with special needs, which may apply to some drug-exposed children.

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## **Financial Assistance Programs**

The Medicaid program, administered by the Health Care Financing Administration (HCFA) is a Federal-State entitlement program that pays for the health care of certain categorically eligible low income individuals. For eligible individuals, States must provide, at a minimum, needed inpatient and outpatient hospital services, rural health clinic services, physician services, nurse midwife services, services in Federally qualified health centers, and EPSDT services for children under 21 years of age. Within the above categories, States can choose to offer a variety of alcohol and drug treatment services, for instance detoxification, outpatient day treatment, or methadone maintenance. Whether or not individual States cover such services depends on how they define services under the mandatory categories and whether they set limits on the amount of services available to an individual under Medicaid. At present, Medicaid does not pay for treatment of drug addiction or mental illness in residential treatment facilities of larger than 16 beds. HCFA is, however, sponsoring a series of waiver demonstrations allowing several States to experiment with the option of allowing such services for pregnant substance abusing women.

Mothers and children with substance addictions or substance-related disabilities may be eligible for payments and medical coverage under two disability programs administered by the Social Security Administration. These are the Social Security Disability Insurance (SSDI) and the Supplemental Security Income (SSI) programs. While the disability eligibility criteria for the two programs are similar, SSDI requires the recipient to obtain insured status, which is accomplished by working for a certain period of time in a job covered by Social Security. SSI is a needs-based program that does not require insured status. Minor dependents of SSDI beneficiaries are eligible for benefits based on their dependent status. Children of SSI recipients only receive benefits if they are disabled themselves.

Under both the SSDI and SSI programs, the mother must have a medically determinable physical or mental impairment that has kept, or is expected to

keep, her from working for at least 12 months, or is expected to result in death. The impairment must be demonstrated by medically acceptable diagnostic techniques-signs, symptoms and laboratory findings. In addition, a child can qualify for SSI disability payments in his or her own right, even if the parent is not disabled, if a child manifests a substantial reduction in ability to function independently, appropriately, and effectively in an age-appropriate manner because of a medically determinable impairment. Recently published childhood disability regulations include medical listings for psychoactive substance dependence disorders in children for the first time.

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## Conclusions

Drug using mothers and their children have multidisciplinary needs and will require the coordinated provision of services from a number of service systems and disciplines. Service providers who work with these families stress that cooperation, collaboration, and communication among the agencies and programs who see these families is essential.

Substance abuse by pregnant women and women with children is a problem of extreme concern to the U.S. Department of Health and Human Services and its component agencies. In this document we attempt to outline an understanding of this problem and a strategy toward its solution. In particular, we emphasize the following:

- ◆ Maternal drug abuse is a complex, multifaceted problem.
- ◆ It is possible to provide effective services to this population.
- ◆ Women and children have particular characteristics and needs which must be accounted for in service design.
- ◆ Maternal drug abusers have complex needs which cannot be solved with short-term interventions. Severely addicted women in particular may need long-term interventions at varying degrees of intensiveness over the course of their recovery.

The varied agencies within HHS are committed to working together to address the problem of maternal drug use and the needs of drug-exposed children. As has been described above, substantial progress has been made in understanding the nature of the problem and developing strategies to address the needs of this population. By conducting research, developing and disseminating effective interventions, supporting State and local service capacity, and through medical and disability insurance payments for eligible individuals, HHS carries out its commitment to healing and strengthening families affected by maternal substance abuse.

# INTRODUCTION

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**PURPOSE** Drug abuse is a serious problem in the United States. The low cost of crack cocaine coupled with its highly addictive properties are especially troublesome. Substance abuse by women of childbearing age, particularly during pregnancy and during the early years of child rearing, has resulted in increasing numbers of children coming to public attention for their protection, Federal, State and local policy makers and service providers are struggling to define how best to address the growing problem of infants exposed to drugs and mothers unable to provide proper care and nurturance for their young.

This paper draws from the perspective of various programs from within the Department of Human Services which have responsibilities concerning drug using mothers and their children. It is not a definitive analysis of the problem. However, we hope that it will help inform the field on varying aspects of the problem and the strategies which are evolving to help in its solution.

This paper is one of several products generated by the Sub-Group on Substance Abusing Women and Their Children of the Department's Ad Hoc Drug Policy Group. Its companion piece, "Maternal Drug Abuse and Drug-exposed Children: A Compendium of HHS Activities," details the variety of efforts the Department has underway which relate to these populations. Taken together, we anticipate that these pieces, and others the group may decide to produce in the future, can represent a coherent vision of this Department's involvement in addressing the needs of substance abusing women and their children, and in preventing the future abuse of drugs by women of childbearing age.

The discussion which follows includes descriptions of the nature and extent of the problem of maternal drug abuse and the prevalence of drug-exposed children; research on substance abusing women and their children; drug treatment and prevention services for mothers; child welfare and legal issues relating to drug abusing women and their children; and Medicaid and Social Security financing for this population. The paper concludes with observations about the nature of maternal drug abuse and effective service strategies for this population.

This paper does not address the emerging issue of the long term developmental needs of drug-exposed children. While research is underway to document possible implications for child development of parental drug use before and after birth, as well to develop appropriate interventions for affected children, such work has not yet produced sufficient consensus for a comprehensive discussion. It is clear, however, that drug-exposed children display a wide range of ability levels and that only a small proportion display serious, long term impairment. Materials under development both within HHS and the Department of Education will address this issue in the coming months and years.





## PROBLEM AND DEPARTMENTAL STRATEGY

### Historical Perspective

Drug abuse among pregnant women has been a major concern since the first accounts that women who used opiates during pregnancy were reported to suffer increased incidence of serious childbirth complications, and their children were reported to suffer from withdrawal and various developmental deficits. While research on the effects of drugs taken during pregnancy is not a new topic, the problem of maternal drug abuse has received much more attention in recent years following reports of fetal alcohol syndrome and developmental defects associated with cocaine and marijuana use by pregnant women.

Preliminary reports have indicated a variety of medical complications in the children born to women who used drugs during pregnancy, but these need to be validated by more systematic study with refined techniques. The initial reports of neonatal consequences have ranged from withdrawal, seizures, and strokes to rare urogenital birth defects in cocaine-exposed infants. There are also effects which have long-term implications for an infants growth and mental development. For example, impairment of memory, intelligence, and motor coordination have been reported in infants who have been exposed to drugs during the prenatal period.

In the past, the general public perception has been that marijuana use during pregnancy may not be particularly harmful to the fetus or newborn child. Recent research indicates, however, that marijuana use during pregnancy is associated with low birth weight and decreased gestational age proportional to the amount of marijuana smoked, less sleep by the newborn, more arousals, and increased activity. Similar effects have been observed in the infants of alcohol-abusing mothers.

Pregnant women who abuse drugs put themselves at risk of experiencing health problems related to such use as well as giving birth to infants who may suffer drug withdrawal and a variety of other drug-related health problems. The infant is at risk from the standpoint of biological vulnerability, possible developmental delays, and the impaired ability of some drug using mothers to provide adequate care. In addition, perinatal transmission of the Human Immunodeficiency Virus (HIV), a relatively new problem, is of especially disturbing proportion. Over 75 percent of all perinatally acquired HIV infections are secondary to intravenous drug use by an infected mother or her sexual partner(s). By sharing needles, intravenous drug abusers transmit HIV to one another; through sexual intercourse, they can transmit the infection to their heterosexual partners and, through them, to infants. Virtually unheard of before 1981, perinatally acquired immunodeficiency syndrome (AIDS) is rising rapidly as a cause of death among children. It is already the ninth leading cause of death among children 1 to 4 years of age. If current trends continue, AIDS could be among the top five causes of death for children ages 1 to 4 in the next 3 to 4 years.

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## **Incidence and Prevalence**

Analysis of NIDA's most recent National Household Survey on Drug Use (1991) indicates that the use of cocaine by women of childbearing age is still high. Of the approximately 59.2 million women in the childbearing age group (15-44 years), over 4.5 million are estimated to have used illicit drugs in the past month. Especially alarming is the fact that about 601,000 women in this age group appear to be current users of cocaine. There is, however, no accurate estimate of how many of these women are pregnant.

Incidence studies to date have been small scale pilot studies. One of the most frequently cited estimates (Chasnoff) is that the prevalence of illicit drug use among pregnant women is 11 percent (range 0.4-27 percent). And further, based on the live birth rate of 3.8 million in the United States, the investigator estimated that there may be as many as 375,000 babies being born each year that may be exposed to one or more illicit drugs prenatally. This estimate was based on a small study of 36 mainly urban hospitals in the United States. The study was neither a national probability study, nor did it determine the extent of drug use (amount, frequency, and time of use of any one particular drug during pregnancy). Thus, it is not possible to estimate accurately from this study the true incidence and prevalence of drug use by pregnant women and, thus, the number of drug-exposed newborns. The Office of National Drug Control Policy has used an estimate of 100,000 drug-exposed babies born per year in its National Drug Control Strategy documents, a figure supported by a 1990 report of the HHS Inspector General.

Another study published in 1988 found that 17 percent of 679 pregnant women delivering at a Boston hospital in 1984 had used an illicit drug at least once during their pregnancy, while 8 percent had used cocaine. In a later study, the same research group reported that 31 percent of the 1,226 pregnant women studied had used marijuana and 18 percent had used cocaine during pregnancy. A New York City study showed that 5 percent of all newborns were exposed to cocaine, but the number of live births was not provided. In an inner city Philadelphia hospital where approximately 3,400 babies are born annually, about 18.5 percent of the delivering mothers were found to be cocaine users, but once again the true nature of cocaine use during pregnancy was not clear and the study results could not be generalized to the Nation. In Rhode Island, of the 465 women delivering in the State, 7.5 percent were found to be users of an illicit drug during pregnancy; 2.6 percent had used cocaine, 3 percent marijuana, 1.7 percent opiates, and 0.2 percent amphetamines. Once again, these results cannot be generalized to the Nation. Thus, the available data give an indication of the extent of the problem, especially in urban areas, but do not permit an accurate estimate of the number of in-utero drug-exposed newborns in the United States.

To develop a more accurate estimate, a major new epidemiologic study of in-utero drug exposure has been initiated by the National Institute on Drug Abuse. This study will survey a national probability sample of about 5,000 hospital-delivering mothers in 106 hospitals regarding drug use previous to and during their pregnancy. They will be interviewed regarding type of drug(s), timing, duration, frequency, route of administration, and dose consumed. This will be accompanied by a screen on the mothers admission

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urine for drugs and collection of data on the infants birth weight and length of stay in the hospital. Data will be available in 1992-1993.

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**Problem**

The problem of maternal drug use has several inter-related components. While described here in broad terms, later discussions provide more detail about specific aspects of the problem and approaches toward its solution. Throughout these discussions it must be remembered that polydrug use (the use of more than one drug) is the norm among drug abusing women. Most will use alcohol and marijuana in addition to cocaine, for instance, and therefore talking about a crack user or a cocaine exposed infant, for instance, is in many cases misleading.

There are several overlapping populations of concern when one talks about maternal drug use. From the broadest perspective the population of concern is women of childbearing age who use or are at high risk of using drugs, and their children. Of particular concern are pregnant substance abusers, mothers currently using drugs, children exposed to drugs in-utero, and children residing in drug-using households.

**Prenatal drug exposure has significant, although not yet clearly defined, negative effects on the infant and developing child.** Details remain unclear, however, in part because effects are dependent on the specific drug as well as on the amount used, duration of use, and timing of exposure during pregnancy. In addition to direct biological effects, parental drug related behavior can have negative consequences for children independent of direct drug exposure (e.g., increased risk of child abuse or neglect).

**Drug using women and their children are a particularly hard to reach population.** In addition to the general denial associated with drug use, initial reports indicate that fear of child protection agencies may discourage some maternal drug abusers from seeking treatment or other services. In addition, poor and minority women are disproportionately represented among substance abusing mothers (at least among those identified through public systems) and face the same under service that these populations face regarding most health care services.

**Strained drug treatment and social service systems throughout the Nation currently lack either the capacity or appropriate family orientation to effectively serve this population.** As will be discussed in more detail later, child welfare caseloads in many parts of the Nation are far beyond levels allowing adequate services and supervision. In addition, drug treatment programs are rarely operated with a family focus, undermining the possibility of effective treatment for pregnant women or women with children.

**HHS considers and treats addiction as a disease. Nonetheless, it is critical to remind those contemplating drug use, drug users who have not yet become addicted, and those who are struggling to recover from addiction that they have responsibility for the course of their lives. For such individuals,**

establishing personal responsibility and a commitment to a healthy lifestyle is a vital part of prevention and recovery.

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**Strategy**

The issue of maternal drug abuse is complex and extremely emotional. Service providers are finding the needs of these families so extensive that no one agency can address them all. Instead the agencies must work together and pool their expertise to serve these families most effectively.

HHS efforts regarding this population are focused on the following objectives:

- ◆ Conduct research in order to determine the nature and extent of maternal drug use; better understand the medical and developmental consequences of prenatal drug exposure on the fetus, infant, and developing child; and develop appropriate prevention and treatment approaches.
- ◆ Develop and disseminate effective interventions to:
  - Prevent drug use among women of childbearing age.
  - Treat drug addiction among women of childbearing age.
  - Prevent child abuse and neglect in families with substance abuse problems, and serve those children who have been abused or neglected because of their parents drug use.
  - Intervene with children who show or are at risk of developmental delays or other problems resulting at least in part from parental drug use.
- ◆ Continue to support treatment capacity by providing funds to States for prevention and treatment services.
- ◆ Improve the ability of the child welfare system to serve increased numbers of drug-exposed or drug-affected children and families.
- ◆ Provide medical insurance and disability income supports for eligible individuals and their children (including many with substance addictions). These programs enable many to receive treatment who might not otherwise.

These goals are consistent with Secretary Sullivan's Goals and Program Directions for HHS. (For a full discussion of Goals and Program Directions see The FY1991-FY1992 HHS Program Directions Plan.)

The importance which the Department places on the objectives outlined above is consistent with the President's special emphasis, and top priority placed in the National Drug Control Strategy, on addressing the issues associated with substance abusing women. The Administration will continue to foster access

to and expansion and improvement of treatment services for pregnant women and their children.

A number of offices within HHS play vital roles in carrying out the objectives described above. These are listed immediately below and include components of the Public Health Service (which oversees the health side of the Department's activities), the Administration for Children and Families which oversees the Department's human services activities, as well as the Health Care Financing and Social Security Administrations. Detailed descriptions of specific programmatic efforts of each agency with respect to this population may be found in the companion document to this piece, "Maternal Drug Abuse and Drug-exposed Children: A Compendium of HHS Activities."

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**Within the Public  
Health Service (PHS)**

Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA)  
National Institute on Drug Abuse (NIDA)  
National Institute on Alcohol Abuse and Alcoholism (NIAAA)  
Office for Substance Abuse Prevention (OSAP)  
Office for Treatment Improvement (OTI)  
National Institute on Child Health and Human Development (NICHD)  
Health Resources and Services Administration (HRSA)  
Maternal and Child Health Bureau (MCHB)

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**Within the  
Administration for  
Children and Families  
(ACF):**

Administration on Children, Youth and Families (ACYF)  
Administration for Native Americans (ANA)  
Administration on Developmental Disabilities (ADD)

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**Elsewhere in HHS:**

Health Care Financing Administration  
Social Security Administration

The efforts of these various agencies come together in order to carry out the goals of better understanding the conditions and service needs of drug abusing mothers and their children, developing effective interventions to meet those needs, and financing services for those in need.



# RESEARCH ON DRUG ABUSING WOMEN AND THEIR CHILDREN

## RESEARCH - PROBLEM AND APPROACH

The challenge to research is to design instruments and develop the methodologies to determine the nature, extent, and consequences of maternal drug abuse; enhance our understanding of the basic mechanisms of action of drugs and their effects when they cross the placenta; and to develop and test new prevention and treatment strategies which address the myriad of problems facing drug abusing women and their children. To determine the incidence and prevalence of maternal drug abuse and its developmental, psychological, and physical effects, NIDA is supporting research to develop and improve approaches for identifying pregnant women and neonates at risk; provide estimates of the prevalence of drug use during pregnancy and the number of infants exposed to drugs during pregnancy; and determine the effects of drug exposure on a variety of outcome measures. Research on the optimal combination of treatment and other services, as well as settings in which such services are provided will permit us to make recommendations regarding model treatment strategies and options for providing such services. NIDA's basic research program is increasing the understanding of the effects of drug abuse on mothers and their offspring and laying the foundation for the development of medications appropriate to this population.

## NATURE AND EXTENT

In addition to the National Household Survey on Drug Abuse, the recently initiated National Health and Pregnancy Survey, and other studies mentioned in the introduction to this paper, two National Institute on Drug Abuse (NIDA) surveys have gathered data on the services available to pregnant women and client characteristics. The National Drug and Alcoholism Treatment Unit Survey collects facility-level data on all drug and alcohol treatment programs in the United States. Beginning in 1990, the survey included questions on policy with regard to admitting pregnant addicts to treatment programs and the number and type of pregnant addicts in treatment. These data are being analyzed. The Drug Services Research Survey (DSRS) has gathered data from a national sample of 1000 treatment programs and included questions on policy regarding treatment of pregnant women and pregnancy status of clients. Data analyses are continuing.

In addition, NIDA has provided supplementary funding to several national surveys sponsored by other Federal agencies. These include the National Maternal and Infant Health Survey, sponsored by the CDC/National Center for Health Statistics, which involved a national probability sample of women who had a **live birth, stillbirth, or infant death** in the past year in the United States. Drug abuse questions were asked at the time of the survey and a follow-up survey of participating mothers was recently conducted. Information on the use of tobacco, marijuana, and cocaine during pregnancy was collected and

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further information on the child was collected at two years. These data will be analyzed for the prevalence of drug use during pregnancy and for the apparent effect on child development through two years of age. In the National Longitudinal Survey of Labor Market Experience of Youth, a survey of the youth through adults in the labor market, conducted by the Department of Labor with NIDA collaboration, data have been, and will continue to be, collected on the frequency of marijuana and cocaine use during pregnancy by an estimated 1,400 women who have given birth since 1987. This cohort is being followed and information about child development is being gathered and analyzed. Additionally, data are currently being analyzed from the National Survey of Family Growth regarding the prevalence of tranquilizers, stimulants, sedatives, cocaine and marijuana use during last pregnancy. These data were collected from approximately 10,000 women in their childbearing years.

Other HHS agencies are also concerned with the problem. The National Institute on Child Health and Human Development (NICHD) is funding four epidemiologic research grants which seek to determine the effect of drug use on reproduction. These include Dr. Jennie Kline at the New York State Psychiatric Institute who is investigating the Epidemiology of Early Reproductive Loss and Dr. Beth Mueller at the Hutchinson Cancer Research Center who is investigating the Epidemiology of Placenta Previa and Abruptio Placenta. Although none of these studies focuses directly on drug use, all of them are examining it as a potential factor affecting reproduction. Dr. Denise Kandel at Columbia University, a NIDA grantee who is also funded by NICHD, has a grant focused directly on drug use in her epidemiology study: Pregnancy, Parenting and Drug Use.

The Office of the Assistant Secretary for Health has also contributed to this effort with 9 grants which seek to obtain information on drug abusing mothers who are referred to social service programs. Data from this study are not yet available. Several individual States (Rhode Island, New York, and Hawaii) are also conducting surveys of the epidemiology of maternal drug abuse.

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WHAT WE ARE  
LEARNING

The remainder of this chapter provides an overview of the research currently being conducted on the effects of maternal drug abuse prevention and treatment, and other service approaches being developed and evaluated for mothers, infants, and children.

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**Effects on Mother,  
Fetus and Child**

Drug abuse during pregnancy is associated with a number of obstetric and neonatal problems. Among maternal complications associated with drug use during pregnancy are premature deliveries, placental abruption, and hemorrhage. Fetal and neonatal consequences are also associated with the use of drugs. Some of the fetal/neonatal consequences reported include increased incidence of Sudden Infant Death Syndrome (SIDS), low birth weight infants (both because of prematurity and small for gestational age infants), and infants with small heads, neonatal seizures, cerebral infarction, and rare urogenital birth defects. Additionally, cocaine-exposed babies are reported to be especially difficult to nurture, irritable, and unresponsive. Because these are non-systematic reports, researchers are attempting to learn more about the physical and behavioral effects of drugs on the mother, fetus, and child and the reasons for these effects.

Some of the effects of drugs on the infants are subtle and difficult to quantify. In a NIDA-funded longitudinal study, Dr. Ira Chasnoff has reported that 2-year old infants exposed in-utero to cocaine had poor concentration, had difficulty in interacting with other children, and were unable to cope in an unstructured environment. He suggests that specially trained teachers and others (e.g., social workers) may be needed to work with these children when they reach school age and that more sensitive instruments need to be developed to measure the extent of developmental deficits. In this longitudinal study, older children are now being assessed to determine the long-term and delayed effects of in-utero cocaine exposure on their neurodevelopment.

In a related ongoing investigation, Dr. Emmalee Bandstra at the University of Miami is conducting a 5-year study of in-utero cocaine exposure/use during pregnancy, using black women of low socioeconomic status. She is examining the neurodevelopmental outcomes in the infants. In a similar study, Dr. Hallam Hurt at Albert Einstein Medical Center, Philadelphia, is conducting a 3-year study, In-utero Cocaine Exposure: Long-term Effects on Infants, using black, Hispanic and white pregnant women who used cocaine during pregnancy. She also is examining developmental outcomes in relation to the amount and duration of drug use. Dr. Fonda Eyler is investigating medical and neurodevelopmental outcomes associated with prenatal cocaine exposure in a rural population in Florida. Data are collected during each trimester of pregnancy, at delivery, and at multiple points during the first three years of life.

Dr. Ann Streissguth at the University of Washington, Seattle, Washington, is conducting a 5-year study entitled, Cocaine: Pregnancy Use and Offspring Development. Using 500 white, middle class pregnant women/infant pairs, she is examining the neurobehavioral correlates of maternal cocaine use and

the biobehavioral/cognitive development of their neonates until they are 26 months old. The team is measuring and recording the following parameters: sucking, recognition memory, mental and motor skills development, language, memory, and intelligence development. No significant findings are yet available with regard to maternal or neonatal effects. However, a few observations deserve mention: (a) it is difficult to enroll cocaine-using pregnant women in research studies without substantial monetary incentives; and (b) in a small pilot study, only 79 percent (41/52) of the self-reporting mothers and 1 of 10 (10 percent) infants born to self-reporting cocaine using mothers were identified by hair analysis using Baumgartners radioimmunoassay. About 6 percent (4/66) of the women were identified as positive for cocaine use while they had denied its use during pregnancy suggesting significant limitations of the method.

Dr. Nancy Day of the University of Pittsburgh is conducting a 5-year study, Marijuana Use and Pregnancy, a longitudinal study examining the effects of marijuana use during pregnancy on the offspring of 564 pregnant women (black and white, primarily in a low socioeconomic status). The following parameters are being recorded and measured: neonatal birthweight, growth of the neonate/infant, morphological abnormalities, neurodevelopment of the neonate by Brazelton's and Bayley's tests, language development, gross and fine motor skills, attention deficits, memory effects, and EEG/sleep effects. Mothers are being examined during the 4th and 8th months of pregnancy, and neonates/children at 8, 18, 36 and 72 months after birth. Dr. Day reports that 2-4 year old children exposed in-utero to marijuana have disturbed sleep patterns. Older children are being assessed to see if these effects still persist beyond the age of 4 years.

Dr. Peter Fried of Carleton University, Ottawa, Canada is conducting the study, Prenatal Cannabis and Cigarette Exposure: Long-term Effects, using 250 white middle class Canadian women and their infants, examining the long-term effects of prenatal marijuana and cigarette use on the mother and her offspring. The research team is measuring and recording the morphological neurodevelopmental effects on the neonate and growing child until 6 years of age, including body state alterations, fine motor abilities, visual and auditory functioning, attention deficits, cognitive performance, verbal skills, sensory skills, kinesthetic functioning, memory, intelligence, and academic readiness. In preliminary analyses of the data collected so far, Dr. Fried reports that neurodevelopment (cognition and memory) is impaired in the 4-year old children who were exposed in-utero to marijuana. Older children are now being assessed to determine long-term and delayed effects on neurodevelopment.

The National Institute on Child Health and Human Development (NICHD) also sponsors research on this topic but primarily in the area of licit drugs. For example, in a Center grant a group of investigators is studying the relationship among maternal tobacco smoking, chronic hypoxia, and fetal growth. Two contracts are focused on the effects of smoking by pregnant women and an intramural project is addressing the same subject. NICHD is collaborating with NIDA, OTI, and ACF in a five-year, multi-site research project on perinatal drug exposure and child and family outcome. Longitudinal evaluations will be

performed, including standard outcome measures as well as a number of newer methods of assessing neurodevelopmental and social function. The project will permit examination of the reliability and validity of potentially more sensitive developmental outcome measures. In addition, the study will assess a broad range of the life circumstances of the children, including substandard living arrangements, contacts with the child welfare system and community service providers, and contacts with drug treatment programs.

In addition, the Senate Appropriations set aside \$2 million in FY 1991 for NICHD to analyze the biomedical and behavioral effects of drug abuse during pregnancy. NICHD will examine what is known, what remains to be learned, and the feasibility of obtaining answers to remaining research questions. Their report is complete and is undergoing internal review.

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**Biological Mechanisms  
Underlying Drug  
Addiction/  
Developmental Effects**

More than a decade has passed since the demonstration that infants born to women addicted to narcotics or alcohol undergo a characteristic withdrawal syndrome. To guide clinical management of the newborn and developmental assessment and intervention procedures to prevent or ameliorate developmental delays and disabilities in these children, one has to understand the underlying mechanisms of action of drugs of abuse. In order to understand the biological mechanisms underlying drug effects during pregnancy, research is being conducted in the areas of neural mechanisms, endocrine function, genetics, physiological function, and pharmacokinetics/pharmacodynamics.

Numerous experimental studies have demonstrated developmental and behavioral abnormalities with a variety of psychoactive drugs. For example, offspring of benzodiazepine-exposed mothers exhibit deficits in motor activity and exploratory behavior soon after birth and in adulthood (Simmons et al., 1984; Livezey et al., 1986; Lauer et al. 1987). Other drugs, such as methadone, marijuana/THC, and barbiturates, also cause delays in the development of reflexes, hyperactivity and learning impairments in the prenatally-exposed animals (Review-Brown and Fishman, 1984). Recent neurobehavioral studies indicate that fetal exposure to cocaine decreases learning and memory in an appetitive conditioning paradigm, however delays in development of righting reflex, cliff avoidance and startle responses are marginal at best. (Henderson and McMillen, 1988; Moodey et al., 1988; Spear et al., 1989; Riley et al., 1991 a,b). Another study demonstrates that the combination of cocaine plus alcohol, the most common drug combination among abusers, has a greater effect on pregnancy outcomes in the rat than either drug alone (Church et al., 1988). Prenatal exposure to both drugs also appears to produce synergistic decrements in learning paradigms and locomotor activity in the offspring (Richardson and Verhage, 1988).

Ever since the discovery of endogenous opioids and their receptors in neural tissues, the question has been asked about whether these endogenous substances influence the development of the brain and, thereby, behavior. Recent experimental studies report that during early development,

endogenous opioids and their receptors modulate neuronal differentiation and brain growth (Gibson and Vernadakis, 1983). In another study, administration of an endogenously occurring opioid compound, met-enkephalin, to neonatal animals was found to facilitate learning behavior (Kastin et al., 1980). Other researchers (Zagon and McLaughlin, 1986; Review-Thadani, 1989) have examined the gross effects of endogenous opioids on various growth indices by administering an opiate antagonist, naltrexone, to rat pups. Depending on the dose of naltrexone used, an increase or decrease in weights and behavioral parameter was observed. Thus, it is possible that dysfunction of endogenous opioid systems during an early phase of development of the nervous system may cause or increase the risk of neurobehavioral abnormalities in children exposed to opiates perinatally.

A second line of research that is being pursued is to determine whether disrupted endocrine function might contribute to the disturbances of somatic and behavioral development following perinatal opiate addiction (Bero and Kuhn, 1989a,b; Review-Thadani, 1989). Transient but profound changes in various hormone levels have been observed in opiate exposed infants at birth. The researchers also reported that the opioid receptor subtypes develop at different rates and that the responses of these systems depend upon the relative timing of the treatment regimen and the functional development of the particular opioid system. These data suggest that endogenous opioids may have a potential role in the regulation of endocrine functions and the disturbance in these systems may contribute to abnormal behavioral patterns.

Virtually no information is available on the effects of cocaine on developing neuroendocrine functions. A recent study has demonstrated deficits as adults in reproductive endocrine functions and in sex related behavior in male offspring exposed to cocaine prenatally, but not in females. Significant decreases were also observed in thymus weight in adult cocaine-exposed male offspring suggesting the potential possibility of altered immune function in these animals due to early drug exposure. All these findings indicate that exposure to substances of abuse during the developing period produces disturbances in endocrine function. However, the mechanisms underlying these neuroendocrine dysfunctions is poorly understood.

With our recent knowledge that most of morphogenetic processes (e.g., cell proliferation, migration) occur during the first 2-3 years of human life, even a small change in neural network connection could alter the function of one or more physiological systems. A recent study by Dow-Edwards and her associate (1988) has demonstrated that in the neonatal rat, cocaine administration during the first 10 days of life can have central effects such as altered cerebral glucose utilization in the limbic, motor, and sensory systems which lasts for up to two months after cocaine was given. These studies also showed that females may be more sensitive to cocaine exposure than male rats.

Drug effects on the developing organism are in part dependent on the activity and retention of the drug in the fetus. Drugs such as cocaine, heroin, PCP and marijuana all cross the placental barrier. Recent studies in laboratory animals report that the concentration of PCP in fetal blood and in neonatal brain were

higher than found in maternal blood suggesting a possibility of continued disruption of neuronal and behavioral development postnatally (Ahmad et al., 1987; Pechnick et al., 1989).

Other preliminary findings suggest that in rats, pregnancy decreases the tissue levels of cocaine. Lower plasma and tissue cocaine concentrations observed in pregnant animals versus nonpregnant animals were thought to be due to a greater volume of distribution and higher plasma ChE activity as well as due to increased tissue uptake of cocaine. Also, there is a decrease in the placental transfer of cocaine, which could be due, in part, to a severe reduction in the placental blood flow induced by cocaine. In addition, they have observed that the effects of acute cocaine exposure is greater in the newborn rat than in the nonpregnant adult female rat. Although cocaine concentrations reached their peak levels at the same time, the decline in cocaine levels is more rapid in adults than in newborns. These differences in cocaine levels demonstrate one reason why young babies are very susceptible to cocaine toxicities. (Morishima, et al in press, 1991)

Information regarding the consequences of paternal drug abuse on the offspring was virtually nonexistent until recently. Cocaine use by men has been reported to reduce sperm count and induce sperm dysmorphology. Dr. Theodore Cicero and his associates (1991) have examined recently the effects of morphine administration just prior to and during puberty in the sexual maturation of male rats and the development of their subsequent male progeny. Their results indicate that the relatively mild exposure to morphine led to pronounced but transient alterations in a number of reproductive parameters associated with puberty and sexual maturation. The data from progeny studies show altered reproductive hormone profiles in the male offspring of the morphine treated rats when compared to the offspring of untreated rats.

In contrast, no alterations were observed in reproductive endocrine parameters in adult female offspring derived from morphine-treated males (and non-exposed drug female rats). These findings are important as they show long-term, selective and gender specific effects on endocrine function in the offspring following paternal drug use. That is, males are modestly affected while no effects have been observed in females of paternally opiate treated rats.

Recent reports of clinical studies show an increased incidence of cardiac anomalies in infants who were exposed to cocaine in utero. The cardiac dysfunctions seen in these infants include changes in cardiac output, stroke volume and arterial pressure, ventricular and electrocardiographic abnormalities. However, to date, it is not known what impact these changes would have on the cardiac development and function of these individuals.

Studies in animals have shown cocaine induced changes in the fetal cardiovascular system. Increases in fetal heart rate and blood pressure with concomitant decreases in arterial PO<sub>2</sub> were observed following maternal administration of cocaine. Direct administration of cocaine to the fetus also elevated heart rate and blood pressure but no change was observed in arterial

PO2 suggesting that the fetal cardiac effects are due to cocaine's direct and indirect actions. Direct effects are caused via maternal-fetal transfer of cocaine and its metabolites while indirect actions could be due to fetal hypoxemia induced by vasoconstriction of uterine vasculature.

In addition, the cardiovascular system in pregnant females appeared to be more sensitive to cocaine than in the non-pregnant state and progesterone appeared to contribute to this amplified cocaine response. Thus, future research will focus on the evaluation of the extent of structural and physiological cardiovascular malformations and the underlying mechanisms including the role of pregnancy hormone(s) following prenatal cocaine exposure.

By understanding the mechanisms underlying the life-threatening cardiovascular responses following cocaine use, we may be able to develop therapeutic approaches to reduce or prevent cardiotoxic effects due to cocaine or other substances of abuse.

The experimental data are beginning to show that exposure to drugs during the developing period can have adverse effects on the growth and development of the brain and may also cause disturbances in neuroendocrine functions. However, further studies are needed to define cellular and molecular mechanisms for these effects.

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## **Treatment and Prevention**

Weighing less than 5 1/2 pounds at birth and being born before the 37th week of gestation are, because of their association with infant mortality and morbidity, perhaps the gravest consequence of prenatal exposure to drugs. Low birthweight babies who survive are twice as likely to suffer from such ailments as cerebral palsy, chronic lung problems, epilepsy, delayed speech, blindness and mental retardation. Treatment of the infant may help to correct or compensate for the immediate problems associated with low birthweight and prematurity. Yet the cost of care is very high and survivors may have moderate to severe disabilities. When low birthweight and neurobehavioral abnormalities are the result of maternal drug abuse the problem is compounded; mothers who continue to use drugs may not be able or willing to provide the care required for such difficult infants. Thus, it is far more cost effective, as well as physically beneficial, to provide drug abuse treatment, prenatal care, and health services to the mother before the baby is born than to wait until after the birth to try to deal with the problem.

Not all pregnant women who seek treatment receive it and, of those who do, not all receive appropriate treatment tailored to their special needs. To address this problem, NIDA is supporting 20 treatment research demonstration grants designed to evaluate the effectiveness of various strategies for improving enrollment, retention and outcome in treating pregnant women and mothers with children. These carefully controlled clinical research demonstration studies are designed to investigate the direct and interactive effects and the short-term as well as long-term effectiveness of

comprehensive drug abuse treatment programs based in a variety of settings (e.g. hospitals, outpatient clinics, and residential facilities). In addition to drug abuse treatment, such programs may provide a broad range of other social and health care services for drug abusing women and their children throughout the prenatal and postnatal periods, including detoxification or methadone maintenance as well as general medical care, psychotherapy, crisis counseling, social support, and vocational or educational training, where appropriate. When the results of this research demonstration program have been analyzed, it will be possible to make recommendations regarding model drug treatment strategies and alternatives for drug abusing pregnant women and to provide technical assistance to communities trying to implement such programs.

Other NIDA-supported regular research grants also deal with prevention and treatment. A long-term NIDA grant at Jefferson Medical College in Philadelphia (Finnegan et al.) has evaluated outcomes of, and provided treatment to, drug-exposed infants for many years. In earlier years, Dr. Finnegan characterized the neonatal abstinence syndrome (NAS) of babies born to narcotic-addicted mothers and delineated treatment for such babies. Sixty to ninety percent of babies born to mothers with a recent history of narcotic abuse suffer from this syndrome, which is characterized by inconsolable crying, irregular sleep patterns, tremors, excessive muscle tone and hyperactive reflexes, poor feeding, gastrointestinal distress, and abnormal respiration. When left untreated, the syndrome may lead to seizures and death. Treatment involves drug therapy and supportive care, including swaddling tightly and frequent feeding. Hospital stay may extend from 6 days to 8 weeks, with some symptoms persisting for months. The Jefferson Medical College study is currently focusing on child outcome after cocaine use and treatment of these infants. These babies are difficult, suffer from hyperirritability, do not like being held, are hypersensitive to movement, have abnormally acute hearing and have difficulty focusing. It is not yet clear whether these anomalies are due to withdrawal from the drug or due to the direct effect of the drug on the development of the infants nervous system. However, it is clear that these symptoms, along with inconsolable crying, can disrupt even the best, normal parent-child relationship, noting that frequently the mothers of these children are not normal but themselves disrupted. The parents of such children need to know how to limit overstimulation of the infants nervous system as well as techniques for calming. Such babies require extraordinary attention from their caretakers. Generally the symptoms interfere with the child's ability to learn and interact with people. The Jefferson Medical College group will continue to study and follow these infants during their first two years of growth.

Even those who accuse treatment programs of discriminating against pregnant addicts acknowledge that there is some medical uncertainty about what constitutes the optimal medical management of addiction during pregnancy. The need to develop new medications for the treatment of drug addiction has led to the establishment of a NIDA program in medications development. This program will include evaluation of potential treatment drugs for their effect on the fetus and is in the process of developing a clinical program to evaluate treatment drugs in pregnant women. These efforts will

include, in the future, attempts to develop treatment drugs which will not cross the placental barrier. However, considerable basic research must be done before such a development is practical.

Through two demonstration programs the Administration on Children and Families is seeking to develop models of providing services to children of substance abusers, The Emergency Child Abuse and Neglect Prevention Program provides funds to improve the delivery of services to children whose parents are substance abusers and who are at risk of child abuse and neglect, and the Abandoned Infants Assistance Program (1) demonstrates how to prevent the abandonment of drug-affected infants and toddlers; (2) identifies and addresses the social service needs of drug-exposed and HIV+ infants and their families; and (3) reunifies these children with their biological families, when possible, and/or places the children in foster care.

In related endeavors, the Assistant Secretary for Planning and Evaluation has been conducting policy research to identify and describe promising approaches for serving drug-exposed children and their families and to describe their needs with respect to comprehensive drug treatment programs. Two additional projects will research the Medicaid expenditures on behalf of drug-exposed children in California and will develop materials for teachers and child development professionals about the educational needs of drug-exposed children.

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## **Pediatric AIDS**

Over eighty percent of all pediatric AIDS cases are attributed to transmission from mothers with/at risk for HIV infection. Intravenous (IV) drug abuse is a major contributing factor in mother-to-child HIV transmission. Nearly three quarters of pediatric AIDS cases attributed to maternal transmission involve women who either used drugs intravenously or who had sexual partners who were IV drug users.

To date, specific evidence is lacking regarding the influence of cofactors such as type and pattern of maternal drug use on the probability of transmission as well as the symptoms and progress of HIV-related disease in children. Additional research is needed to determine drug modulation of HIV infection, neurologic impairment, and altered immunocompetence, as well as to develop accurate methods of early diagnosis of HIV in infants.

Preventing AIDS in children is, in large part, dependent on changing the drug use and sexual behavior of adults. NIDA is continuing its efforts to develop behavior change strategies for intravenous and other drug users to contain HIV infection. Efforts to combat resistance to change include involving communities, community-based training, research on risk taking and the development of technology to fight the spread of the virus. NIDA will also acquire data on innovative drug abuse and HIV prevention programs in other countries which may have implications for U.S. AIDS programs and policies.



A number of NIDA projects deal with AIDS risk to the children of IV drug users or their sexual partners. Several grants investigate the prevalence of HIV infection in pregnant IV drug users and seek to identify the rate of transmission of HIV from mother to child as well as the factors which influence that transmission. (e.g., Johnson, Craven, Rich). Several other grants study the effects of HIV on the immune system and on the growth and development of infants born to HIV-infected mothers. (Cowan, Krasinski, Andiman). Pahwa and Anday are conducting basic research on pediatric AIDS: the type of cells which distinguish between infected and uninfected infants and study of the brainstem sensory processing in cocaine-exposed neonates.

NIDA is supporting two large contracts dealing specifically with pregnant women and their children. The purpose of these demonstration research programs is to test the efficacy of a comprehensive AIDS prevention intervention with two groups of pregnant women: injection drug users and women who do not inject drugs themselves but whose sexual partners do. Interventions in which the woman participates by herself are being evaluated against similar interventions in which the woman and her significant other participates. Interventions include education and counseling on AIDS, drug abuse, pregnancy, and contraception; HIV testing; group prenatal and parenting skills classes; support groups; and a case management approach to the provision of services. The services are provided in conjunction with comprehensive gynecological and obstetric care. Critical support services, such as transportation and child care, are also provided. The projects have an extensive community outreach component to reach pregnant women who are suspected of using drugs or being the sexual partners of IV drug users but would not ordinarily avail themselves of treatment opportunity. Nyamathi also has a NIDA research grant to provide counseling to improve the coping responses of Black/Hispanic women at risk for HIV infection, including prostitutes and homeless women of childbearing age, and Landesman has a NICHD grant to survey HIV infection in drug and non-drug using women in New York.

The Maternal and Child Health Bureau (MCHB) of the Health Resources and Services Administration (HRSA) is supporting a large demonstration grant program to encourage the development of a network to demonstrate effective ways to prevent pediatric AIDS and to provide treatment and support for infants, children and youth with infection. The emphasis is on care delivery in ambulatory settings using a case management approach to reduce the amount of time spent in hospital settings. Although this effort is primarily service delivery, an evaluation of the program will provide insight into the process.

The Childrens Bureau, ACF, provides financial support to State and local governments and other non-profit agencies for research and demonstrations in the field of child welfare, particularly to address preventive and other specialized services, foster care, and family reunification or adoption. Within this program, funds have been authorized to assist the victims of drugs and HIV. These funds support innovative projects that demonstrate ways to meet the immediate non-medical needs of infants born to crack-cocaine using mothers and HIV infected children.

Taken together, these initiatives will identify areas for potential intervention and promote programs to minimize the spread of HIV infection among drug abusers and from drug abusers to their sexual partners and children. Moreover, with the advent of AZT, other medications for HIV, and treatment for associated medical problems, individuals are able to maintain functioning for a longer period of time. This, in itself, raises issues of prevention of further spread of the disease and interventions to reduce high-risk sexual and drug-related risk behaviors.

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### **Other Related Efforts**

Two NIDA technical reviews were held in the summer of 1990, one in Richmond, Virginia, in conjunction with the annual meeting of the Committee on Problems of Drug Dependence (CPDD) and the other in Baltimore, Maryland, in conjunction with the National Institute on Child Health and Human Development, one month later. The purpose of the meetings was to gather together research leaders in the field in order to review the state-of-the-art in this area, to discuss problems and solutions in this type of research, to set a research agenda for the future, and to stimulate researchers to focus their attention on this vital area of investigation. The first meeting focused on methodological issues in controlled studies on the effects of prenatal drugs while the second focused on epidemiological, prevention, and treatment research on the effects of drug exposure on women and children. As a result of these meetings, two NIDA monographs on prenatal drug use research will be published, and a research grant announcement will be issued.

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### **REMAINING CHALLENGES**

The reality is that a large number of women of child-bearing age are involved in substance abuse, many of them in intravenous drug use. As a result, not only they themselves but also the children that they bear are tragically affected. This puts an increasing burden on society for the care and education of these children, particularly in light of the AIDS epidemic.

The best resolution to the problem is to prevent and/or treat drug abuse before these women get pregnant or, at the very least, while they are pregnant in order to minimize fetal drug exposure. There is a critical need for further research regarding the size and type of the problem and development of optimum approaches to prevention and treatment. This is being addressed by numerous epidemiological efforts to delineate the problem, by research on drug abuse sequelae and prevention approaches and by a large number of research demonstration grants to develop models for providing effective drug abuse treatment. A medications development program will seek to develop better treatment drugs and how to develop drugs which do not cross the placental barrier. Further study of the mechanisms whereby drugs of abuse produce their effects on the fetus will also provide insight for the development of better intervention strategies.

# PREVENTING AND TREATING DRUG ABUSE IN PREGNANT AND PARENTING WOMEN

## PREVENTION AND TREATMENT- PROBLEM AND APPROACH

The many negative health and social consequences of women, infants and children exposed to alcohol and other drugs demands that such abuse be prevented to the extent possible and treated in those for whom prevention is too late or unsuccessful. The challenge for HHS and for State, local, and private agencies supporting substance abuse prevention and treatment activities has been to tailor appropriate and effective prevention, early intervention, and treatment strategies for high risk groups. At the Federal level, HHS is working to develop, document, and disseminate effective models of substance abuse prevention and treatment.

Prevention may be construed in several ways. Primary prevention is aimed at avoiding substance abuse in the first place, by dissuading a nonuser from experimenting with alcohol and other substances, including tobacco and illicit drugs (Davis, 1988). Narrowly defined, prevention refers to primary prevention. However, prevention has traditionally also been defined in broader terms, covering the entire continuum of care (White Paper, 1975). Secondary prevention aims to deter the occasional user from further substance abuse, by pursuing early intervention strategies; and tertiary prevention includes treatment, aftercare, and rehabilitation efforts aimed at substance abusers and their children. It is also serving to prevent further deterioration of the current situation as well as to prevent possible alcohol and other drug exposure to future fetuses and infants. Comprehensive prevention programs may, therefore, include all aspects of primary, secondary, and tertiary prevention.

Many women have more severe drug abuse problems than can be addressed through primary or secondary prevention -they have become addicted. Addiction is a chronic, relapsing disorder that is frequently accompanied by a host of physical, psychological, and sociological problems. The incidence of addiction-related physical and, mental health, as well as social and emotional disorders is especially high in drug-dependent women (as opposed to men), who typically are without family and community support systems or economic resources, and whose own family histories often include abuse and/or addiction. Treatment programs are often unprepared to meet the particular needs of women with children, including child care and development, parenting skills training and child abuse and neglect prevention, and they rarely address the consequences of the addicted womens frequent histories of parental and spousal abuse.

A number of agencies within the Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) play important roles in prevention, early

intervention and treatment. These include OSAP, OTI and NIDA as well as NIAAA.

Problems of pregnant women and mothers exposed to alcohol and other drugs have been of particular concern to OSAP which in collaboration with HRSA's Maternal and Child Health Bureau has administered a program of demonstration grants since 1987 to support substance abuse prevention (broadly defined, but concentrating on primary and secondary prevention) and related activities within this population. These activities have included:

- ◆ Demonstration grants, to develop innovative approaches to prevention, education, and treatment;
- ◆ Technical and evaluation assistance, to support the grants as well as other non-Federal projects;
- ◆ Learning community activities involving the exchange of ideas and knowledge;
- ◆ Third party evaluation of the Pregnant and Postpartum Women and Their Infants program as a whole, to develop lessons learned at the Federal level; and
- ◆ A national perinatal addiction prevention resource center, to assure continued development of new knowledge and public debate on the subject.

The Office for Treatment Improvement administers the Alcohol, Drug Abuse, and Mental Health Services Block Grant (which contains a 10% set aside for womens services) and operates a number of demonstration programs that seek to test model drug abuse treatment programs for particular populations or in particular settings. In the case of the Waiting Period Reduction Grants Program, providers serving pregnant and postpartum women and their children received preferential treatment for much of the FY 1990 funding, per Congressional specifications.

In addition to its programmatic activities, OTI in conjunction with NIDA is presently developing a series of treatment guidelines that cover pregnant women and substance exposed infants. These guidelines will focus not only on effective treatment methodologies, but also on effective methods of outreach. These guidelines are scheduled for completion and distribution to States and Territories during 1992.

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## WHAT WE ARE LEARNING

A great deal has been learned about drug abuse prevention and treatment activities, in particular with respect to women. This section will first discuss primary prevention and systemic needs, while later portions of the chapter will discuss particular prevention and treatment service delivery needs of pregnant and parenting women and their children exposed to alcohol and other drugs.

Primary prevention must focus on: a) high-risk individuals; b) their social relationships; and c) the environment. This interactive approach to primary prevention reflects a public health model in which the individual alone is not the only target of an effective intervention. Prevention must include both system-level and patient-centered strategies and their interaction.

As but one example of the importance of the social relationships, there is an increasing realization that social connections are an essential part of women's lives. According to this view, women who are denied the opportunity to develop healthy connections—as daughters, parents, partners, and friends—may be those that are most vulnerable to substance abuse. Such relationships may play a much more important part in the lives of women than in the lives of men; healthy relationships are empowering and, among other outcomes, lead to the establishment of even more connections. Thus, substance abuse prevention strategies must include strategies aimed at these significant others, and not just at the individual women in need.

The complete list of risk factors associated with potential substance abuse by an individual include: a) factors totally confined to the individual-personal factors, b) factors involving the individual's relationship with other individuals—interpersonal factors; and c) factors that deal with the environment—extrapersonal factors. Prevention must work on all of these forces, and not only the at-risk individual.

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### **Substance Abuse Prevention as One Part of Health Promotion**

The potential payoffs from a primary prevention approach to substance abuse among pregnant women are related to the fact that such an approach can be integrated with other related health promotion efforts. Regional campaigns, such as the Kaiser Foundation's Southern Strategy have deliberately incorporated substance abuse prevention as part of their broader health promotion goals. Similarly, many other projects across the country have sought to increase participation in prenatal care programs, to produce healthier women, healthier births, and healthier infants—including, but not limited to, the avoidance of the effects of substance abuse. As a result, the costs of substance abuse prevention can be embedded in the costs of better health promotion more generally.

A primary prevention approach also can cover substance abuse in conjunction with other types of mental and physical problems. Such approaches can work toward preventing not only individual problems, but also dually-diagnosed illnesses. Specific prevention tactics, such as the provision of nurse visitation to pregnant women in their homes, can cover all of these issues and have been shown to be effective. For instance, an evaluation of a program in which people were randomly assigned to four different treatment conditions, including the provision of nurse visitation, showed that home visits produced significant reductions in smoking and ultimately in preterm deliveries.

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### **Preventing Intergenerational Substance Abuse**

Finally, successful prevention efforts with pregnant women can serve as a window of opportunity to break the intergenerational cycle of substance abuse within families. The vast majority of substance abusing pregnant women have parents who themselves were substance abusers, a phenomenon that has been especially well documented with regard to smoking and alcoholism. Individuals raised under such conditions have a high probability of becoming substance abusers, carrying the problem into the next generation. Successful prevention could be an important way of breaking this undesirable cycle.

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### **The Importance of Culturally-Sensitive Programming & Evaluation**

Because primary prevention is embedded in changes to the social and broader environment, successful efforts must reflect culturally-sensitive designs and implementation. Birth is unlike any other single human event in its intertwining with culture, with family ritual, and with personal beliefs. As a result, prevention programs must understand the cultural and ethnic backgrounds of the persons being served, in order to be effective.

Similarly, evaluations of primary prevention programs must reflect a cultural competence. The use of culture-appropriate methods and instruments is but the basic prerequisite for demonstrating such cultural competence. The competence is to be regarded as a skill demanded of all evaluators, similar to the other technical skills expected of them.

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### **Professional Training**

Professionals who work with drug-addicted women and drug-exposed children have specific training needs. The training usually focuses on helping professionals in the substance abuse field to become more aware of special social and health problems confronting pregnant women and women with other children. The training also focuses on helping health and social service professionals to become more aware of special social and behavioral problems of pregnant and parenting women and children addicted to substances. Each professional must learn to recognize substance abuse and identify the medical and social service needs of drug-exposed babies and their families.

The desired outcomes of such training go far beyond the exchange of technical information. Ultimately the goal is to eliminate the traditional barriers that exist between the provision of medical care and the treatment and prevention of substance abuse, including the diminution of negative attitudes among caregivers with regard to pregnant substance abusers. The end result would therefore be increased availability and accessibility of appropriate preventive services.

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**Management Practices**

Several States and local governments have established management practices to improve tracking and supervision of child welfare cases involving drug exposure. These practices include automated central registries, special drug units for assessing and serving drug-exposed babies reported to child protective service agencies, and expedited movement through the legal system.

More broadly, prenatal care also can be enhanced by revising policies and practices that shape the way services are provided. Improvements include expediting registration procedures, providing interpreters, shortening waiting periods for pregnant women to receive treatment, shortening the time spent in waiting rooms, offering child care and transportation, and monitoring staff courtesy.

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**Increasing System Capacity**

In many geographic areas, pregnant women, and in particular drug abusing pregnant women, are unable to receive the drug treatment and prenatal care services they need. There may be few private practitioners, publicly financed facilities, or local providers willing to accept Medicaid patients. In these areas, initiatives must be undertaken to increase system capacity for serving low-income women, by expanding existing clinics, opening new ones, or paying private providers to care for uninsured women.

Once the infant is born, responding to the infant's medical and developmental needs adds to the complexity of service delivery. Services for mother and infant are often most intense within the first 24 to 48 hours after birth. However, the infant may have to be followed for many years. During this period, services must provide: routine pediatric exams at appropriate intervals; developmental assessments for the early detection of impairments; and referral to specialized programs if necessary.

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**Interagency Coordination**

Interagency coordination is necessary to ensure that services to families are available and accessible, but not duplicated. Lack of coordination among service providers is a major problem case managers face in offering multiple services to drug-affected families. There are effective leaders in many communities who serve as brokers to ensure that services are coordinated in an appropriate manner. A good example of this is the Juvenile and Family Court Judges, who may mandate that providers deliver the necessary services.

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**SERVICE DELIVERY  
NEEDS IN DRUG ABUSE  
TREATMENT**

Conventional wisdom seems to hold that treatment for drug abuse is largely ineffective. However, when programs are properly tailored for specific populations they can attain high retention and success rates. This demonstrates that treatment can work.

Adapting services to the particular population is especially important for pregnant women and women with children, who bring unique needs to treatment. For this patient population, treatment outcome is best assured through provision of a comprehensive array of treatment services that address each woman's medical, psychological, emotional and practical needs. Figure 1 on the following page describes a schema which utilizes a family-centered, comprehensive approach for the treatment of drug dependency in the perinatal period, as well as after care services. It is presented here to illustrate the variety of needs encountered in this population, and may be adapted to specific program circumstances. The schema provides for individual and interpersonal counseling in either an outpatient or residential setting, coupled with outreach services. The schema encompasses five specific areas of need which are all significant in the recovery process for the dependent pregnant and postpartum woman and her infant or child:

- ◆ biological/physiological,
- ◆ psychological/behavioral/cognitive,
- ◆ socio/cultural/demographic,
- ◆ mother-infant development, and
- ◆ early childhood development.

The schema may be implemented in a variety of settings, to include: outpatient methadone maintenance, outpatient drug free, inpatient co-morbidity units (28 days), short term residential (4-6 months), long term residential (12-18 months), and self help groups. Because addiction is a chronic, relapsing disease for which effective treatment requires sustained intervention along a continuum of care, a combination of these treatment settings is usually required for successful recovery. Whatever the setting(s), treatment for this population must be put into the context of a woman's reality. This means that programs must include facilities and services for the child or children, as well as the mother.

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### **Outreach**

The schema emphasizes outreach services, which should form an integral part of any treatment approach for this population. Aggressive outreach helps to get women and children to services they would not otherwise receive, and it encourages them to use available medical and social services. It is often difficult to attract drug dependent women into treatment. The responsibilities of motherhood, combined with the fear of reprisal from a spouse, a significant other or the community, serve to dissuade these women from seeking treatment. Employing outreach workers who are indigenous to the neighborhoods and the culture of dependent women tends to facilitate and encourage treatment seeking behavior. Indigenous workers can serve as a conduit between addicted women and a treatment facility. Outreach services are particularly helpful to pregnant substance abusers, who often do not have prenatal care. If transportation is available, and workers accompany the women, the likelihood of appropriate medical care and immediate intervention is increased.



Once the individual has been recruited, engagement and retention are the next challenges. All services must reduce stress and promote a bonding process between woman and program. Thus, such support services as drug-free housing, child care, transportation, supportive therapies, and skill building activities all contribute to overall health promotion while encouraging the bonding process. Figure 1 illustrates this comprehensive service schema.

Individual patients vary in the extent to which they suffer from deficits in the areas of need outlined in the schema. This observation holds true at the time the patient enters treatment and at various stages along the road to recovery. For this reason, each woman should be treated as an individual. Following admission for treatment, an individual treatment plan must be developed, based upon an assessment of the magnitude of the individuals addiction and addiction-related disorders.

Assessment is conducted with a purpose: to determine the nature of the clinical problem, the need for treatment, and the form of treatment that appears most appropriate for the given problem. Assessment is a dynamic process that is altered over time with the addition of new data. Treatment strategy is fluid as well, and as change occurs, reformulation of goals, re-assessment of variables, and altered interventions take place.

To some extent, the needs identified in the schema must be assessed and addressed in a hierarchical fashion. A woman who presents for treatment with an acute medical problem for example, must be stabilized before she will respond to other forms of intervention. By the same token, a woman who suffers from lack of appropriate shelter, food, and clothing, must be provided with these necessities before she will respond to other therapeutic measures.

In general, however, most drug dependent women, especially those in the lower socioeconomic brackets, will require some form of treatment in each of the areas of need specified in the schema, which are described more fully in the following text.

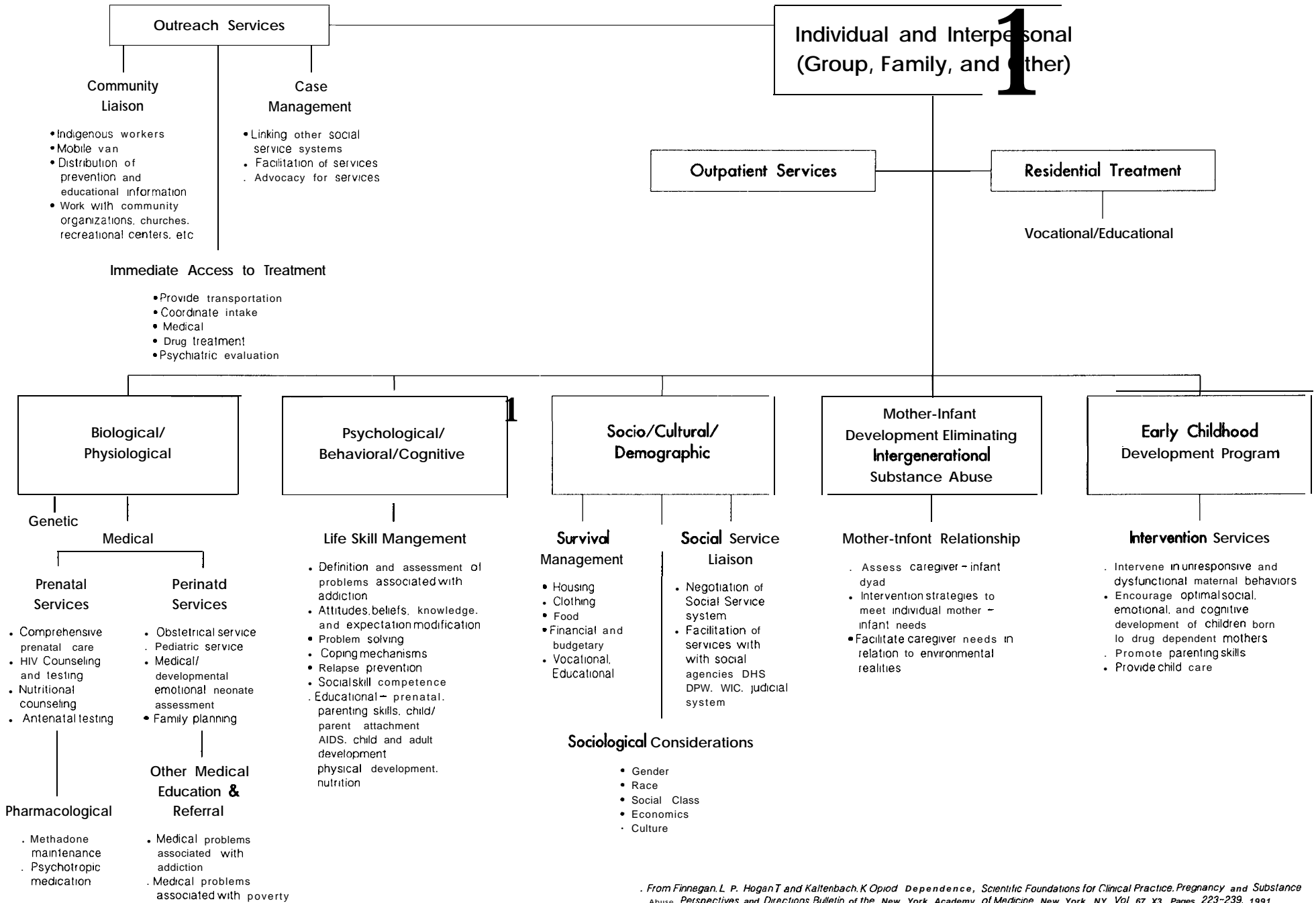
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### **Biological/Physiological**

The physical health problems encountered by the pregnant drug dependent mother are varied and complex. Medical complications abound due to the frequent use of unsterile needles. Drug dependent women tend to be active sexually, which increases the incidence of sexually transmitted diseases among this population. Moreover, poor living conditions and lack of proper nourishment and diet characteristic of these patients are conducive to infections and vitamin deficiencies. Table 1 lists medical complications common in drug dependent women.

Figure 1

# Family Center Schema for Treatment of Drug Dependency in the Perinatal Period and Aftercare



. From Finnegan, L. P. Hogan T and Kallenbach, K. *Opioid Dependence, Scientific Foundations for Clinical Practice, Pregnancy and Substance Abuse. Perspectives and Directions. Bulletin of the New York Academy of Medicine, New York, NY, Vol 67 X3, Pages 223-239, 1991*

Table 1

**MEDICAL COMPLICATIONS IN INTRAVENOUS HEROIN USERS**

Anemia (iron and folic acid deficiency)	Sexually Transmitted Diseases
Cellulitis	- Acquired Immune Deficiency Syndrome
Hepatitis	- Gonorrhea
Hypertension	- Herpes
Phlebitis	Tetanus
Pneumonia -acute and chronic	Tuberculosis
Poor Dental Hygiene	Urinary Tract infections
Septicemia	- Cystitis
Subacute Bacterial Endocarditis	- Pyelonephritis
	- Urethritis

Due to the frequent lack of prenatal care in women who are drug dependent, fetal loss is common. These women may frequently have pre-term birth and/or intrauterine growth retarded fetuses. Many factors contribute to poor fetal growth. Among them are intermittent intrauterine hypoxia, placental insufficiency and intermittent withdrawal of the mother and the fetus, leading to a need for more oxygen. The latter is frequently complicated by the concomitant use of other drugs such as nicotine and cocaine, which also decrease oxygen supply.

The most common obstetrical complication in women who are drug dependent and have no prenatal care is preterm birth. The incidence of low birth weight approaches 50 percent in these mothers. Table 2 lists a variety of obstetrical complications common in drug dependent women.

Table 2

**OBSTETRICAL COMPLICATIONS IN THE HEROIN DEPENDENT WOMAN**

Abortion	Placental Insufficiency
Abruptio Placenta	Preeclampsia
Amnionitis	Premature labor
Chorioamnionitis	Premature rupture of membranes
intrauterine fetal death	Postpartum hemorrhage
Intrauterine Growth Retardation	Septic thrombophlebitis

Infants born at term to drug dependent women may suffer from a variety of medical complications including those listed in Table 3. In both prematurely born and term infants, withdrawal from depressant drugs may occur. Significant withdrawal symptoms are generally seen in about 60 percent of the infants. These symptoms are listed in Table 4. Appropriate assessment and rapid treatment is essential so that infants may recover without incident. Infants exposed to cocaine have been found to be irritable and have poor

feeding patterns, but do not exhibit the exaggerated symptoms described above.

Table 3

**MEDICAL COMPLICATIONS IN INFANTS OF DRUG-DEPENDENT WOMEN**

Asphyxia neonatorum	Respiratory distress syndrome
Pneumonia	Hypoglycemia
Hypocalcemia	Hyperbilirubinemia
Intracranial hemorrhage	Intrauterine growth retardation
Meconium aspiration	Acquired immune deficiency syndrome

Table 4

**SYMPTOMS OF NARCOTIC WITHDRAWAL IN THE NEWBORN**

Hyperirritability - increased deep tendon reflexes - exaggerated Moro reflex - increased muscle tone - tremors - high-pitched cry
Increased rooting reflex
Uncoordinated and ineffectual sucking and swallowing reflexes
Loose stools
Tachypnea
Yawning
Sneezing
Mottling
Fever

Because these patients often present a host of complex medical problems, medical treatment for pregnant drug dependent women must encompass perinatal and pharmacological services and follow up, as well as medical education and referral including HIV testing and nutritional counseling. Drug dependent mothers should always deliver in a hospital where emergency services are readily available in case of complications in either the mother or the child. Infants born to drug dependent mothers are frequently small and will often require intensive care.

Methadone maintenance has proven to be an efficacious and safe pharmacological intervention for the treatment of pregnant opiate dependent women. Doses typically range from 10 to 90 milligrams, with a mean of 50 milligrams. Aside from the incidence of withdrawal symptoms in the neonate,

other complications resulting from use of this medication infrequently occur. If methadone is used appropriately, coupled with comprehensive care, it is possible to successfully decrease the complications of pregnancy, childbirth, and infant development.

Detoxification of the pregnant opiate dependent woman from methadone is not indicated under general circumstances. Doses should not be decreased, but should be provided at a level that provides comfort for the mother and decreases the chances of withdrawal of the mother and fetus. In the third trimester, many women will need an increase in methadone dose due to various physiological changes, including weight gain.

If a pregnant opiate addicted woman has specific medical complications such as hyperthyroidism or diabetes, appropriate medical consultation should be obtained with respect to methadone dosage. Generally, the pregnant opiate dependent woman can have a healthy pregnancy and a good gestational outcome when treatment encompasses current techniques utilized by perinatologists, together with methadone maintenance and other pharmacological treatment, coupled with psychosocial counseling, as indicated.

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## **Socio/Cultural/ Demographic**

Because of the many social and economic problems encountered by drug dependent women, it is usually necessary to case manage a wide array of practical services for several months before staff can focus on the treatment of psychological, behavioral and cognitive disorders. If housing, clothing and food needs go unattended, a woman will rarely respond to drug treatment. When provisions for consistent shelter, clothing, and food are secured, dramatic increases in initial recovery are likely to occur. By taking a good genetic history, the practitioner can frequently ascertain the background of the patient, which will lead to a clearer understanding of the factors that contributed to the addictive process in the patient. The treatment team must deal with providing a secure environment at entry, during, and after treatment so that each patient can stay in a healthy physical and psychological state.

Formal linkages between treatment providers and housing agencies and shelters are helpful in order to facilitate the availability of shelter. A clothing bank for patients and their children may also prove useful. One approach to this requirement is to open a small shop area, and have patient members of a recovery group oversee the operation, as well as generate donations, sort, wash, and tag clothing.

Outpatient facilities face slightly different practical requirements for patient welfare. It is not unusual for pregnant addicts to appear for treatment without having eaten for several days and without reliable means of transportation. Many times the combination of a nourishing meal and a way to return to the treatment center encourages attendance.

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Treatment approaches should be modified in order to account for gender, race, and culture-specific issues. Certain types of interactions in a treatment setting can impede participation on the part of women. In women only groups, for instance, the higher level socioeconomic status of some group members may frighten lower income women.

Drug dependent women frequently have a history of parental or spousal abuse. In the context of sexually mixed group therapy sessions, these women will tend not to communicate and will defer to males. Therefore, female only groups where women can express their fears and frustrations without fear of male retaliation are far more conducive to recovery. Programs often find groups most effective when participants make the rules of the group and staff serve only as facilitators. Groups can be successful in encouraging members to work out individual and interpersonal issues in a supportive environment.

Cultural norms often conflict with the recovery process. Language is an important mechanism in treatment, as are the cultural dynamics of families. An example is helpful here. Generally, if a woman is using illicit drugs, then her significant other is also. If a Hispanic woman reaches recovery, that recovery can be a threat to her partner, and the woman often has to choose between her partner and sobriety. If she chooses sobriety, the kinds of support she needs can differ from the support required by other women who have intact relationships.

For example, if she does not leave her partner but remains sober, she will need to develop skills that allow maintenance of recovery in a chaotic household. In this event, a network of neighbors and extended family will need to be developed. By contrast, if she leaves her partner, housing becomes a formidable issue. In shelters, there are also cultural and racial tensions that frighten women and children.

Treatment effectiveness is drastically reduced or impeded without a thorough understanding of the interactions between social, cultural, and demographic variables and their effect on the success of therapeutic interventions. Without attention to practical needs, attempts at assessment and intervention are frustrated. For this reason, social, cultural and demographic variables must be assessed and, to some extent, addressed, before psychological, behavioral, and cognitive needs can be met.

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**Psychological/  
Behavioral/Cognitive**

Sobriety is **only the initial step** in the recovery process. Behaviors related to drug intake are altered during sobriety, but in order to remain in recovery, other behaviors must be modified. It has been illustrated that women are often arrested developmentally at the age level of first drug use, which can interfere with traditional expectations of educational, cognitive, psychological, and vocational levels. To effect successful treatment outcomes, practitioners need to assess and concentrate on the exact level at which the patient is functioning. Once the assessment is complete, the patient can be assigned

developmentally appropriate tasks in order to expedite cognitive processes never utilized due to long term drug use.

The patient's coping mechanisms should be assessed and carefully monitored. Quite often when drug seeking behaviors are modified, there are no other coping mechanisms present. In this event, extensive staff time is required to support and create tasks that promote cultivation of necessary coping mechanisms.

A case study may be helpful to illustrate this point. After sobriety occurred, Jane a patient with a 28 year drug history, was found to have behaviors and cognitive ability at a developmental level of 10 years of age. After assessment, the treatment strategy involved intensive counseling in reading, writing and math skills. In addition, a focus on problem solving was utilized, which involved written assignments. After a six month period, Jane was performing algebraic equations, and there was a marked improvement in behavior, coping skills, and self-esteem.

Education is often used to assist in the promotion of self-esteem. Classes for prenatal care, parenting, child and adult development will contribute to the patients understanding of the process of physical and mental growth. It is often beneficial to establish education classes tutored by recovering women who have specific skills in math, language, etc.

When patients have progressed within the preceding developmental areas, they are usually ready for treatment around the issues of sexual abuse, physical abuse, intimacy and introspection, as well as feelings and associations that trigger drug use. This step-wise approach allows for differences in a woman's development and for variations in cognitive, psychological, and behavioral abilities.

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## **Mother-infant Development**

Infants born to drug dependent women are often subject to double jeopardy, i.e. biological risk combined with a mother who is at risk for unsuccessful parenting. It is imperative, therefore, that maternal addiction programs include strategies designed to facilitate positive mother/infant interactions.

After the birth of an infant, a mother needs to be assisted in getting to know her baby and in familiarizing herself with her infants unique behavioral characteristics. One popular technique for accomplishing this is by using the Brazelton Neonatal Behavioral Assessment Scale, a tool designed to demonstrate a mother and infants unique style and capacity for interaction.

Specific care giving strategies for each member of this dyad are then developed by educating the mother about the competencies and needs of her infant and by teaching the mother comforting techniques and how to interact with her infant in a positive responsive manner. This type of intervention is essential because infants exposed to drugs in utero tend to be difficult to feed, have a poor sucking reflex, a high pitched cry, rigid muscular response

and are often irritable and difficult to console. They may have limited tolerance for sensory stimulation. Without intervention, mothers who have limited caregiving skills and resources are attempting to parent infants who are difficult to care for and who provide little positive reinforcement. Newborn care and feeding techniques should be taught to new mothers, and following discharge, home visits may facilitate caregiving needs in relation to environmental realities. Table 5 lists some characteristics of drug dependent women and drug-exposed infants which affect the maternal/infant relationship.

Table 5

**MATERNAL/INFANT DYADIC RELATIONSHIP**

DRUG ADDICTED MOTHER	DRUG-EXPOSED INFANT
High Stress	Disorganized Environment
Few Social Supports	Fragile
Low Self Esteem	Low Threshold for Stimulation
Exaggerated Need for Attention	Unresponsive to Social Stimuli
Faulty Coping Mechanisms	Pre-term Characteristics
Obtunded/Stimulated by Drugs	Withdrawal Syndrome
Irresponsible	Longer Hospital Stay
Physically Ill	

**Early Childhood Development**

An early childhood development center, or children's center, is helpful in order to enhance positive responsive parenting skills and to promote optimal development of children. A children's program, directed by an early childhood specialist, provides a stimulating, responsive and supportive environment for the children of patients. The meaning of infant behaviors, the mothers perception of the situation, and the effects of the mothers actions on the infant are important topics for discussion with this population.

Parent education groups may also be helpful, with a focus on the basic developmental milestones of growth and development. Drug dependent women often have limited knowledge of the basic milestones of behavior and therefore possess unrealistic behavioral expectations of their children. This lack of knowledge may contribute to the incidence of child abuse among drug dependent women, yet it is a risk factor that can be reduced significantly with intervention. Setting limits and appropriate discipline practices are also an important component of parent education. Addicted women tend to have a very low tolerance for frustration. While this low tolerance may foster abuse, at a minimum, it will result in an inconsistent pattern of responses to the child behaviors in which no appropriate limits are set. Since these women often have difficulty perceiving themselves as capable of changing their own actions,



they often cannot see themselves as agents of change in the lives of their children, except by physical punishment. Thus, the behavioral problems often reported in pre-school and school age children of drug dependent women may be a reflection of child rearing practices that are related to maternal addiction.

An additional function of a children's center is to provide child care for women receiving treatment services. Child care services are desperately needed for this patient population, but are generally unavailable in maternal addiction programs. Women who seek treatment tend to be older and multiparous, with several children under the age of 5, a factor that seriously impedes a mothers full participation in the treatment milieu.

Drug dependent women usually do not have safe options for child care. As a result, their young children accompany them everywhere. A mother faced with a long morning in a prenatal clinic may choose to miss her appointment rather than cope with having to bring her children along. When youngsters do accompany mother to the clinic and child care is unavailable, counseling sessions are constantly interrupted and effectiveness minimized. Tense, negative situations are often created because the children become tired and irritable.

The presence of a children's center in the treatment facility ensures that mothers can more fully participate in treatment. Treatment itself becomes more effective and the children are cared for in a responsive stimulating environment that facilitates optimal development.

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## REMAINING BARRIERS

In order to address the remaining barriers to effective prevention and treatment for substance-dependent women and substance-exposed infants, we must continue to approach the problem rationally and compassionately. We must accurately perceive addiction as a chronic relapsing disorder which, for women especially, is exacerbated by a host of social and economic dysfunctions.

To combat this problem, we must work at all levels - Federal, State, community, public and private-to encourage these women to seek treatment and to provide them with the support services they and their families need in order to break the cycle of intergenerational addiction, child abuse, and economic hardship. The Federal government plans to continue to expand its leadership role by assisting States and communities to:

- ◆ Identify and implement effective treatment methods for women and infants.
- ◆ Ascertain the extent to which demand for treatment exceeds existing treatment capacity and develop the resources necessary to fill existing gaps in the treatment delivery system for women and infants.

- ◆ Coordinate service delivery among a wide array of health, housing, education, social security, and other human services agencies, to create a safety net for women and their children.
- ◆ Reduce existing barriers to treatment.

We must also examine existing social institutions for ways in which to encourage, rather than discourage, self sufficiency and self esteem for women and children who are particularly at-risk of addiction.

Over the past several decades, appropriate treatment techniques for pregnant and/or postpartum drug dependent women have been researched and developed. We are fortunate to have a pharmacological agent (methadone) that has been shown to be efficacious for opiate dependence, not only in the initial stages of pregnancy but in on-going therapy following birth.

While there is yet no pharmacological agent found to be effective in the treatment of pregnant and/or postpartum women addicted to cocaine, it is possible to greatly enhance maternal and infant outcomes by combining medical, psychological, sociological, economic, mother-infant development, and early childhood interventions. Moreover, with the provision of comprehensive services, we are able to provide treatment that will rehabilitate the mother not only during pregnancy but in the postpartum period, so that she may attach to her infant and successfully continue the maternal-infant dyadic relationship. By treating the mother, we also help her child, thus ensuring that future children born in this Nation will not be plagued by the pain of physical and psychological disabilities, and sociocultural dislocations that often accompany addiction.

In addition, NIDA supports 20 carefully controlled clinical research demonstration studies designed to investigate the direct and interactive effects and the short-term and long-term efficacy of comprehensive programs that provide drug abuse treatment in addition to a broad range of social and health care services for drug-abusing women and their infants. These programs include components such as pre- and postnatal obstetrical care, care specific to drug-induced medical complications, residential and outpatient treatment, psychotherapy or counseling, educational/vocational training, and long-term case management.

Through the Pregnant and Postpartum Women and Their Infants Program, OSAP in collaboration with the Maternal and Child Health Bureau has funded 131 projects to serve this population over the past several years. As the evaluation of these projects progresses, the agency expects to gain a clearer picture of what prevention strategies are most effective for this population, or for sub-groups of this population, and disseminate this information for the benefit of States and communities who engage in drug abuse prevention activities.

# CHILD WELFARE SERVICES FOR DRUG ABUSING FAMILIES

## **CHILD WELFARE - PROBLEM AND APPROACH**

Public awareness and the concern for maltreated children preceded both the development of Federal and State intervention in the protection of children and the current upsurge of substance abuse among women of child bearing age. This early concern for the welfare of children is evident in the many variations of state child welfare laws.

Although child protection legal actions were recorded in the U.S. as early as 1655, sustained efforts to insure greater protection for children from the abuse of their parents or others gained momentum beginning in the early 1970's. Spurred by some State efforts, Federal legislation and initiatives, extensive media coverage, and public outrage, all states now have specific legislation to protect children from maltreatment. Concomitantly, child welfare systems, begun in the 1930's, significantly expanded their child protective services programs.

There are many common features of current State child protection laws. Each has a service system to receive reports of suspected child maltreatment; to investigate reports; to provide emergency services to protect children; to determine if the child may remain in the home or must be placed in foster care; to care responsibly for those children placed in foster care; and, finally, to make permanent plans for each child whether he will return to his own home or be placed for adoption. Each State also has court procedures in place to review State actions for out of home placement of children and to determine if parental rights should be terminated. Unlike drug treatment programs for adults discussed in this paper, before a child can be removed from the home and placed in the foster care system, the court system must make a determination.

## **The Numbers of Cases Are Increasing**

The increasing use of illicit substances among women of childbearing age has added substantially to the numbers of cases reported to child protective service agencies and those separated from their families. These children and their families often have more immediate and complex service needs than traditional child welfare cases. Parental substance abuse significantly increases the risk of children becoming victims of physical abuse, sexual abuse, or neglect. Drugs such as alcohol, cocaine, and crack tend to be associated with violent behaviors, and parents may become more abusive toward their children under the influence of these drugs or when in withdrawal (Besharov, 1990). Substance abuse is also believed to reduce inhibitions to sexual behaviors and may be responsible for much of the increase in child sexual abuse cases reported by staff of many child welfare agencies.

Over the past twenty years, greater public awareness of child abuse and neglect in general has dramatically increased reports to child protective services. Approximately,

- ◆ 60,000 cases were reported in 1974
- ◆ 1.1 million cases reported in 1980
- ◆ 2.4 million reports estimated in 1990.

Although there are many societal factors that account for the overall increase in reports to child protective agencies in the past twenty years, the increase in reports of children of drug abusers is having a dramatic impact on the foster care caseload.

- ◆ In 1977, an estimated 502,000 children were in foster care, (WESTAT National Study)
- ◆ In 1980, estimated at 302,000, Office of Civil Rights
- ◆ In 1983, estimated at 260,000, Voluntary Cooperative Information System' (VCIS)
- ◆ In 1986, estimated at 282,000, (VCIS)
- ◆ In 1988, estimated at 330,000, Center for the Study of Social Policy

To put these numbers in proper context it is important to realize two important factors; first, prior to 1986, the number of children in out-of-home care was actually decreasing; and second

the communities hardest hit by crack addiction have experienced the most startling increases in foster care placements. Two states (California and New York) were together responsible for 55 percent of the increase in foster care caseload from 1986 to 1989 (Besharov, 1990). California's foster care population rose 41 percent during this period, from 47,327 in 1986 to 66,763 in 1989. In New York there was an increase of 98 percent, from 27,504 children in 1986 to 54,326 in 1989 (The increase includes about 18,318 children placed with relatives.) (Besharov, 1990).

Another important factor implicating maternal drug use as a primary factor in the swelling foster care caseload is the increase in the number of infants in foster care. Between 1984 and 1989, the number of infants admitted to foster care increased more than two-fold in New York State, and nearly doubled in Illinois. In 1989, 3.3 percent of the children born in New York City entered foster care before the end of the year. In some New York neighborhoods, the infant placement rate exceeded 10 percent. In fact, if babies placed with relatives are included, % percent more infants were admitted to New York's foster care system in 1987 than in 1986. In 1989, infants accounted for 31 percent of the children coming into foster care for the first time in New York City (up from 15 percent in 1984); 25 percent in Cook County (up from 15 percent in 1984); and 25 percent in Wayne County, MI (up from just under 20 percent in 1984).

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## State Systems and Practices

Almost all states have mandatory reporting laws for child abuse and neglect. Although anyone can contact the responsible State agency if they suspect or have knowledge of child abuse and neglect, most child abuse and neglect reports come from mandated reporters. Mandated reporters usually include medical professionals and staff from schools, early childhood programs, hospitals, youth programs, and law enforcement. Mandatory reporters are usually exempt from liability for reporting. In a few instances, illicit drug use by women during pregnancy is reportable. Child protective service agencies are typically designated to receive such reports. They are, with some difficulty, attempting to adapt existing systems to respond to and provide services for the new cases of drug-exposed infants and in some instances, pregnant addicts.

Child protective service agencies typically conduct an investigation upon receipt of a report of alleged abuse or neglect. It is not incumbent upon, nor expected, that those making the report take steps to substantiate the facts of abuse or neglect. Medical or physical evidence may help in the investigation but more data are usually needed to establish the perpetrator(s) and to assess the family situation and the risks to the child. The detection of drugs in the newborn confirm the mother's use. But, drug screening tests cannot attest to how much or how often the mother may use (or has used) drugs, nor predict the risks or potential effects on the child.

Agencies vary in their efforts to work with the mothers of the children. Sometimes, agencies may place the child in temporary out of home care, while services are provided to rehabilitate the family. However, rehabilitative services for drug involved families are difficult to secure. Further, the prognosis for many drug using mothers is very uncertain. Frequently, she is seriously addicted and only sporadically available to care for her child (OIG, 1990). An intermediate step between removing a child and returning to the parents' home are the few new programs that place the children with the parent temporarily in small congregate care facilities with specialized services, where the mothers can be trained to deal with the special needs of the child, and receive drug treatment services.

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## Drug Abuse Cases Are More Difficult

Drug abusing families present special problems for the child welfare system. Assessment of the risks to the child is often more complex and difficult in situations of illegal drug use. Intensive family service models often will not accept drug involved families (Kinney et al, 1990). The mother may deny use, or distrust of the child welfare authorities may reduce candor. In addition, caseworkers can spend days tracking down mothers who give false addresses to hospitals. Interviewees in the Office of the Inspector General, HHS study (1990) stated that "working with these mothers is like beating your head against a brick wall... because you are dealing with someone who has no control over her life."

Further, the highly addictive nature of illicit drugs, particularly crack cocaine, makes treatment difficult. Many lack motivation, endurance and the support systems needed for long-term treatment. In one recent study of crack using mothers, it was found that most are unmarried, many are estranged from their families, and their friends tend to be drug users (Burns and Burns, 1988).

Early bonding and permanency are essential to the infant's sound growth and development. A five year treatment and recovery period may be required to assess the mother's potential for rehabilitation. This time period, although short in an adult's time perspective, is inconsistent with the developmental needs of a young child.

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### **Mandatory Reporting of Drug Related Cases**

The increasing prevalence of drug use or addiction among women of childbearing age and the potential adverse consequences to infants born exposed to drugs have fueled efforts to protect the fetus as well as children. A few states have enacted legislation requiring mandatory reports of pregnant women using illicit drugs, or of drug-exposed newborns. These efforts have not progressed without controversy and expressions of concern.

Those that advocate for mandatory reporting cite the addictive nature of drugs and the chaotic home environment of a drug abusing parent as risk factors for abuse of the child. Further, they argue that early intervention will help avoid children coming into the child welfare system in later years, after physical harm has occurred. Advocates of this position note that reporting an infant to Child Protective Services will not necessarily result in their placement in foster care, a report ensures only that an investigation will be conducted by CPS into the family's stability. In New York, for example, only about one-third of the substance-exposed infants go into foster care immediately. A GAO study (1990), found that only 1,200 of the 4,000 infants reported to be born substance-exposed went into foster care.

Those who oppose mandatory reporting fear that the potential loss of the child will keep the mother from seeking health care and drug treatment services. Further, they question the current testing protocols in many hospitals and argue that only a fraction of the drug using population is subjected to mandatory reports.

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### **APPROACH TO THE SOLUTION**

After more than a decade-and-a-half of intensive efforts to improve child welfare systems, the system appears to be overwhelmed. On a given day in March 1977, public child welfare agencies in the United States were actively serving 1.8 million children, or 27 of every 1,000 children under age 18. More than half-a-million of these children were living in foster care; 100,000 had been in foster care for at least six years. Neglect was the most common of the many and diverse reasons for service. Another study of child welfare in 25 states, found significant unevenness in service systems among the states. No

one State was found to have an exemplary total delivery system. In an effort to overcome shortcomings in the child welfare system and to require specific protection for children, Congress passed The Adoption Assistance and Child Welfare Act of 1980. The Act emphasized services to prevent separation of the child from the biological family and required reasonable efforts towards early reunification of the child with the parents if a child must be removed from the home.

The Act also provided Federal financial incentives to further State action towards protecting and achieving permanency for children. Inventories of children in foster care, state-wide information systems and periodic case reviews were encouraged to improve management and decision making for children. Following passage of the Act, the numbers of children in foster care decreased during the 1980's, in large part due to State efforts to improve systems of protection, and improve reunification and adoption activities. Currently, however, agencies are struggling to meet the ever increasing and complex needs of these more dysfunctional families. Early progress in reducing the number of children placed and the length of time in out-of-home care has been eroding. Many agencies report a "revolving door" phenomenon: families re-enter the system after the case has been closed – despite their best efforts. Some are concerned that emphasis on child protective services is detracting from other child welfare services. Societal changes, stresses on family life, unavailable or inaccessible preventive services and pressures on existing systems to serve families already in trouble are exacerbated by shortcomings in existing systems, including too high case loads, poorly trained staff, and poorly coordinated services.

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### **Child Welfare Initiative 1991**

In its continuing efforts to protect children, to prevent maltreatment, and to identify and treat those who may be abused or neglected, the Administration for Children and Families has undertaken a major child welfare initiative. Its principal thrusts include: putting children first, building and preserving families, constructing communities of concern around children and families, and insuring that when it is not feasible for a child to be reunited with their own families, early steps be taken toward termination of parental rights and adoption. Nine guiding principles (Table 6) serve to organize activities planned under several legislative authorities bearing on child welfare.

Efforts to address the particular needs of infants or children in drug abusing families, under way or planned, include:

- ◆ The Abandoned Infants program is concerned with infants who are abandoned or who remain in the hospitals beyond the need for medical care. The increased use of drugs has been associated with increasing numbers of abandoned infants. Under the Abandoned Infants Act, several activities have been funded to address the problem:

- 25 model projects to organize or augment a program of comprehensive services-foster family care, case management, family support services, respite and crisis intervention, and counseling;
- five cross-disciplinary training projects;
- two resource development and coordination projects to assist States and localities to develop innovative approaches to develop coordinated services using funds obtained from different funding sources;
- five coordinated early intervention projects to improve services and prevent abandonment among HIV positive children who are at high risk for developmental disabilities; and
- through an Interagency Agreement with the Maternal and Child Health Bureau, 12 Pediatric AIDS Demonstration Centers received supplements to augment services to prevent the abandonment of infants or young children.

These projects were funded in FY 1990 and early FY 1991 for two years. In addition, two resource centers will be funded in **1991** to provide technical assistance, monitoring, evaluation, and other services to help increase the effectiveness of these grantees.

- ◆ The Emergency Child Abuse and Neglect Prevention Program is in its first year, in FY 1991. Ninety-three projects have been funded to support services to prevent child maltreatment among children whose parents are substance abusers. Grantees must **(1)** provide assurances that the State and local agencies in the geographic area to be served are experiencing substantial increases in service demands which cannot be satisfied with existing resources; **(2)** identify the responsible agencies to be involved in the use of funds; **(3)** describe the emergency situations faced by children of substance abusers; **(4)** develop a plan for improving the delivery of such services; and **(5)** provide assurances that services will be provided in a comprehensive, multidisciplinary and coordinated manner.
- ◆ The Temporary Child Care for Children with Disabilities and Crisis Nurseries Program is meant to alleviate social, economic and financial stress in families with disabled or chronically ill children. In four of thirteen projects funded in FY 1990, children in drug abusing families were specifically **referenced among those to be served. Some of the remaining projects are** also serving substance abusing families.
- ◆ The Crisis Nurseries program provides for temporary emergency services and care for children to prevent abuse or neglect. In seven of the nine projects funded under this program in FY 1990, children in drug abusing homes were specified among those to be served.
- ◆ States may also use funds provided under the Social Services Block Grant (SSBG), Child Welfare State Grants, Child Abuse and Neglect State Grants,



and Family Violence State Grants for substance abuse related activities. Substantial Federal outlays are also provided for maintenance payments to support children who are placed in foster care, a condition frequently associated with substance abuse in the home, and to subsidize the adoption of children with special needs. The Administration for Children and Families also supports drug abuse prevention efforts among runaway and homeless youth, youth gangs, and Head Start families.

Table 6

CHILD WELFARE INITIATIVE 1991 GUIDING PRINCIPLES	
◆	The family is the most essential social unit in our society, Parents have an obligation to provide for and protect their children, When parents are unable or unwilling to provide essential care and protection for a child, public intervention is necessary and appropriate. Public intervention must be timely, well-informed, appropriate and ethical in its execution. Helping to strengthen families is paramount.
◆	Our expectations of those who work with children and their families must be clear and reasonable for the circumstances. Caseworkers, judges, health care providers, foster parents, adoptive parents and others need to be appropriately trained and supported in their work.
◆	Efforts must be made to increase cultural competence and sensitivity in agency staff and foster parents to help them in working with minority families.
◆	Next to the family, the local community has the most influence in child-rearing and in helping to strengthen families. Community-based approaches hold the most promise for children and families in need of, or who are at risk of, public intervention.
◆	States and localities have primary responsibility for child welfare systems of service. Well-integrated services coordinated among agencies are essential.
◆	Federal leadership is essential in policy development, research, evaluation, information sharing, and in the identification of best practices and more cost-effective child welfare services for State and local use.
◆	When children must be separated from their families, tentativeness cannot be permitted to prolong temporary placement in foster care. When it is not feasible to reunite children with their own families, early steps must be taken towards termination of parental rights and adoption.
◆	More needs to be done to improve foster care while achieving greater accountability for Federal foster care expenditures.
◆	Efforts must be made to assist young people aging out of foster care or who are in runaway or homeless situations to make a suitable transition to independent living.

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**WHAT ARE WE LEARNING** A variety of approaches to delivering services are being tried in an effort to improve the effectiveness of child welfare and related services to children and families, particularly those affected by family substance abuse.

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## **Screening Cases**

State and local law and local practice responding to reports of child abuse and neglect vary across states. To qualify for state grants under the Child Abuse Prevention and Treatment Act, states are required to have a system in place to respond to reports quickly. Reports of suspected abuse or neglect are typically screened to determine the urgency with which the agency must conduct an investigation. Cases may be screened-out when the reported behavior does not satisfy the agency's definition of abuse or neglect, or when there does not appear to be sufficient cause or information to justify follow-up. (Some agencies do not count cases which are screened-out as reports; others do.) State law or practice may also require that law enforcement or others join in the investigation, or in helping to establish the facts in the case. For example, Maryland requires reports to law enforcement agencies for serious physical or sexual abuse of a child.

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## **Fast-Track Adoption**

The growing foster care population of children of drug using parents also is forcing a fundamental reexamination of state foster care and adoption laws. Expedited adoption, where proceedings to terminate parental rights and then move a child into pre-adoptive placement are put on the "fast-track," is being considered by many States. In recent years, States have reduced the average waiting time required to terminate parental rights in abandonment cases from a previous average of 1 to 2 years, down to a current average of 6 months. In addition, "Fost-adopt" programs, in which foster parents plan to adopt the child they are caring for contingent upon termination of parental rights, are gaining acceptance in some States. Although broadening the conditions for terminating parental rights may release children from adoption at younger ages, there is still a question of whether there are adoptive homes for many of these children. Many of these children, particularly drug-exposed or HIV positive children, may need years of extensive services that prospective adoptive parents may be unable to afford. The Adoption Assistance Program provides financial assistance to some of these families to cover these additional costs.

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## **Risk Assessment**

The use of risk assessment tools in child protection agencies has emerged as a nationwide movement. Based on a survey of states, Tataro (1989) reported that of the 42 responding states, 29 states had developed some form of risk assessment and another 8 were developing one. Risk assessment models can be classified in various ways depending on their purpose, scope, focus, and methodology, however, most models fall into one or more of three categories: case prioritization models that categorize the immediacy of the response required at intake; investigative models that are used to help decide the appropriateness of actions such as the removal of a child; and family systems modules that provide a broad view of risk throughout a case. (Cicchinelli, 1991)

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Formalized risk assessment methods are not designed to replace professional judgment. Some models, however, do allow the caseworker to derive a score or risk value based on the factor considered. In Vermont, a case risk level is derived by computing the sums of the risk ratings for each individual item. Another method is the Michigan Family Assessment Scales which separately tallies the number of factors that are rated as particularly high or low risks. Still other models use an approach that identifies the presence of critical factors or combinations of factors. This strategy does not generally provide an overall value for risk in a case, but rather highlights particularly high risk circumstances. (Cicchinelli, 1991)

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### **Case Management**

Although not new in concept, case management is receiving more emphasis as a means to meet the complex service needs of maternal drug abusers and their children. Ideally, a knowledgeable professional matches the client's service needs with services in the community with continuing oversight responsibility to assure that the client receives the service. Case management requires command of the multidisciplinary resources required to meet the client's needs. Some believe that child welfare caseworkers should serve as the case manager for the family; some view the case management function as a new set of responsibilities for the caseworker.

Typically, case management is not an institutionalized function of the child welfare system. Examples may be found among demonstration projects. As such, the case manager's authority may be tenuous with success dependent on individual ingenuity, persuasiveness and the relationships they are able to establish.

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### **“One-Stop Shopping”**

Increasingly attention is being given to “one-stop shopping” service delivery approaches to improve the integration and comprehensiveness of public, as well as private, services. Child welfare services, drug treatment, maternal and child health, parenting education, child care, transportation, housing, employment and self-improvement services may be co-located, and sometimes co-managed, in an effort to help facilitate services for the client.

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### **Congregate Care for Mother and Child**

A few programs have begun to emerge in which the mother and the child remain together in a residential treatment setting. Drug abuse treatment services are provided for the mother along with parenting education, employment and other training. Mothers experience positive reinforcement from learning to care for and elicit positive interaction with the child, developing a better self-image, learning job skills and from the mutual support of others in the program, thus increasing their potential to overcome drug abuse and to safely care for the child.

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## **Specialized Foster Care**

Many public agencies have developed specialized foster care programs, involving increases in the rate of payment for care of drug-exposed children that have medical complications. While a few agencies have experimented with paid foster parent staff, the more common procedure has been to increase the board rate, based on an estimate of the level of care required by the child. For instance, New Jersey has three levels of payment, the highest of which is \$700 per month for children requiring special levels of care, such as drug-exposed infants. On a pilot basis, the New Jersey Department of Human Services has also implemented the Special Home Services Provider. Special Home Care rates are: \$900 per month for infants classified as “medically fragile”; \$1000 per month for infants infected with the HIV virus, but showing no symptoms of AIDS; and \$1200 per month for infants suffering AIDS symptoms.

In addition, in many instances, the medical costs, transportation and other special charges are paid by the agency. Agencies may also provide special case managers, frequently using staff with some medical background, to work with the foster parent and to arrange for all of the medical and therapeutic needs of the child. Agencies also make special efforts to provide both practical and psychological support to foster parents caring for these very difficult and demanding babies by providing counseling services and respite care.

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## **Family Preservation Services**

Several variations of “family preservation” or “family-based” services may be found, but HOMEBUILDERS (a 1974 Children’s Bureau demonstration project) is the model most commonly replicated or adapted. Typically, families in which a child is destined for out-of-home placement are candidates for the program. Intensive, time-limited therapeutic services are delivered in the home to avoid separation of the child from the family. Highly focused services are provided to resolve the crisis leading to the placement decision and to help develop the skills needed for the family to remain intact. To qualify for such intensive services, at least one family member must express the desire to keep the family together and no family member may refuse the option of remaining together. In some models, in-home after care services to the child and family may be provided to maintain the stability of the home following the child’s separation and return home.

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## **Respite Care**

Respite care programs are intended to alleviate social, economic, and financial stress among the families of disabled children or those who are chronically or terminally ill. Temporary child care is typically offered along with other services to help reduce the stresses experienced by those caring for these children. These services may be offered to biological or foster parents caring for seriously affected drug-exposed children.

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**REMAINING  
CHALLENGES**

Drug abuse among women of childbearing age has the potential for serious adverse medical, social and psychological effects for the mother, the infant and other young children in the home. Infants born addicted clearly suffer adverse effects; others experience various degrees of difficulty often including low birth weight, small head circumference, irritability, inability to organize behavior, inappropriate responses to stimuli, failure to bond, and failure to thrive. Unsupportive drug-using home environments further complicate and jeopardize the sound growth and development of the young child. Instability and unpredictable adult behaviors in drug-using homes raise serious questions of protection for young children particularly when other responsible adults cannot be identified in the household. Consequently, child protective service agencies are experiencing unprecedented demands to investigate cases of actual or threatened harm to infants and young children of drug-using parent(s) to assure the protection of children.

Work with these families is complex, difficult, time-consuming and often unproductive. Motivation is often lacking in the parent(s). Even when parents show interest in treatment, agencies report insufficient access to appropriate drug treatment services, particularly for pregnant women. Overcoming drug addiction or abuse frequently requires intensive, long-term, highly specialized treatment services coupled with self-help and other supportive services, such as housing, employment, respite care, and child care. Recidivism is common. Criteria for how long and how far to go in treatment are generally lacking. Additional efforts are required to address the complexities of providing services for drug-exposed infants and their families.



# LEGISLATIVE AND JUDICIAL RESPONSES TO DRUG-EXPOSED INFANTS

## LEGISLATIVE AND JUDICIAL - PROBLEM AND APPROACH

Before a child may be removed from its home and placed in foster care, a court action must take place. It is therefore incumbent upon any party interested in fully understanding the impact of drug-exposed infants and children of drug addicts on the child welfare system to understand recent changes in State laws and court interpretations. Three areas of the law have been employed relating to parental drug use: criminal laws, child abuse reporting laws, and termination of parental rights. Pregnant drug abusers are increasingly being prosecuted under existing criminal laws in some jurisdictions. According to an August 1990 issue of the New York Times Magazine, criminal charges have been brought in nineteen states and the District of Columbia. The majority of these cases involve charges of criminal child abuse or endangerment. Most cases successfully prosecuted involve a charge of delivery of an illegal drug to a minor. The drug delivery charges have been concentrated in three States: Florida, South Carolina, and Michigan (New York Times). Charges of criminally negligent homicide have successfully been prosecuted in Alaska.

The most widely reported cases involve criminal charges. California was the site for one of the first widely reported cases – in San Diego County a woman was charged with failing to provide support and medical care for her unborn child. Since August 1989, eighteen women in South Carolina have been charged with either criminal neglect of a child or distribution of drugs to a minor. In Florida, several women have been charged with delivering drugs to a minor and contributing to the delinquency of a minor. (See Appendix)

Criminal prosecution of mothers who deliver children prenatally exposed to drugs is receiving a lot of press attention, in part because of press access to these courts and the controversial nature of the charges. For the most part, however, drug-exposed children are being served by the public child welfare authorities and the family court system, rather than the criminal justice system. All States have laws providing for reporting of suspected cases of abuse or neglect to the public child welfare or other designated public authorities. Several courts have applied child abuse and child abuse reporting laws to prenatally drug-exposed children, even in the absence of explicit statutory provisions protecting infants born drug dependent.

Until recently, most existing State statutes that require health care or other professionals to report evidence of child abuse or neglect did not include prenatal abuse or neglect. However, in the last few years, many States have amended their statutes to require reporting when infants are born addicted or when a toxicology test for drugs is positive.

In one of the first cases to address the issue, In re Baby X, the Michigan Court of Appeals held that prenatal conduct provides evidence of a child's neglect,

and a newborn suffering withdrawal symptoms as a consequence of prenatal maternal drug addiction may properly be considered a neglected child within the jurisdiction of the probate court. The Michigan court found that evidence of prior endangering conduct, such as the removal of siblings because of prior neglect or abuse, or drug abuse during pregnancy, is a permissible indication of future conduct.

New York courts have applied similar analysis in the In re Male R and In re Danielle Smith. One Ohio court took the analysis a step further and ruled in In re Ruiz, that not only was an infant born drug dependent an abused child, but also the unborn baby is to be considered a child under the provisions of the Ohio Child Abuse Act.

In at least one recent case, In re Troy D., a California appellate court interpreted California's existing child abuse reporting statute to require, in effect, reporting of all cases in which the infant is born exposed to drugs. (DeBettencourt, 1990) The infant, Troy D., was born premature and tested positive for methamphetamines and opiates. The mother argued that the juvenile court had no jurisdiction over the case because a dependency petition could not be sustained with respect to an unborn child, and the endangering conduct occurred before the child was born. The court held, however, that, though a unborn child is not considered a child under California's felony child abuse statute, Troy D. is now a living child, and prior conduct is probative of future neglect. The child's positive toxicology test alone, therefore, was sufficient to sustain a dependency petition. The California court relied on the earlier Michigan case, In re Baby X (DeBettencourt, 1990).

The Baby X and Troy D. cases have been criticized because they permitted court intervention and removal based upon prenatal drug exposure alone. Previously courts had required that other evidence of parental incompetence is required to permit removal. Critics argue that dependency proceedings will be used overzealously by those who are too quick to justify the taking of children from their natural parents.

Many State legislatures have moved in the same direction as local courts, amending existing civil child neglect laws to include drug use during pregnancy. These States include: Florida, Illinois, Indiana, Nevada, Oklahoma, Rhode Island, and Utah. Minnesota is the only State to amend its criminal abuse and neglect statute to include drug use.

Some States have also passed legislation requiring reporting to the child protective agency in all cases in which the child has tested positive for drug exposure. For example, Illinois amended its reporting statute to include as neglected any newborn infant whose blood or urine contains any amount of a controlled substance. Minnesota has the most extensive statutory provision concerning reporting of substance abuse among pregnant women and prenatal drug exposure. The statute requires a physician to administer a drug toxicology test to any pregnant woman experiencing obstetrical complications that are a medical indication of a possible use of a controlled substance. The physician is also required to administer a toxicology test to a newborn infant if there is evidence of exposure. Moreover, the statute requires that any

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professional ordinarily covered under mandatory child abuse reporting requirements, shall immediately report to the local welfare agency if the person knows or has reason to believe that a woman is pregnant and has used a controlled substance. The law also permits any person who has knowledge of substance abuse by a pregnant woman to report it to the child welfare agency. The aim of the statute is preventive rather than punitive. That is, it requires the local welfare agency to assess the pregnant womans situation and to offer services that are needed, including treatment for drug dependency and prenatal care. Oklahoma, and Utah also have reporting laws based on a newborn infants positive toxicology. (DeBettencourt, 1990)

Laws granting immunity to hospital employees and social services workers who report positive toxicologies of newborns to social services or State prosecutors have also been enacted in several States. These are modeled after the child abuse reporting laws with their immunity clauses. A number of States have amended their statutes to require reporting whenever an infant is born addicted to drugs, that is, the infant has an actual physical dependency. Floridas child abuse statute, for example, includes in the meaning of the term harm to a child, physical dependency of a newborn infant upon any drug controlled in Schedule 1. Massachusetts, Oklahoma, Indiana, and Utah also require reporting when an infant is determined to be physically dependent upon an addictive drug at birth. This approach, however, does not seem to cover the situation when a child is born prenatally exposed to drugs but is not addicted or dependent. Thus, serious neurologic or physical harm to the newborn resulting from substance abuse would not trigger the mandatory reporting requirement.



# FINANCIAL ASSISTANCE PROGRAMS

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## FINANCIAL ASSISTANCE - PROBLEM AND APPROACH

Many drug and alcohol dependent individuals and their children are without sufficient financial resources to pay for treatment or other medical care and may be incapacitated to an extent rendering them unable to support themselves and their children. Several programs operated by HHS's Health Care Financing Administration (HCFA) and Social Security Administration (SSA) play roles in addressing this aspect of maternal drug abuse.

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## Medicaid

The Medicaid program, administered by HCFA, was enacted in 1965 as Title XIX of the Social Security Act. It is a Federal-State, entitlement program that pays for the health care of certain categorically-eligible low-income individuals.

Medicaid is a program that provides medical assistance to persons with limited financial resources, which initially meant recipients of AFDC and SSI. Eligible individuals had to meet the cash assistance program definitions of aged, blind, disabled, or dependent, as well as the State-set income eligibility limits for those programs. In many states the same requirements are used for SSI and Medicaid. Recent program expansions require States to provide coverage to certain non-AFDC groups, such as pregnant women and children under 6 years of age in families with incomes below 133% of poverty and children up to age 19 who were born after September 30, 1983 in families with incomes below 100% of poverty. These groups are known collectively as categorically needy and States are required to cover them under Medicaid.

States also may cover individuals who are medically needy-that is, their incomes and resources are higher than the normal cash assistance cut-offs, but their relatively high medical bills have caused the income and resources available to them to fall within applicable limits for the program.

Medicaid programs are State designed and administered within broad Federal guidelines. Benefit and administrative costs are shared, with the Federal Government paying an average of 56% of benefit costs and 50% of regular administrative costs (although certain types of administrative expenses are matched at a higher rate).

For eligible individuals, States must provide, at a minimum, needed inpatient and outpatient hospital services, rural health clinic services, physician services, nurse midwife services, services in Federally qualified health centers, and EPSDT services for children under 21 years of age.

Within the above categories, States can choose to offer a variety of alcohol and drug treatment services, for instance detoxification, outpatient day treatment, or methadone maintenance. Whether or not individual States

cover such services depends on how they define services under the mandatory categories and whether they set limits on the amount of services available to an individual under Medicaid. At present Medicaid does not pay for treatment of drug addiction or mental illness in residential treatment facilities of larger than 16 beds, unless provided as an inpatient psychiatric service for individuals under age 21.

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**SSDI** Under the Social Security Disability Insurance (SSDI) program administered by the Social Security Administration (SSA), the mother must have a medically determinable physical or mental impairment that has kept, or is expected to keep, her from working in substantial gainful activity for at least 12 months, or is expected to result in death. The impairment must be demonstrated by medically acceptable clinical and laboratory diagnostic techniques.

In addition, the mother must have worked long enough and recently enough in a job covered by Social Security to earn enough quarters of coverage to be insured. For 1990, \$520 in covered earnings equals one quarter of coverage. The quarters of coverage needed for insured status depends on the person's age when she became disabled. Once the mother becomes entitled to disability benefits, a monthly check also may be paid to her dependent children even if they are not disabled. Medical insurance protection (Medicare) is available to the mother after she has been entitled to disability benefits for 24 months.

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**SSI** The Supplemental Security Income (SSI) program, also administered by SSA, differs significantly from SSDI because it is a needs-based program and does not require insured status. To be eligible for SSI payments, a person must meet citizenship and residency requirements, have limited income and resources, and also be age 65 or over, blind, or disabled.

The disability requirements for adults under SSI are essentially the same as under the SSDI program. In addition, under SSI, a child (e.g., a baby with a crack addiction) can qualify for disability payments in his/her own right, even if the parent is not disabled. Children under age 18 must have an impairment(s) that is as severe as one that would keep an adult from working (i.e., it must substantially reduce the child's ability to function independently, appropriately, and effectively in an age-appropriate manner). Individuals receiving SSI disability payments are entitled in many states to medical coverage through Medicaid. Medicaid does not have the waiting period that is associated with Medicare.

Income includes money earned from work, money from other sources, or free food, clothing and shelter. Generally, the more income an individual has, the less her SSI payment will be. If income is over the allowable limit, an individual cannot receive SSI payments. Resources include cash or bank accounts,

certain personal property, and life insurance. In 1990, SSI limits on resources are \$2,000 for an individual and \$3,000 for a couple. Under certain circumstances, we also may consider some parental income and resources to be available to a disabled child under age 18. This may affect whether a child can get SSI and how much he/she may receive.

Under SSI there also is a specialized provision concerning individuals whose substance addiction is material to the finding of disability. This is true only where the individual's impairment(s) would not continue to be found disabling if the use of drugs or alcohol were to stop (e.g. through the successful treatment of this condition). Such an individual may not receive payment in any month in which he/she is not undergoing appropriate treatment that may be available. The law also requires that payments to such individuals shall be made to a representative payee. Currently, this provision applies to between 27,000 and 30,000 addicts and alcoholics.

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## **REMAINING CHALLENGES**

Confusion exists both nationally and within individual States regarding what substance abuse treatment services are available under Medicaid. HCFA is working with States and service providers to clarify these issues and assure a broad understanding of how Medicaid can be used to serve this population. In addition, because the unavailability of residential drug treatment under Medicaid has been cited as a problem for this population, other than as part of the inpatient psychiatric services benefit for those under age 21, HCFA is sponsoring a series of waiver demonstrations allowing several States (Maryland, Massachusetts, New York, South Carolina, and Washington) to experiment with the option of allowing such services for pregnant women. Finally, as part of wider efforts throughout the Medicaid program, HCFA will seek ways to increase the availability of providers participating in the Medicaid program.

Recently published childhood disability regulations for the first time include medical listings for psychoactive substance dependence disorders in children. Eligibility is defined by the individual's level of functioning. SSA will continue to look at this issue as more becomes known about the problems suffered by children as the result of prenatal drug exposure to determine whether further modifications in the listings are indicated. Children whose impairments do not meet the criteria of the listings may still be found disabled if an individualized functional assessment shows that their ability to function independently, appropriately, and effectively in an age-appropriate manner is substantially reduced.



# CONCLUSIONS

## COLLABORATIONS BETWEEN SYSTEMS AND PROMISING PROGRAM MODELS

As the discussion above illustrates, drug using mothers and their children have broad needs and will require the coordinated provision of services from a number of service systems and disciplines. Service providers who work with these families stress that cooperation, collaboration and communication between the variety of agencies and programs that serve these families is essential.

While most model demonstration programs initiated to serve these families have not yet been rigorously evaluated to determine their effectiveness, the most promising models incorporate the following principles. Programs should (1) be family-oriented with a broad definition of family, (2) include child care and child development services, (3) offer a range of services at varying levels of intensity, (4) be closely coordinated with other service agencies and systems, (5) have both in-home and center-based components, and (6) utilize multi-disciplinary teams to ensure that the full range of required services is available.

## Conclusions

Substance abuse by pregnant women and women with children is a problem of extreme concern to the U.S. Department of Health and Human Services and its component agencies. The Department has already undertaken several efforts to address the problem. The projects described below are examples of the Departments commitment to addressing\_ the complex and growing problem of parental drug abuse.

- ◆ NIDA has supported a number of research projects to study the effects of prenatal drug exposure on children and to demonstrate effective treatment strategies for drug abusing women. NIDA also has initiated the National Health and Pregnancy Survey to provide a national estimate of the prevalence of maternal drug use, the number of drug-exposed infants, and information to assess the relationship of drug use during pregnancy with low birthweight and length of stay in the hospital.
- ◆ ADAMHA's Office for Substance Abuse Prevention (OSAP) and HRSA's Maternal and Child Health Bureau (MCHB) have funded 131 demonstration projects to test different approaches to providing comprehensive prenatal care and drug prevention, early intervention and treatment services to pregnant and postpartum women, and ways to retain these women in programs once they have enrolled.
- ◆ OSAP has established a Perinatal Addiction Resource Center that will focus on providing training, dissemination of information, holding expert group meetings, promoting networking among professionals in the field, and

producing an annual national report of major problems and potential solutions.

- ◆ ADAMHA has established the Office of Treatment Improvement (OTI) to improve drug treatment opportunities and outcomes. Approximately 30% of OTI's grant funds are directed towards substance abusing women and their children.
- ◆ Healthy Start is a new PHS program of comprehensive interventions in fifteen communities (urban and rural) with exceptionally high infant mortality rates. Funds will be used to increase the number of women who receive prenatal care, provide a full range of appropriate medical services, including drug treatment, and address other problems, including transportation, child care and linkage to social and other services.
- ◆ HCFA, in collaboration with NIDA, has started a demonstration project on methods of expanding access to prenatal care and drug treatment for pregnant substance abusers and their infants who are eligible for Medicaid.
- ◆ Within ACF, demonstration grant funds have been allocated to address drug related needs of pregnant incarcerated women, Head Start has initiated drug prevention efforts, and the Abandoned Infants Assistance Act and the Emergency Child Abuse Prevention Program have been implemented.
- ◆ SSA provides Social Security Disability Insurance (Title II) and/or Supplemental Security Income (Title XVI) payments to mothers who meet requirements of SSA and are medically determined to be disabled. To receive SSI benefits, based on alcohol or drug abuse they must undergo treatment for the addiction and have a representative payee to manage their benefits. Under Title II the children may receive benefits as dependents if the mother or father is disabled, retired or deceased. The children may also receive SSI benefits if they themselves are disabled and poor.

The varied agencies within HHS are committed to working together to address the problem of maternal drug use and the needs of drug-exposed children. As has been described above, substantial progress has been made in understanding the nature of the problem and developing strategies to address the needs of this population. By conducting research, developing and disseminating effective interventions, supporting State and local service capacity, and providing medical and disability insurance payments for eligible individuals, this Department carries its commitment to healing and strengthening families affected by maternal substance abuse.



## APPENDIX

### Selected Examples of Judicial and Media Treatment of Maternal Drug Abuse in Several States

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ALASKA A December 12, 1989 article in The Alaska Republic reported that a Fairbanks, Alaska mother whose baby died from a cocaine overdose was sentenced in August to six months in jail for criminally negligent homicide. An autopsy found that her 2 week-old son died from a heart attack caused by the babys prenatal exposure to cocaine.

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CALIFORNIA In one of the first reported cases of its kind, according to the Los Angeles Times, the San Diego County district attorneys office charged a 27 year old woman with failing to provide support and medical care for her unborn child, a misdemeanor charge. Pamela was ordered by her doctor to stop using illicit drugs and having intercourse. A few days later, according to court testimony, she used methamphetamines and had sex. The baby was born with severe brain damage and died six weeks later. There were traces of amphetamines in the childs blood, but the examining doctor concluded that the babys death was due to the massive hemorrhaging the woman experienced before she went to the hospital for birth. The woman was prosecuted under a child support provision of the California Penal Code for failing to provide medical attention to a minor child. The charge was eventually dismissed because the court found that the statute was intended to apply only to financial child support obligations.

California has continued to provide a judicial forum for cases related to this issue. In Oakland, a woman pleaded guilty to manslaughter after the deaths of her two twins, who were born premature and addicted to cocaine. Further, in July, 1989, a three judge panel of the 4th District Court of Appeals in San Diego ruled that physicians Statewide must report every instance of prenatal drug exposure as a possible case of child abuse. These two precedent-setting cases are in the process of appeal.

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COLORADO In Golden, Colorado, the District Attorney has charged six women with use of a controlled substance and misdemeanor child abuse based on testing of newborns. A conditional sentence in these cases provided that if the women stay in treatment, with drug abstinence and testing, and successful completion of probation, the charges will be dismissed.

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CONNECTICUT

According to an August 11, 1990 article in the Connecticut Daily News, a 20 year old woman swallowed a quarter ounce of cocaine as police moved in to arrest her. She was subsequently charged with drug possession, tampering with evidence, and endangering her unborn child.

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FLORIDA

According to a September 13, 1989 article in the Washington Post a Sanford, Florida woman was convicted in July of two counts of delivering drugs to minors. The woman used cocaine during two pregnancies. She was sentenced to 14 years probation, during which time she must report any pregnancies to law enforcement authorities and receive court approval for her prenatal care program.

In addition, a January 4, 1990 UPI release reported that another 32 year old woman, of Pensacola, pleaded no contest to delivering cocaine to her newborn and contributing to the delinquency of a minor. In an earlier New York Times (6/18/89) article, a 29 year old woman was reported as facing felony drug charges for delivering drugs to a minor through the umbilical cord. Her son, was born November 13, 1988 with both cocaine addiction and syphilis. However, in State of Florida v. Gethers the Judge dismissed criminal charges brought against a 23 year old woman. The court ruled in November, 1989 that the fetus was not a legal person for purposes of the child abuse statute.

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GEORGIA

A November 11, 1989 article in the Atlanta Constitution reported that a 22 year old woman was arrested in Cordele, Georgia and indicted on charges of delivering drugs to her unborn child for using cocaine during her pregnancy. She had been warned on several occasions by social workers that using cocaine was dangerous to her baby. She pleaded guilty and is awaiting sentencing. The State used a criminal drug trafficking law in this action.

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ILLINOIS

According to the New York Times, Illinois State Attorney filed involuntary manslaughter charges against a 24 year old woman after her baby died on February 4, 1989 due to oxygen deprivation linked to cocaine exposure late in the pregnancy. In a July 30, 1989 Washington Post article, it was reported that the Grand Jury in Winneago refused to indict the woman.

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INDIANA

According to an October 10, 1989 article in The Indianapolis Star, a 28 year old Portage, Indiana woman was charged with possession of cocaine based on

findings that her baby was born with cocaine addiction. The woman was arrested and released on a \$2,500 bond.

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## KENTUCKY

In Boyd County, Kentucky, a pregnant addict was charged with placing a child in a situation of risk of death or serious injury and was convicted of criminal abuse and drug possession. She received an 8-year sentence.

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## MASSACHUSETTS

An August 22, 1989 Boston Globe article reported that a 23 year old Brockton woman was charged with delivering cocaine to a minor, which carries a minimum three-year State prison sentence. She and her 25 year old boyfriend of Norwood were also charged with assault and battery with a dangerous weapon and being an accessory to abuse after it was determined that their son had been burned on the toes with a cigarette.

In addition, an October 10, 1989 Boston Globe article reported that a 29 year old Waltham woman pleaded not guilty to vehicular homicide charges. In the Commonwealth of Mass. v. Levey, a Middlesex prosecutor charged the woman with vehicular homicide when she miscarried at 8 months and two weeks of pregnancy as a result of her drunk driving. The charges were ultimately reduced to driving while intoxicated.

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## MICHIGAN

An August 19, 1990 New York Times Magazine feature article covered extensively the cases of two women who have been charged with felony drug delivery charges in Muskegon County. Both mothers are currently awaiting trial.

In the People of the State of Michigan v. Cox, a Jackson County woman is being prosecuted for delivery of cocaine to her unborn baby. A preliminary hearing held on January 1, 1990 concluded that charges of delivery of drugs to a minor via the umbilical cord was warranted. Charges of child abuse and delivery of drugs during pregnancy were dropped.

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## OHIO

A December 22, 1988 AP release from Dayton, Ohio noted that a Montgomery County Common Pleas Judge handed down a maximum sentence for theft to a 31 year old pregnant drug addict to keep her from using drugs through out the duration of her pregnancy. At the Ohio Reformatory for women, the woman will be able to participate in a parenting and prenatal program with 35 pregnant prisoners.

In Cox v. Court of Common Pleas, Franklin County, a pregnant addict and mother of four boys was ordered by a Franklin County Judge to stay at University Hospital until her baby was born. The Court of Appeals overturned the order, holding that the trial court had no jurisdiction over an adult woman for the purpose of controlling her conduct during pregnancy.

In State of Ohio v. Andrews, a woman from Stark County, Ohio was charged with child endangerment for her cocaine use during pregnancy. The trial court held that Ohios child endangerment statute applies only to children born at the time the endangering activity occurs, and dismissed the charges.

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SOUTH CAROLINA

Since August 1989, eighteen women in South Carolina have been charged with either criminal neglect of a child or distribution of drugs to a minor. An October 3, 1989 article in the Boston Globe, reported that a Greenville woman was charged with criminal neglect after traces of heroin were found in her child's system. The woman received a three and one-half year suspended sentence. In a similar case, a fifteen year-old mother and her parents have all been charged with criminal neglect based on the positive drug test of the woman's five-day-old baby. The grandparents in that case are charged with failing to provide proper care for their daughter and grandchild.

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TEXAS

In State of Texas v. Rodden, a Tarrant County woman was indicted on a felony charge of injury to a child when her baby was born addicted to cocaine. The charges were dismissed when officials learned that, since the woman was taking medically prescribed methadone, it was unclear whether the infant's withdrawal was caused by legal or illegal drugs.

In Albany County, Wyoming, a pregnant woman who entered a hospital for treatment for injuries inflicted by her abusive husband was arrested, tested for alcohol, jailed, and charged with criminal child abuse for endangering her fetus. On February 1, 1990, the court found no probable cause to continue the case.

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WASHINGTON D.C.

In July of 1989, several articles in the Washington Post discussed the case of a pregnant drug user in Washington, D.C. who was jailed for check forgery to prevent her from taking drugs for the duration of her pregnancy.

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