Health Care System Response to Prenatal Substance Use: An Exploratory Analysis

Gail L. Zellman, Peter D. Jacobson, Helen DuPlessis, M. Robin DiMatteo
The research described in this report was supported by RAND’s Drug Policy Research Center as part of its program of public service.

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PREFACE

Illicit substance use among pregnant women and the effects of substance exposure on neonates are generating increased public policy attention. This Note describes a preliminary effort to assess how health care providers and hospitals are responding. With support from RAND’s Drug Policy Research Center, which is funded by the Ford and Weingart Foundations, semistructured interviews were conducted in local hospitals to explore policy responses and perceived incentives and disincentives to detect prenatal substance use.

This Note should be of interest to health care policymakers, health care providers, and others concerned about the prevention of substance use and its consequences.
INTRODUCTION

Little attention has been devoted to prevention or early detection of substance use during pregnancy. The vast majority of prenatal substance exposure cases are identified at the time of birth, when the mother or neonate presents with signs or symptoms consistent with drug involvement. This late identification shifts the focus of intervention from improving pregnancy outcomes to ameliorating the effects of prenatal exposure and protecting the infant from potential abuse or neglect.

Nor has there been much research on physician response. The limited literature suggests that the reluctance of physicians to assume an active role in the detection of prenatal substance exposure may be due, in part, to a lack of policies and procedures for systematically identifying drug-exposed women and infants in health care institutions (GAO, 1990). Virtually no studies have examined this topic or the personal and policy factors that inhibit or facilitate provider willingness to detect substance use.

Our research was designed (1) to generate exploratory data about the responses of health care providers to prenatal substance exposure and (2) to examine current substance detection policies and practices in health care institutions.

THE SCOPE AND CONSEQUENCES OF PRENATAL SUBSTANCE USE

Good data concerning the prevalence of prenatal substance use are not readily available. Most estimates of illegal drug use focus on women of child-bearing age rather than on pregnant women.

The few studies that examine the proportion of pregnant women using drugs present a broad range of estimates. The National Hospital Discharge Survey estimates that 13,765 drug-affected infants were born in 1988. The prevalence of illicit drug use among women seeking prenatal care in Pinellas County, Florida, was estimated at 14.8 percent (Chasnoff, Landress, and Barrett, 1990). Other studies place the national estimate of drug use during pregnancy at 11 percent (Chasnoff, Chism, and Kaplan, 1988). National hospital survey estimates range from 0.4 percent to 27 percent, with an overall prevalence of 11.9 percent (Chasnoff, 1989).

These studies are subject to a number of biases that need to be considered in arriving at prevalence and incidence estimates. Many studies rely on self-report measures, which are believed to lead to serious underreporting of drug use by mothers. The data available about
the prevalence of drug use among pregnant women come predominantly from hospitals that serve poor, inner-city populations (Bailey, 1987; Osterloh and Lee, 1989). There are no available estimates of drug use among pregnant women in suburban and rural populations and few among women of higher socioeconomic status (Chasnoff, Landress, and Barrett, 1990). And estimates of drug use are confined in most cases to populations of women who receive some prenatal care, suggesting that overall prevalence of prenatal drug use may be higher.

EFFECTS OF PRENATAL SUBSTANCE USE ON INFANT AND CHILD HEALTH

The common-sense notion that drug use during pregnancy increases the risk of poor pregnancy outcomes is supported by the results of a number of studies. While these studies exhibit a range of limitations, including small samples, failure to account for multiple drug use, and reliance on unvalidated self-report data, the literature is clear that substance use during pregnancy increases the risk of poor pregnancy outcomes. In particular, research on cocaine reveals three adverse outcomes for infants: malformations, growth abnormalities, and behavior problems (Doering et al., 1989). While the effects of other drugs used during pregnancy are less well known, such substances as methamphetamines and marijuana also have been implicated in poor outcomes (Little, Snell, and Gilstrap, 1988; Fried, 1985).

DETECTION OF DRUG USE

Before maternal substance use can be treated or even acknowledged, it must be detected. Given probable maternal contact with the health care delivery system at some point during a pregnancy, and physicians' authority and credibility with regard to patient behavior, the health care system provides an important opportunity to detect and respond to maternal substance use.

However, the technical and legal ramifications of the discovery of drug use may undermine patient and provider motivation to pursue this information. Technical issues center on the inability of most detection methods to allow an accurate description of an individual's pattern of drug use over an extended period of time. Even when an objective diagnostic test, such as urine toxicology screening, is used to determine drug exposure, the accuracy of the test primarily depends on the specific assay technique used and on the actual timing of drug use.

The relationship between a drug-using pregnant woman and the fetus presents unique and difficult legal challenges. Both the state and the health care provider have an interest in the health of the mother and the fetus, but pressing a claim on behalf of one may conflict with the rights and interests of the other. That is, the state and the courts must balance a
woman's right to privacy and control over her body during pregnancy against the state's right to protect the health of the fetus.

Professional norms may reduce the motivation to detect drug use. Research in other areas of health care reveals that health care providers are somewhat reluctant to question patients about their psychosocial problems or their health-related habits, such as smoking, and may fail to insist that patients practice health-promoting behaviors, e.g., weight control.

Provider reluctance may also be based on higher principles. The ethical principle of beneficence requires a health care provider to offer the therapy that best promotes the patient's health and, at the same time, to minimize harm. Providers who believe that drug detection will discourage future participation in prenatal care or otherwise undermine candor and honesty in the provider-patient relationship may be reluctant to make any efforts to detect drug use.

METHODS

In 17 semistructured interviews in a purposive sample of five hospitals in two California counties, we interviewed obstetricians, pediatricians, nurses, administrators, and Suspected Child Abuse and Neglect (SCAN) team social workers. We also conducted a preliminary review of state legislation and policy relevant to these issues. Choice of individual respondents was opportunistic; we attempted to interview heads of obstetrics, pediatrics, and pediatric nursing, but agreed to interview other health care providers if those staff members were not available.

FINDINGS

In each of the hospitals we visited, some efforts had been made to explore the dimensions of the drug problem in their own patient populations. But in most instances, such decisions were individual rather than institutional.

Estimates of the prevalence of substance-exposed pregnancies were rarely based on sound empirical data. Only one institution maintained active and ongoing efforts to screen for the presence of illicit drugs.

In general, hospital or other institutional policies concerning the detection of drug exposure are incorporated into protocols that hospital staff members are expected to follow. The development of protocols and guidelines has progressed at widely varying rates across and within the institutions we visited. Indeed, the process tends to vary considerably by department. Departments of social work and pediatrics have acknowledged the problem in every institution, while obstetric departments have been less inclined to do so.
Implementation of accepted guidelines was frequently hampered by a host of practical concerns, procedural rules, and other considerations. For example, we found that there was often substantial confusion about whether or not the guidelines were mandatory for all patients and whether there were sanctions for inappropriate use or nonuse. Neither was it clear in several cases who, if anyone, was responsible for implementing the protocol or monitoring its use.

There was considerable consensus about the incentives and disincentives surrounding detection of drug use. Many interviewees believed that drug detection simply had a low priority and was less significant than other pregnancy-related or institutional problems. Ordering toxicology screens would tend to increase the number of days a baby had to remain in the hospital when institutional policy specified that infants must remain until the toxicology screen clears (shows no evidence of drug metabolites). Such detection efforts thus impose excess costs on the hospital. These costs are often not covered by third-party payors (e.g., insurance or government entitlements).

Issues of consent and personal liberty were often voiced as a disincentive to drug detection. Specifically, providers were unclear about the legal requirements for obtaining informed consent when screening mothers and infants. They also expressed uncertainty about the issue of a patient’s right to privacy. Lack of sufficient drug treatment resources to handle increased numbers of identified substance-exposed patients was frequently noted by respondents as a disincentive to detecting drug exposure. “What good will it serve to identify these women when they stand little chance of receiving treatment for their addiction?” queried one.

The mechanical and technical aspects of undertaking toxicologic screening on pregnant women and newborns emerged as unexpected disincentives to the detection of drug exposure. Some incentives were also discussed. The ability to provide appropriate treatment and follow-up may surface as the most important incentive for health care providers and the institutions in which they practice to test actively for drug use. The fact that none of our respondents suggested prevention of poor pregnancy outcome, fetal growth retardation, or other fetal damage as incentives for drug detection is striking.

CONCLUSIONS
For the most part, maternal and fetal substance use detection policies are not being developed or implemented in the institutions that we visited. Despite awareness of the general issue of substance use in pregnant women and their neonates, health care providers
in our preliminary survey only rarely translated this awareness into formal data collection efforts or formal policies at the hospital level.

The limited current involvement of the health care system in detecting prenatal substance exposure presents a major conceptual challenge to policymakers concerned with pregnant women at high risk of substance use. There appears to be no obvious institutional point of intervention, aside from the health care system, to prevent or mitigate the use of illicit substances: Many of these women are school dropouts, thus little affected by school-based drug use programs, and seem equally alienated from other social institutions. By default, the health care system is a primary point of contact for these women. Yet, the health care system seems at best a reluctant participant in this effort.

SOME POLICY QUESTIONS

One of the central policy questions raised by our study is this: Given limited treatment options and the significant costs associated with screening, should hospitals develop drug detection policies? That is, should hospitals bear the burden of detecting and reporting maternal substance use? There are multiple reasons why there is a public policy imperative for health care institutions to develop substance use detection policies that govern provider behavior.

Detection policies have the potential for improving health outcomes. Obtaining drug use information would seem necessary both for proper therapeutic intervention and for appropriate referral. To the extent that substance use can be dealt with at an earlier stage of pregnancy, there is at least the potential to reduce harm to the fetus. This might also limit the potential costs of maintaining substance-impaired neonates in need of intensive neonatal care. Finally, taking voluntary action allows health care providers to control policy development rather than having policy imposed by the state.

A second policy question asks: Should detection protocols be required? Should their contents be specified? If so, by whom and under what circumstances?

A final question, dependent on the first two, concerns the level from which policy concerning detection should emanate. For different reasons, both federal- and state-level policies could be effective. Should national policies be developed or should they be a state responsibility?
ACKNOWLEDGMENTS

The authors wish to acknowledge the support of Barbara Williams and Peter Reuter of RAND's Drug Policy Research Center, and the willing cooperation of the health care providers interviewed during the study.
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1. INTRODUCTION

Illicit substance use among pregnant women and the effects of substance exposure on neonates are generating increased public policy attention. As the social costs and administrative burdens on public institutions mount, so does public pressure for action.

Most of the policies and programs generated in response to this pressure have been of two kinds: hands-on programs to help substance-exposed children overcome their poisoned legacy and punitive policies that define and prosecute substance use during pregnancy as a criminal offense or that define it as child abuse.¹

Little attention has been devoted to prevention or early detection of substance use during pregnancy. The vast majority of prenatal substance exposure cases are identified at the time of birth, when the mother or neonate presents with signs or symptoms consistent with drug involvement. This late identification shifts the focus of intervention from improving pregnancy outcomes to protecting the infant from potential maltreatment and ameliorating the effects of prenatal exposure.

Neither has there been much research on physician response. The limited literature suggests that the reluctance of physicians to assume an active role in the detection of prenatal substance exposure may be due, in part, to a lack of policies and procedures for systematically identifying drug-exposed women and infants in health care institutions (Government Accounting Office [GAO], 1990). Virtually no studies have examined this topic or the personal and policy factors that inhibit or facilitate provider willingness to detect substance use.

Our research was designed (1) to generate exploratory data about health care provider response to prenatal substance exposure and (2) to examine current substance detection policies and practices in health care institutions. We begin with a brief review of the literature on the prevalence of prenatal substance use, the effects of prenatal exposure, and the context of drug detection. Then we present study methods and our data on physician and hospital response. We end with a set of conclusions about physician response, hospital policies, and appropriate directions for future research.

¹For a recent review of state activity around this issue, see Larson (1991), pp. 72–84.
2. THE SCOPE AND CONSEQUENCES OF PRENATAL SUBSTANCE USE

Good data concerning the prevalence of prenatal substance use are not readily available. Most estimates of illegal drug use focus on women of child-bearing age rather than on pregnant women. For example, in the 1985 National Household Survey on Drug Abuse (National Institute on Drug Abuse [NIDA], 1988), 32 percent of women aged 18–25 and 18 percent of those 26–34 reported using marijuana during the previous year. Estimates of cocaine use in the previous year were 12 percent for those 18–25 and 8 percent for those 26–34. An updated estimate based on NIDA’s 1990 National Household Survey on Drug Abuse suggests that 4.5 percent of pregnant women aged 12–34 may have used cocaine during pregnancy, and 17.4 percent of the same group may have used marijuana during pregnancy (Gomby and Shiono, 1991). High nonresponse rates suggest that these figures may underestimate exposure.

Those few studies that examine the proportion of pregnant women using drugs present a broad range of estimates. The National Hospital Discharge Survey estimates that 13,765 drug-affected infants were born in 1988. The prevalence of illicit drug use among women seeking prenatal care in Pinellas County, Florida, was estimated at 14.8 percent (Chasnoff, Landress, and Barrett, 1990). Other studies place the national estimate of drug use during pregnancy at 11 percent (Chasnoff, Chisum, and Kaplan, 1988). National hospital survey estimates range from 0.4 to 27 percent, with an overall prevalence of 11.9 percent (Chasnoff, 1989).

These studies are subject to a number of biases that need to be considered in arriving at prevalence and incidence estimates. Many studies rely on self-report measures, which are believed to lead to serious underreporting of drug abuse by mothers (Amaro, Zuckerman, and Cabral, 1989). Studies which base their estimates of drug use on medical records may be even more subject to downward bias due to provider reluctance to record information that is perceived as both nonmedical and potentially incriminating. For example, the release of such information may result in legal or other punitive action against the mother, e.g., termination of parental rights.

Other factors complicate prevalence estimation. Patterns of use, both in terms of type of drug and frequency of use, differ greatly among the metropolitan areas in the United States (Reuter et al., 1988), and among racial and ethnic groups (Community Epidemiology Work Group, 1988). The data available about the prevalence of drug use among pregnant women come predominantly from hospitals that serve poor inner city populations (Bailey,
1987; Osterloh and Lee, 1989). There are no available estimates of drug use among pregnant women in suburban and rural populations, and few among women of higher socioeconomic status (Chasnoff, Landress, and Barrett, 1990). And the estimates of drug use are confined in most cases to populations of women who receive some prenatal care, suggesting that overall prevalence of prenatal drug use may be higher. These data suggest that maternal substance use merits concern. Better data are needed to clarify the scope of the problem across diverse populations.

EFFECTS OF PRENATAL SUBSTANCE USE ON INFANT AND CHILD HEALTH

The common-sense notion that drug use during pregnancy increases the risk of poor pregnancy outcomes is supported by the results of a number of studies. These data, summarized below, amplify concerns raised by the findings of prevalence data on maternal substance use. Most studies of the effects of prenatal substance exposure involve only a small number of births and thus have limited power to detect increased risk of infrequent (though nonetheless devastating) outcomes. Small sample sizes make it difficult to control for the effects of other drugs or for the many other risk factors (e.g., alcohol and cigarette use, poor nutrition, limited prenatal care) typically associated with use of illegal substances. For example, a large retrospective study in Boston found significantly higher rates of premature delivery, low birth weight, and major malformations among the infants of women who reported cocaine use during pregnancy than among those who reported no cocaine use. When tobacco and alcohol use, race, maternal age, and primiparity were controlled, however, only the association of cocaine use with major malformations was statistically significant (Frank, Zuckerman, and Amaro, 1988).

Often, multiple drug use is ignored in assigning women to categories, so that outcomes cannot be unequivocally attributed to the drug that is the focus of a particular study (Doering et al., 1989). Use of self-report data that are not validated with other measures exacerbates this problem (Zuckerman et al., 1989).

Despite these important constraints, the literature is clear that substance use during pregnancy increases the risk of poor pregnancy outcomes. In particular, research on cocaine reveals three adverse outcomes: malformations, growth abnormalities, and behavior problems (Doering et al., 1989). While the effects of other drugs during pregnancy are less well-known, such substances as methamphetamines and marijuana also have been implicated in poor outcomes (Little, Snell, and Gilstrap, 1988; Fried, 1985).

These research data suggest that, in some cases, drugs are associated with consequences that are both severe and enduring. It is also clear that some infants avoid
long-term damage, and some may be spared any consequences of their mother's drug use (e.g., Rajegowda et al., 1991; Billman et al., 1991). But information about probabilities and about dose-response effects is limited, despite its obvious importance to policy development and change.

HEALTH CARE COSTS FOR SUBSTANCE-EXPOSED INFANTS

Substance-exposed infants also impose substantial costs on the health care delivery system. Because of the difficulties associated with identifying and following substance-exposed infants, accurate estimates of the costs of care are not available. It has been established, however, that the treatment of affected infants is expensive. Infants born to mothers who use drugs are more likely to have significantly low birth weight and are often delivered prematurely. Consequently, they often have longer, more complicated hospital stays than infants with no drug exposure.

In a recent GAO study (GAO, 1990), substance-exposed infants were more likely to have increased hospital stays. Hospital charges for these infants were substantially greater than charges for their nonsubstance-exposed counterparts.

The fiscal impact of prenatal substance exposure extends well beyond the cost of the initial hospitalization. These costs include long-term medical follow-up, as well as supportive services from child welfare, education, and other systems. Although the true financial impact is difficult to assess, Department of Health and Human Services analyses project that the annual cost of hospital and educational care for the nation's substance-exposed infants could be as much as $20 billion (Wagner, 1990).
3. RESPONSES TO MATERNAL SUBSTANCE USE

PHYSICIAN AND HOSPITAL RESPONSE

Concerns about the health and well-being of substance-exposed women and children theoretically provide strong motivation for health care providers to identify and treat these individuals and for hospitals to establish policies that encourage their doing so. Medical problems associated with drug use during pregnancy have increased interest among state policymakers and health care providers in reducing prenatal drug use and preventing the negative consequences of prenatal drug exposure. Some view improved detection and, in some cases, reporting of substance-using pregnant women and exposed neonates as a means of achieving these ends.

The literature on hospital-based prenatal substance use policies is extremely limited, but there is evidence to suggest that procedures for systematically identifying substance-exposed women and infants are lacking in most health care institutions (GAO, 1990). Consequently, decisions about whether or not to test for drug use and, if found, whether and how to respond to it, are left to individual health care providers.

PRENATAL CARE

There is little question that prenatal care is one of the most effective and cost-effective medical interventions available (Rosenblatt, 1989). Studies have repeatedly documented that funds expended in the prenatal care of mother and fetus reduce (often by a factor of two or three) the amounts spent later in attempts to rescue low birth weight babies and babies born with problems that might have been detected and corrected during prenatal visits (e.g., Gortmaker, 1981). Moreover, evidence indicates that comprehensive prenatal care provided to drug-using pregnant women—even in the absence of drug treatment—is effective in improving pregnancy outcome (MacGregor et al., 1989).

The relatively low cost and political popularity of prenatal care would suggest that it is easily accessible and should be heavily utilized, but this is far from the truth. In 1985, 24 percent of all mothers did not receive prenatal care until after the first trimester; 6 percent received care only in the third trimester or not at all (Rosenblatt, 1989). Mothers of substance-exposed infants are more likely than other mothers to have inadequate prenatal care. Available data indicate that anywhere from 29 to 70 percent of drug-using women receive inadequate prenatal care, compared to 8 to 34 percent of the general population of pregnant women. Access is limited, because many health insurance policies provide
inadequate coverage, and many poor women are uninsured (Braveman et al., 1988; Rosenblatt, 1989).

Access to prenatal care is also reduced because fewer and fewer physicians provide it (Robertson, 1988). Indeed, a crisis of availability of obstetric services is emerging (Robertson, 1988). Private practitioners who do provide obstetric services are increasingly reluctant to provide them to poor women who rely on Medicaid. One consequence of this reluctance is that poor women are forced to seek care at a small number of overcrowded public hospitals (Braveman et al., 1988). Because of the huge demand, the timing and quality of prenatal care have suffered substantially in these institutions. Moreover, Medicaid eligibility requirements have grown more restrictive in recent years, although new federal efforts to expand its net should help to reverse these trends. In addition, people with less education, lower household income, and lack of health insurance are less likely to receive preventive health services of all sorts, including screening for breast cancer, high blood pressure, cervical cancer, and glaucoma (Braveman et al., 1988). The implication of these findings for our study is that the women we are most concerned about—low-income drug users—are probably less likely than other women to begin prenatal care early.

Even when prenatal care is received, the structure and goals of traditional prenatal care may be inconsistent with the detection and elimination of drug problems. Physicians, for instance, focus on the prevention of medical problems and spend less time and attention on psychosocial risk factors, including drug use. This focus has led to the current structure of prenatal care, in which the timing of visits has been heavily weighted toward the third trimester, a time when drug effects may have already damaged the fetus (Public Health Service Expert Panel, 1989). Thus, attention is diverted from the psychosocial elements of pregnancy, and drug use in particular, that may have more direct relevance to maternal and infant outcomes (Rosenblatt, 1989).
4. DETECTION OF DRUG USE

Before prenatal substance use can be treated or even acknowledged, it must be detected. Given probable maternal contact with the health care delivery system at some point during a pregnancy, and physicians' authority and credibility with regard to patient behavior, the health care system provides a potentially important opportunity to detect and respond to prenatal substance exposure.

METHODS AND TIMING

Perhaps the most objective measures of drug abuse are toxicologic assays for the presence of drug metabolites in the body fluids of pregnant or delivering mothers and their neonates. Urine screens are the most widely used measure in hospital settings, because they are typically easier to perform, less messy, and also may be less likely to transmit severe infections than other methods. Despite their potential for providing more accurate and detailed information about the temporal pattern of drug use, stool assays are less commonly used, in part because of collection difficulties.

For the most part, there are two obvious points at which drug exposure may be detected during prenatal care: upon presentation with an obstetric complication or upon presentation with manifestations thought to be associated with drug use (in the mother or infant) at the time of delivery. Drug screening during the delivery of routine prenatal care may be triggered by an admission of drug use on direct questioning; by particular characteristics which the provider may associate, appropriately or inappropriately, with drug use (e.g., race, low income, occupation); or, with some practitioners, as a routine part of screening for all patients. The last circumstance is rare, but may be practiced in communities with a particularly high prevalence of drug use. If the screening is initiated during the course of prenatal care, a specimen is usually obtained in the practitioner's office, or the patient is sent to a nearby lab to deliver a specimen. If the screening is accomplished at any of the other points of contact described above, the specimen is obtained in the hospital.

THE IDENTIFICATION PROCESS

Identification of illicit substance use in individuals seeking health care is often a difficult and sensitive issue for both the patient and the health care provider. Apart from the highly personal nature of such an inquiry (which may make providers as reluctant to take a drug history as patients are to provide it), the technical and legal ramifications of the discovery of drug use may further undermine the willingness of patient and provider to share
this information. These ramifications of drug use detection are amplified in the case of drug use during pregnancy.

TECHNICAL ISSUES

Technical issues, although minor, have been at the center of many debates about the utility of drug detection efforts. These issues center around the inability of most detection methods to allow an accurate description of an individual's pattern of drug use over an extended period of time. For example, attempts to take a simple verbal history of drug use are subject to selective reporting and memory loss by the patient. History taking, which utilizes general questions (e.g., "Do you use any drugs?") rather than specific, directed questions (e.g., about the type, frequency, and route of administration of drugs), produces less accurate responses.

Even when an objective diagnostic test, such as urine toxicology screening, is used to determine drug exposure, the accuracy of the test depends primarily on the specific assay technique utilized and on the actual timing of drug use. For example, the Enzyme Multiplied Immunoassay Technique (EMIT), the most commonly used screening test, is rapid and quite sensitive, but in the past has suffered from a relatively high rate of false positives. (Specificity has been improved by new methods to extract over-the-counter, amphetamine-related compounds, which were the previous source of most false positives.) Additionally, the utility of these techniques is highly dependent on the timing of the assays with respect to drug use and on the metabolism-clearance rate of the particular drug. In the normal adult population, cocaine and amphetamines can only be detected within 24 to 72 hours of use, heroin within 24 hours, and so on. While the metabolism of most substances is slower in newborns than in adults, it must be remembered that, prior to birth, toxins to which a fetus is exposed are essentially disposed of by the mother's system, through the placenta. There are diagnostic methods that provide accurate information about a longer history of exposure (e.g., radio immunoassay of hair), although these methods are costly and unavailable for routine use. The obvious implication is that available diagnostic techniques are only able to provide information about recent drug exposure.

LEGAL ISSUES

The relationship between a drug-using pregnant woman and the fetus presents unique and difficult legal challenges. Both the state and the health care provider have an interest in the health of the mother and the fetus, but pressuring a claim on behalf of one may conflict with the rights and interests of the other. That is, the state and the courts must balance a woman's right to privacy and control over her body during pregnancy against the state's right
to protect the health of the fetus (Jessup and Roth, 1988; Larson, 1991). Several commentators have described the tensions among confidentiality, informed consent, and reporting requirements (see, e.g., Larson, 1991; Vandervine, 1989; Jessup and Roth, 1988; Sherman, 1988).

Developing health care provider detection and referral policies thus involves three important and unsettled legal issues: (1) What are appropriate detection policies? (2) Is informed consent required for testing? and (3) What are the sanctions if substance use is detected?

Currently, there is no consistency across states in how to resolve these issues. Although some recently enacted legislation mandates when a toxicology screen should be administered, most state laws do not address how and when hospitals or physicians should initiate drug detection and identification policies (Fortney, 1990). A number of states have put the interests of the fetus first, by enacting legislation to define drug exposure as child abuse, thus bringing prenatal substance use under the child abuse reporting mandate that exists in every state (Zellman and Bell, 1990). Of those states that have amended the child abuse laws to include prenatal substance exposure as child abuse, there appear to be two primary approaches (English, 1990). Some states, such as Massachusetts and Florida, use the addictive model, requiring a child abuse report if the neonate is drug dependent or addicted. Others, such as Illinois and Minnesota, use a positive toxicology screen model, requiring a child abuse report if a toxicology screen of the mother (either prenatally or at time of delivery) or of the child is positive. A variant of the positive toxicology screen model is to require a child abuse report whenever drug exposure in utero is discovered. ²

Equally unsettled is whether the mother must consent to any substance use screening practices, either for herself or for the child. The common-law doctrine of informed consent requires that a patient be informed of the risks and benefits of medical intervention and consent to any bodily invasion prior to the procedure. This allows the mother to act on behalf of herself and the child. The informed consent doctrine raises three legal issues that affect detection policies. First, does either the general consent form signed on admission to the hospital or medical necessity imply consent to testing? Second, what information must be imparted to fully inform the mother? In a state, for instance, that prosecutes maternal

²Courts may impose reporting requirements as a result of prenatal substance exposure in jurisdictions that have not enacted legislation. For example, in California, there is no specific legislation defining prenatal drug exposure as child abuse. Nevertheless, in the case of In re Troy D, 263 Cal. App. 3d 889 (1989), the court held that juvenile courts have jurisdiction to protect substance-exposed infants, stating that prenatal use of dangerous drugs is probative of future child neglect (p. 874).
substance use, must the mother be informed that a positive toxicology screen may result in criminal prosecution? Third, under what circumstances can testing be undertaken over the mother's objections? Although there are literally thousands of cases on informed consent generally, there appear to be no reported cases resolving these issues. The law provides little guidance for hospitals in determining detection policies.

States may also choose to mandate consequences when substance exposure is detected. There are several potential consequences once a report is filed. First, the woman might be referred to treatment. Second, she might be referred to criminal court for prosecution. (In some jurisdictions, such as Florida, Georgia, and Michigan, reports must be made available to local prosecutors, who have arrested women for delivering drugs to a child.) Third, the case might be referred to family or juvenile court for a determination of parental rights. In some states, legislation may determine the consequences, while in others, these consequences are determined by policies and procedures of local and state investigative agencies (such as Child Protective Services [CPS]).

ATTITUINAL ISSUES

Professional norms may reduce the motivation to detect drug use. Research in other areas of health care reveals that health care providers are somewhat reluctant to question patients about their psychosocial problems or their health-related habits, such as smoking, and may fail to insist that patients practice health-promoting behaviors, e.g., weight control (Wells et al., 1984). The same reluctance may well hold or even be greater for substance use in pregnant patients, where positive results may impel a provider to become actively involved in this psychosocial problem.

Provider reluctance may also be based on higher principles. The ethical principle of beneficence requires a health care provider to offer the therapy that best promotes the patient's health while, at the same time, minimizing harm. Providers who believe that drug detection will discourage future participation in prenatal care or otherwise undermine candor and honesty in the provider-patient relationship may be reluctant to make any efforts to detect drug use. It was doubtless these concerns that led the American Academy of Pediatrics to state that it is unethical to perform drug screening for the primary purpose of detecting illegal use (American Academy of Pediatrics, 1989).

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3Recent intermediate appellate court decisions in Florida and Michigan overruling criminal prosecution cast doubt on the long-term viability of the criminal prosecution strategy.

4At the same time, lack of detection may undermine fetal health.
Unfortunately, there have been few, if any, systematic attempts to ascertain whether involvement in prenatal care or provider-patient relationships have been adversely affected by efforts to detect drug exposure among infants and pregnant women. There have been only a few cursory attempts to examine health care provider substance detection behavior or the factors that inhibit or facilitate provider willingness to make these efforts. Nor have there been studies of hospital and clinic policies concerning the detection and prevention of substance abuse. The exploratory research described below begins to fill this gap. Our research was designed (1) to generate exploratory data about health care provider response to prenatal substance exposure and (2) to examine current substance detection policies and practices in health care institutions. Our focus was to understand the process of and impediments to the development and implementation of substance detection policies. In the course of semistructured interviews with 17 health care providers and hospital administrators, we learned how selected providers and hospitals currently respond to the issue of fetal substance exposure and the factors influencing that response.
5. METHODS

In 17 semistructured interviews in a purposive sample of five hospitals in two California counties, we interviewed obstetricians, pediatricians, nurses, administrators, and Suspected Child Abuse and Neglect (SCAN) team social workers.\(^5\) We also conducted a preliminary review of state legislation and policy relevant to these issues.

**SELECTION OF HOSPITALS**

Given the exploratory nature of the study, a statistical sampling procedure was ruled out. Instead, we drew a purposive sample designed to maximize both the breadth of our results and the amount we could learn from each institution (Murphy, 1980). Based on our prior work with medical institutions and services, we determined that it was essential to capture three dimensions in our sample: institutional type, selected patient characteristics, and geographic location. In particular, we wanted to include (1) both private and publicly funded hospitals, as well as health maintenance organizations; (2) hospitals that served patient populations that varied in socioeconomic status; and (3) hospitals with highly urban or suburban catchment areas. In our small sample, we could not include all combinations of these three factors, but we selected the hospitals that we would visit to ensure that, taken together, they did represent some variation on each of these dimensions.

**SELECTION OF RESPONDENTS WITHIN HOSPITALS**

Within hospitals, we interviewed pediatricians, obstetricians, nurses, administrators, and Suspected Child Abuse and Neglect (SCAN) team social workers.\(^6\) These staff members were chosen because they are most likely to face issues of drug use and drug exposure in their work. The choice of individual respondents was opportunistic: We attempted to interview heads of obstetrics, pediatrics, and pediatric nursing, but agreed to interview

\(^5\)Although a substantial amount of prenatal care is delivered in clinics and doctors' offices, we focused on hospitals for several reasons. First, most substance use detection occurs at delivery, which continues to occur in hospitals for the most part. Second, we reasoned that the likelihood of a policy response would be greater in hospitals than in other locations with less surveillance. Third, given the limited resources at our disposal, the likelihood of finding respondents easily was much greater in the hospital setting.

\(^6\)In institutions with moderate to large inpatient pediatric services, groups of personnel are employed to triage and serve as consultants in cases of suspected child abuse and neglect. SCAN is one acronym commonly applied to this group of individuals and will be used generally throughout this document to refer to those hospital personnel involved in the disposition of abuse and neglect cases.
whoever was willing to see us if senior staff were not available. Hospitals varied considerably in the degree of enthusiasm that staff displayed for our efforts, a variation that seemed to relate to the level of hospital concern about these issues.

INTERVIEWS

Face-to-face interviews were conducted using an interview guide developed by the investigators. The guide included semistructured questions and topics to be covered in the interview, as appropriate. Topics included characteristics of the hospital and its patients, estimates of drug use prevalence in the hospital population and in the surrounding community, prevalence of drug exposure in neonates, and policy and protocols around these issues.

LIMITATIONS OF THE ANALYSIS

Two limitations of the analysis should be made explicit. First, since our sample of hospitals and providers was not representative, we cannot presume to generalize our findings beyond our sample. Second, we have made no attempt to give equal weight to the data that we gathered. As we anticipated, some respondents and institutions were more knowledgeable about and involved with substance use in pregnant women than others.
6. FINDINGS

This section begins with a description of the hospitals we visited. We then discuss the level of awareness and concern in these hospitals about the problem of drug exposure during pregnancy. A discussion of current policies and practices around this issue follows. The section closes with a discussion of incentives and disincentives that our respondents identified that may impact a provider's decision to explore drug use in pregnant patients.

HOSPITAL CHARACTERISTICS

The five hospitals we visited varied in terms of type, patient characteristics, and size (as indexed by the number of deliveries yearly), as shown in Table 1. In each of the hospitals we visited, some efforts had been made to explore the dimensions of the drug problem in their own patient populations. But in most instances, the decision to explore the dimensions of the problem of drug exposure during pregnancy was an individual rather than an institutional one.

In two hospitals, SCAN team social workers were the first to collect information on substance-exposed pregnancies. The social worker at Institution A brought the issue to the attention of the SCAN team when she realized that 50 percent of CPS referrals were for substance-exposed infants. In contrast, a social worker at Institution D decided to investigate maternal drug use when she concluded that the number of referrals to CPS was too low (9 per 5,500 live births). This concern was heightened by the fact that the prevalence of prenatal drug exposure at a sister institution with a similar patient population was significantly higher. She believed that the low percentage reflected the unwillingness of health care providers in the hospital to assess drug exposure among women and neonates.

Although the obstetricians whom we interviewed were uniformly aware of the problem of substance-exposed infants, in only one of the institutions were staff from the department of obstetrics actively involved in assessing the extent of the problem in their own hospital (B). This department undertook anonymous toxicologic testing of all women presenting for labor or delivery during a three-month period to estimate the prevalence of drug use among delivering women. In another institution (C), the department of obstetrics had developed a "master plan" for the assessment and referral of drug-using pregnant patients. However, the plan was not in use because "resources did not exist to implement the plan," according to one respondent, who was the chief of obstetrics. In neither of these two institutions was obstetrics actively involved in ongoing efforts to assess drug exposure in the pregnant
population at the time of our interviews. The obstetric staff in the remaining three institutions (A, D, E) simply did not believe that drug use was a significant (enough) problem in their population to warrant screening.

Table 1

<table>
<thead>
<tr>
<th>Key Characteristics of Hospitals Visited</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deliveries per year</td>
<td>&gt; 2500</td>
<td>&gt; 2500</td>
<td>&gt; 2500</td>
<td>&gt; 2500</td>
<td>&gt; 2500</td>
</tr>
<tr>
<td>Hospital type</td>
<td>Private/</td>
<td>Public/</td>
<td>Public/</td>
<td>HMO</td>
<td>Public</td>
</tr>
<tr>
<td></td>
<td>nonprofit</td>
<td>nonprofit</td>
<td>nonprofit</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>teaching</td>
<td>teaching</td>
<td>teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Percent patient population</td>
<td>40%</td>
<td>95%</td>
<td>95%</td>
<td>3%</td>
<td>96%</td>
</tr>
<tr>
<td>low SES</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient race/ethnicity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African-American</td>
<td>30%</td>
<td>8%</td>
<td>10%</td>
<td>12%</td>
<td>17%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>10%</td>
<td>89%</td>
<td>85%</td>
<td>30%</td>
<td>42%</td>
</tr>
<tr>
<td>White</td>
<td>60%</td>
<td>3%</td>
<td>5%</td>
<td>55%</td>
<td>37%</td>
</tr>
<tr>
<td>Other ethnic</td>
<td>3%</td>
<td>4%</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Data collection</td>
<td>None</td>
<td>3 months,</td>
<td>Ongoing</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1989</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


The pediatricians whom we interviewed were uniformly aware of the increase in drug exposure among pregnant women and neonates both generally and to some extent within their own institutions. Indeed, we found that a good deal of the activity around this issue either originated or was supported by departments of pediatrics. For example, seminars and training efforts for hospital personnel were offered within the pediatric departments of institutions A, B, and C. Efforts to develop standards and guidelines for addressing the
problem of prenatal drug use were initiated by pediatrics departments at all of the institutions surveyed.

DATA COLLECTION

Estimates of the prevalence of substance-exposed pregnancies were rarely based on sound empirical data (see Table 1, Row 4). Only one institution (C) maintained active and ongoing efforts to screen for the presence of illicit drugs in this population. This is a public, teaching facility serving a population that is largely indigent and minority. At the other institutions, data collection efforts were limited to those initiated by SCAN team personnel. These efforts were largely made to encourage recognition of the problem among health care providers and to ignite interest in the development of institutional standards and guidelines for screening.

In the two institutions in which systematic data collection had never been undertaken (A and D), physicians relied on low numbers of referrals to the SCAN team to justify not establishing guidelines or policies toward drug detection.

The most common way of assessing substance exposure in our sample institutions was by urine assay. These assays are usually initiated by nursing staff (registered nurses, nurse practitioners, and home health nurses). In teaching hospitals, nurses share this role with house officers (interns and residents). Nurses who initiate a screen must eventually get a physician’s signature for it. This approval often comes after the test has been done.

According to one nursery director, “this sequence of events frequently results in poor or inadequate documentation of the original indication for screening.” Such documentation is important, because it indicates which other diagnostic tests should be undertaken given a particular set of symptoms and because it helps in clinical monitoring of the course of withdrawal symptoms. If the test is obtained on the infant, which is the more common scenario, consent for the test usually is not obtained from the parent. If the infant’s screen is positive, efforts are often undertaken (particularly at institutions C and D) to obtain informed consent to screen the mother. Screening of the pregnant woman as the index patient occurred rarely in institutions A, B, and D, while it was more frequent at C, where a list of indications for testing exists. In this facility, efforts are made to communicate positive results on the mother to the pediatric staff for appropriate follow-up and possible testing of the infant.

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7This is undoubtedly due to the fact that nurses and house officers have more “hands-on” contact with patients than private practitioners, who may see their patients one time daily, or attending faculty, whose patient contact also tends to be limited.
In summary, only one of the hospitals in our survey collects prevalence data on an ongoing basis. Decisions about who to screen are based on a list of signs and symptoms developed by hospital staff. In the other institutions, screening is done on an ad hoc basis.

PROTOCOL DEVELOPMENT

In general, hospital or other institutional policies concerning the detection of drug exposure are incorporated into protocols that the hospital staff is expected to follow. The content and scope of such protocols vary widely, as discussed below, but may include any of the following:

- Recommended guidelines for history-taking
- Indications for toxicologic testing (signs and symptoms)
- Specific procedures for obtaining specimens
  - Personnel designated to initiate testing
  - Consent requirements
  - Type, amount, and storage of specimen
  - List of substances to be screened
- Recommendations for addressing positive toxicologic screens
- Requirements and recommendation for referrals
- Documentation requirements
- Guidelines for release of information
- Guidelines for additional risk assessment.

The development of protocols and guidelines has progressed at widely varying rates across and within the institutions that we visited (see Table 2). Indeed, the process tends to vary considerably by department. Departments of social work and pediatrics have acknowledged the problem in every institution, while obstetric departments have been less inclined to do so. In Institutions A and D, obstetric staff pointed to the low numbers of positive toxicologic screens as evidence of the nonexistence of a problem, without questioning the circumstances under which those screens were obtained or the percentage of deliveries screened.

In all five of the institutions that we visited, discussions about protocol development had occurred. In all cases, these discussions included at least the departments of pediatrics and social work; obstetrics had been involved in these discussions in two of the institutions.8

8These discussions did not always include physicians; in such instances, nurses represented the department.
Table 2
Phases of Protocol Implementation by Institution and Department

<table>
<thead>
<tr>
<th>Phases</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Problem definition</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Social work</td>
</tr>
<tr>
<td>Social work</td>
<td>Social work</td>
<td>Social Work</td>
<td>Social work</td>
<td>Pediatric nurses(^a)</td>
<td>Obstetric nurses(^a)</td>
</tr>
<tr>
<td>Obstetrics</td>
<td>Obstetrics</td>
<td>Obstetrics</td>
<td>Social work</td>
<td>Social work</td>
<td>Pediatric and obstetric nurses</td>
</tr>
<tr>
<td>Discussion</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Pediatrics</td>
<td>Public health nurses</td>
</tr>
<tr>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
<td>Pediatric and obstetric nurses</td>
</tr>
<tr>
<td>Obstetrics(^b)</td>
<td>Obstetrics</td>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
<td>Mental health dept. staff(^c)</td>
</tr>
<tr>
<td>Implementation</td>
<td>Pediatrics</td>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
<td>Social work</td>
</tr>
</tbody>
</table>

\(^{a}\)No physicians are involved from these departments.

\(^{b}\)The obstetrics department in this institution had developed a protocol for the assessment of prenatal drug exposure among the obstetric population in the 1970s. That most recent revision of this protocol occurred in 1976 and is not currently in use.

\(^{c}\)These discussions were not undertaken by the departments, but were part of the work of a local perinatal substance abuse coalition.

The discussion phase invariably presented challenges. A key challenge involves often sharply differing opinions about which pre- and post-natal indicators should determine the need for a toxicologic screen, a product of uncertainties in the literature regarding specific prevalence of associated medical complications. These differing views forced groups in institutions A and B to convene multiple meetings and draft multiple iterations of a protocol. Decisions about further assessment and referrals may also be a source of controversy. The lack of good data about the efficacy of treatment and effective treatment approaches for mothers and infants, combined with the limited availability of treatment, has led to differing views about the importance of additional assessment and the value of specific referrals.
Indeed, all of the obstetricians with whom we spoke told us that limited access to treatment and the lack of information about treatment successes in this population discouraged them from pursuing drug histories and from expending further energy in developing guidelines for drug detection. None expressed the belief that their behavior might have a salutary effect.

Only one facility (C) had completed and received formal approval for a drug detection protocol. This protocol was used in the pediatric department only, addressing such issues as indications, specimen collection, consent, procedures for addressing a positive result, and documentation requirements. Interestingly, this is the same facility that engages in ongoing data collection efforts. Respondents in institution C believe that the fairly high prevalence of drug exposure documented in these data has been important in motivating protocol development and use.

Social services personnel at the HMO (D) were using a protocol developed by a sister institution (in another county). Members of the social service department had obtained the protocol to create guidelines for assessment and referral of substance-exposed pregnancies to CPS. A secondary intention was to share the protocol with the departments of pediatrics and obstetrics, but this had not yet occurred.

At another institution (A), a private teaching hospital, the pediatric department had proposed comprehensive guidelines for testing, assessment, and referral to a joint practice committee consisting of obstetric, pediatric, and nursing personnel, only to have those guidelines summarily rejected by the obstetric faculty, who had not been included in the development of the guidelines.

Only two hospital administrators were available for interview. Despite the very different characteristics of the two hospitals they led, these administrators had strikingly similar views of prenatal drug exposure. They believed prenatal drug exposure did not require a formal policy response for two reasons. First, both believed that obstetricians would always seek drug use information from appropriate patients. Second, each was certain that when an obstetrician learned of a patient's drug use, he or she would educate the patient about the risks associated with such use and take other appropriate action. Finally, both believed that patients presented with this information would immediately change their drug use behavior.

The congruence of opinion between these two administrators is striking. So are the logical implications of their shared view:

- There is no need for administrative involvement in the doctor-patient relationship on the substance use issue.
• Obstetricians can be trusted to look for and respond to substance use in their pregnant patients.9

• These women, once informed by their doctors of the risks associated with prenatal substance exposure, will cease using substances through the duration of their pregnancies.

These views and their implications are consistent with our finding of no administrator involvement in any phase of protocol development in any of the hospitals in which we interviewed. They also fit comfortably with an important reality of hospital administration, described by an administrator at hospital A: Hospitals tend to have more control over medical management of newborns than over the medical management of women on obstetric services.

PROTOCOL IMPLEMENTATION

A substantial amount of data across a number of substantive areas reveals that implementation of new policies is a far from straightforward process (e.g., Berman et al., 1977; McLaughlin, 1987, 1990). Our data are consistent with these studies. We found that the implementation of protocols was rife with problems and that the degree of implementation varied substantially across departments and specialties.

Implementation of accepted guidelines was frequently hampered by a host of practical concerns, procedural rules, and other considerations. For example, we found that there was often substantial confusion about whether or not the guidelines were mandatory for all patients and whether there were sanctions for inappropriate use or nonuse. Neither was it clear in several cases who, if anyone, was responsible for facilitating the implementation of the protocol or monitoring its use.

We found differences across specialties in the degree of willingness to implement existing guidelines that mimicked those we found with regard to protocol development. Obstetricians generally were least eager to implement protocols. In fact, at three institutions (A, D, and E), obstetricians had actively resisted pediatricians' efforts to involve them in using protocols. In one of these institutions, the pediatric department had developed drug detection protocols, which the obstetrics department refused to implement. This lopsided use

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9It is conceivable that an obstetrician with knowledge of a patient's substance use could be liable for medical malpractice for failing to advise the patient about the consequences to herself and the fetus of continued substance use. This requires additional legal research to confirm. To the best of our knowledge, no such litigation has been brought.
of a protocol often resulted in detection of exposure in newborns, but no comparable data on the mother.

Although most obstetricians readily acknowledge that they care for two patients—the mother and fetus—during the pregnancy, they view the screening of newborns as direct interference in their physician-patient relationship. Additionally, obstetric providers at the private institution (A) expressed fears about losing patients (to other providers) if it became known that they screened for the presence of illicit drugs.

Nonobstetricians, especially pediatricians and nurses, were much more willing to implement drug detection policies, as shown in Table 2. They were less concerned than obstetricians with fears of losing patients and more concerned than obstetricians about missing substance-exposed newborns who might require special services.

At another facility (D), the SCAN team adopted and followed specific guidelines about the referral of such cases to CPS, even though no detection protocols existed for use by the providers of medical care. Because of the lack of guidelines for use by clinical personnel, only the most egregious cases of substance exposure were identified. Patients who were disruptive, behaving inappropriately, or otherwise appeared to be under the influence of substances were the only ones tested.

Those respondents who were most actively involved in protocol development and implementation believed that support from hospital administration and health care providers (e.g., obstetricians, pediatricians, nurses, and social support personnel) is essential to the development and effective implementation of drug detection guidelines. Encouragement and approval by hospital administrators was reported in the only institution with a comprehensive protocol, but was lacking in those that did not have protocols. A social worker at one of the hospitals encountering difficulty in getting beyond the discussion phase of protocol development commented that “external pressure from hospital administration or even a regulating body like JCAHO\textsuperscript{10} will be needed before we get anything done.”

\textbf{INCENTIVES AND DISINCENTIVES}

Despite the differences among specialists concerning the importance of implementing drug detection policies, there was considerable consensus about the incentives and disincentives surrounding detection of drug use. Many interviewees believed that drug detection was simply a low priority and of lesser significance than other pregnancy-related or institutional problems. Ordering toxicology screens would tend to increase the number of

\textsuperscript{10}Joint Commission on the Accreditation of Health Care Organizations.
days a baby had to remain in the hospital when institutional policy specified that infants must remain until the toxicology screen clears (shows no evidence of drug metabolites).

Such detection efforts thus impose excess costs on the hospital. These costs include longer stays, increased diagnostic services, increased need for nursing and physician intervention, and involvement of additional hospital personnel (e.g., social work, security). These costs are often not covered by third-party payors (e.g., insurance or government entitlements). In fact, drug detection protocols in two public institutions and one HMO required that infants be held pending the toxicology result, and even longer if the result were positive. These periods significantly exceeded the time that infants normally remain in the hospital. According to respondents in these institutions, these discharge delays often bear no relation to the actual symptoms or health needs of the patient, but invariably increase staffing requirements and costs.

The confounding of etiologic factors, any or all of which may have an impact on pregnancy outcome, often was cited as justification for downplaying the usefulness of drug screening of pregnant women and newborns. Such things as no prenatal care, diabetes, poor nutrition, and twin or other multiple gestations were both more variable and more closely linked to poor pregnancy outcomes, according to several respondents.

Issues of consent and personal liberties were often voiced as a disincentive to drug detection. In two instances (A, D), these concerns were voiced more often during the interview than concerns about poor pregnancy outcome. Specifically, providers were unclear about the legal requirements for obtaining informed consent when screening mothers and infants. They also expressed uncertainty about the issue of a patient's right to privacy. One institution has retained legal counsel to assist in addressing these and other legal issues prior to the adoption of any drug detection guidelines. Personnel affiliated with private institutions in particular raised questions about losing standing (and patients) in the professional community for pursuing or not pursuing drug detection among patients.

Lack of sufficient drug treatment resources to handle increased numbers of identified substance-exposed patients was frequently noted by respondents as a disincentive to detecting drug exposure. "What good will it serve to identify these women when they stand little chance of receiving treatment for their addiction?" queried one of several practitioners who cited the limited availability of appropriate drug treatment for pregnant women. The chief of clinical social work at one of the larger institutions we visited indicated that the hospital's social support services were becoming "very rapidly overwhelmed by the numbers of substance-exposed infants." Furthermore, government-based social services departments
are “grossly understaffed to handle this problem, which often results in case ratios [for Child Protective Services workers] of 70–80:1,” said this same supervisor.

There was wide variance in response between respondents working in public and private facilities, and between high and low delivery volume facilities with regard both to the perceived importance of detection and to the limitation of resources. Respondents at private facilities were more often concerned with the impact that such practices would have on the ability to attract new patients and retain existing ones. Administrators at these facilities were much more willing to defer to the wishes of the medical staff than those in public facilities, according to respondents. Administrators in public facilities seemed much more willing to suggest or even dictate provider practices (e.g., through hospital policies). Public institutions were also concerned with the need to turn over delivery beds and bassinets in a timely manner.

The mechanical and technical aspects of undertaking toxicologic screening on pregnant women and newborns emerged as unexpected disincentives to the detection of drug exposure. The practical difficulties of obtaining body fluid samples (usually urine) from newborns were repeatedly noted by physicians and nurses. Infants may have limited urine output during the first 24 hours of life, necessitating multiple collections over time. Additionally, although adapted for newborns, the collecting devices used for obtaining urine samples are fraught with mechanical difficulties, which result in spillage and contamination with other body secretions (e.g., excrement). This further undermines the collection process. Interim metabolism of drugs may subsequently limit the sensitivity of samples collected in this manner.¹¹ Still other problems arise at institutions that do not have laboratory facilities to perform toxicologic screens. Travel considerations (e.g., spillage) necessitate specimen volumes in excess of what would be required by an on-site facility (revisiting the problems cited above). In addition, the turnaround time required to obtain test results from an outside laboratory often results in an increased length of stay for a patient suspected of drug exposure, as noted above. These difficulties often engender frustration and lack of cooperation among personnel responsible for obtaining toxicology screens.

Although disincentives to drug detection were raised more often, some incentives were also discussed. A number of the providers with whom we spoke have begun to view information about drug exposure status as necessary to facilitate more specific diagnostic and therapeutic interventions and to allow the provider to advocate more effectively for the

¹¹It is interesting to note that most of these problems are manifest in infant testing. Testing of pregnant patients would avoid at least some of these problems, but other issues, discussed above, appear to preclude most prenatal toxicology screens.
health and other needs of substance-exposed patients. Indeed, the ability to provide appropriate treatment and follow-up may surface as the most important incentive for health care providers and the institutions in which they practice to actively test for drug use. The fact that none of our respondents suggested prevention of poor pregnancy outcome, fetal growth retardation, or other fetal damage as incentives for drug detection is striking.
7. CONCLUSIONS

In view of the small sample size, our conclusions are both preliminary and tentative. We will, however, suggest the types of obstacles that need to be addressed before detection policies can be implemented successfully. We can also suggest relevant policy questions that should be considered in subsequent research and policy formulation.

GENERAL OBSERVATIONS

For the most part, maternal and fetal substance use detection policies are not being developed or implemented in the institutions that we visited. Despite awareness of the general concern about substance use in pregnant women and their neonates, health care providers in our preliminary survey only rarely translated this awareness into formal data collection efforts or formal policies at the hospital level. Because prevalence data are not routinely collected in these hospitals, administrators and physicians remain uncertain about the extent of the problem in their institution. Drug detection protocols are considered reluctantly and are rarely developed and implemented systematically. Because hospital administrators do not appear to be leaders on this issue, policy development often depends on a concerned person, usually a nurse or pediatrician. As a result, drug detection occurs largely on an ad hoc basis that varies considerably across hospitals.

Although its dimensions are as yet uncertain, the fact of considerable prenatal substance use is beyond doubt. Ironically, the problem’s scope and dimensions are uncertain in part because detection policies and appropriate data collection systems have not been implemented in hospitals. Our data suggest that few hospitals maintain adequate data that could be used to estimate substance use prevalence, to estimate the costs of caring for substance-exposed neonates, or to develop drug detection protocols. Our data also reveal that hospitals serving a largely poor and minority patient population may be paying greater attention to substance use detection. As a result, the probability of detection of prenatal substance use is greater among poor, minority women, despite the fact that substance use is presumed to occur in all socioeconomic categories (Chasnoff, Landress, and Barrett, 1990).

There are several reasons why hospitals serving a predominantly poor and minority patient population might proceed differently from other hospitals. First, drug use in poor communities is often far more visible than it is in more affluent ones. This contributes to provider concerns that many poor patients are at high risk of substance exposure. Second, few, if any, patients in public hospitals have private doctors. As discussed above, private
physicians may respond quite differently to the possibility of substance exposure in their patients than doctors in public hospitals. Finally, the relationship between hospital administrators and providers may be different when those providers are private physicians. Our limited data can only suggest these possibilities; more systematic data must be collected to adequately examine this apparent difference and the factors that may explain it.

One reason for the absence of consistent detection policy appears to be a lack of guidance from relevant community agencies. Respondents reported little communication between health care and protective services agencies about the detection of substance exposure. At least some state legislatures\textsuperscript{12} have amended (or are considering amending) child abuse reporting laws to include maternal substance use as evidence of child abuse, hence requiring a child abuse report. The county CPS agencies that served the hospitals in which we interviewed, however, had not conveyed any policy to our respondents and had reportedly made no special efforts to involve the health care system in detecting such use. The major exceptions were mandated reports of suspected child abuse made to protective agencies, often by members of SCAN teams. Respondents often felt that these reports were made too late and served little purpose; several noted that families they had reported received no services at all. As with the public hospital system, these agencies are already inundated with child abuse reports. The lack of communication that we observed may reflect inadequate staffing or little incentive to increase caseloads.

The limited current involvement of the health care system in detecting prenatal substance exposure presents a major conceptual challenge to policymakers concerned with pregnant women at high risk of substance use. There appears to be no obvious institutional point of intervention aside from the health care system to prevent or mitigate the use of substances: Many of these women are school dropouts, thus little affected by school-based drug use programs, and seem equally alienated from other social institutions. By default, the health care system is a primary point of contact for these women; yet, this system seems at best a reluctant participant in this effort. The health care system potentially bears a major share of the enormous costs of treating substance-exposed neonates: This would seem to offer sufficient incentive to develop drug detection and response policies. But our results suggest that this may not be the case.

\textsuperscript{12} A recently enacted California law, Senate Bill No. 2669, should expand drug treatment and prevention programs in California, but would not change existing dependency and neglect dispositions. The bill will, however, require certain changes in child abuse reporting laws (specifically, that a positive toxicology screen alone is not grounds for a child abuse report) that could, over time, alter the types of drug cases now being decided under the dependency and neglect procedures.
DISINCENTIVES OUTWEIGH INCENTIVES

At present, it appears that the disincentives to developing detection and response policies far outweigh the incentives for doing so. Aside from the technical disincentives previously discussed, such as the technical aspects of testing, many respondents raised important practical and philosophical barriers to detecting substance use. For one thing, most were concerned that, since treatment services were at best limited, what was the point of detecting substance use? Indeed, many were concerned that in the current climate such policies could lead to referral for criminal prosecution, which would do little to improve health or family outcomes. For another, significant costs are associated with detection. In addition to the costs of the screening tests themselves, there are potentially large administrative costs for implementation. In addition, some physicians are concerned that confronting their patients with positive results will lead to a loss of business. In short, the costs appear significant and immediate; the benefits seem limited and remote.

The apparent reluctance of obstetricians to participate in detection policy development and implementation creates additional problems. At several of our interviews, pediatricians and nurses indicated a willingness to develop appropriate detection protocols, but reported having met considerable resistance from obstetricians. Without strong leadership from hospital administrators, such resistance is likely to be a serious institutional impediment to the development and implementation of detection protocols. Obtaining such administrative support may not be easy without pressure from either state and local agencies or national accrediting bodies.

SOME POLICY QUESTIONS

One of the central policy questions raised by our study is this: Given the limited treatment options and the significant costs associated with screening, should hospitals develop drug detection policies? That is, should hospitals bear the burden of detecting and reporting maternal substance use? There are multiple reasons why there is a public policy imperative for health care institutions to develop substance use detection policies that would govern provider behavior.

Detection policies have the potential for improving health outcomes. Obtaining drug use information would seem necessary both for proper therapeutic intervention and for appropriate referral. To the extent that substance use can be dealt with at an earlier stage of pregnancy, there is at least the potential to reduce harm to the fetus. This might also limit the potential costs of maintaining substance-impaired neonates in need of intensive neonatal
care. Finally, taking voluntary action allows health care providers to control policy development rather than having it imposed by the state.

A second policy question asks: Should detection protocols be required? Should their contents be specified? If so, by whom and under what circumstances? A key aspect of any protocol is that risk and the need for detection be assessed fairly, so that all patients displaying a given set of signs and symptoms have an equal probability of undergoing detection and an equal probability that positive toxicology findings are reported.\textsuperscript{13}

A final question, dependent on the first two, concerns the level from which policy concerning detection should emanate. For different reasons, both federal- and state-level policies could be effective. Should national policies be developed, or should they be a state responsibility?

Given the leverage that federal funding has on hospitals, a uniform set of federal policies is most likely to ensure equal detection probabilities. For example, the JCAHO could make such protocols a condition of hospital accreditation. This has the advantage of providing reasonably uniform policies that would mitigate some of the disincentives described above (particularly the threat that patients would switch obstetricians if toxicology screening is ordered). Or, national physician specialty societies (such as ACOG) could issue advisory protocols that would specify the circumstances under which drug detection should be attempted.

But the reality that child abuse reporting is regulated under state laws limits the potential for a national policy response. Instead, state legislatures might be the appropriate bodies to develop consensus concerning drug detection. There are many who argue that evidence of drug exposure should never be considered alone in determining child abuse or neglect (Jessup and Roth, 1988; Bay, 1990). In this event, even state legislatures may be limited in their response. Alternatively, state hospital and medical societies could issue policies or could work with state and county officials to develop policies that would provide incentives to detect and treat substance use.

\textsuperscript{13}Some child abuse reporting data suggest that there are social and economic biases in reporting (Hampton and Newberger, 1985; Zellman, 1992).
REFERENCES


