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A Study of Appropriate Methods of Drug Abuse Education for Use in the WIC Program

FINAL REPORT:
A STUDY OF APPROPRIATE METHODS OF DRUG ABUSE EDUCATION FOR USE IN THE WIC PROGRAM

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EXECUTIVE SUMMARY

This Report has been prepared in response to the Congressional mandate (the Anti-drug Abuse Act of 1988 P.L. 100-690) for a study of "appropriate methods of drug abuse education instruction" for use in the Special Supplemental Food Program for Women, Infants and Children (WIC). Administered by the Food and Nutrition Service (FNS), of the U.S. Department of Agriculture (USDA), WIC is a federal nutrition assistance program that serves approximately 4 million women, infants and children nationwide. Following the completion of this Report, the Secretary of Agriculture is required to "prepare materials for the purposes of drug education...and to distribute the materials...to each State agency for distribution to local agencies participating in the program...."

Introduction

Drug Abuse During Pregnancy

Comprehensive national data on the prevalence of drug abuse (including abuse of alcohol, tobacco, and other drugs) among pregnant women are sparse. To fill this gap, the National Institute on Drug Abuse (NIDA) has recently begun a national study of in utero drug exposure.

Reports from various drug treatment programs, clinical observations, and national surveys indicate that alcohol and other drug use among pregnant women is a serious problem that is growing. For example, recent results from a survey conducted by the Select Committee on Children, Youth and Families show the incidence of drug-exposed newborns to range between 4 and 18 percent of all live births. Moreover, the percentage of newborns exposed to drugs in utero increased at some hospitals by more than 200 percent from 1987 to 1988.

Although vague on the prevalence of alcohol and other drug use, the literature is quite clear on the effects of drug use during pregnancy. The use of illicit as well as licit drugs (e.g., alcohol, tobacco, over-the-counter medications) is associated with a myriad of negative consequences for both the woman and her child. First, the increased risk of obstetrical complications exacerbates the already severe health problems

associated with drug and alcohol abuse. Second, in utero exposure to alcohol and other drugs has a powerful effect on the health of the fetus and, in some cases, has long-term developmental consequences as well. Third, women who abuse drugs and alcohol place themselves and their children at greatly increased risk for a host of other problems, including criminal prosecution, related dysfunctional behavior (e.g., prostitution), and exposure to acquired immunodeficiency syndrome (AIDS) and a variety of other infectious diseases. Finally, drug users are far more likely to abuse and neglect their children than nonusers, thereby further increasing any developmental damage that may have resulted from in utero exposure to drugs.

The Role of WIC

The WIC Program provides supplemental foods, nutrition education, and referrals to health and social services for pregnant, breastfeeding, and postpartum women and infants and children (up to age five) who are at nutritional risk. Although not currently required in WIC, some State and local agencies have taken the initiative to incorporate providing drug abuse information into existing program operations. Nutrition education has been deemed particularly important in this regard since many drugs can suppress the appetite.

As described in the legislative mandate and the accompanying floor colloquy, the role of WIC in drug abuse education is intended to be limited to the provision of information and, for participants who need help, referral to providers of drug abuse services. Specifically, the role of State and local WIC agencies should be to:

- raise awareness of the dangers of drug abuse by disseminating information to all adult participants and the parents or caretakers of infant and child participants;
- conduct screening of participants only to the extent necessary to determine whether there is possible alcohol and other drug use; and
- facilitate access to professional assessment and treatment, as appropriate, by providing referrals to available community programs.

As intended by Congress, WIC staff are not required to assess the extent of individual drug abuse problems, provide counseling, or attempt to treat chemically dependent women. These important services should be provided by trained drug and alcohol professionals.

Furthermore, it should be noted that many local WIC agencies will not be able to refer their participants to alcohol and other drug treatment programs because of shortages in available services, location, cost, or eligibility requirements.

Finally, the introduction or expansion of existing drug abuse information and referral activities should not reduce or impair existing nutrition education programs, or any of the other vital aspects of current operations.

Characteristics of WIC Participants

To develop appropriate drug abuse information and referral methods, certain characteristics of WIC participants must be recognized. First, in Fiscal Year 1988, 13.9 percent of enrolled participants were pregnant women. Evidence suggests that women who become pregnant are often more likely than their nonpregnant peers to change their drug-using behavior. Few women initiate drug use during pregnancy, and many of those who are early-stage users quit or reduce their use of harmful substances. Pregnancy is considered a bench mark period in a woman's life. Research indicates that behavior frequently changes at such a transition time when the individual moves from one life situation or role to another. During pregnancy, women are thought to be more receptive to messages urging them to adopt a range of healthy behaviors.

Although never using drugs is the ideal, quitting or reducing use during pregnancy is of substantial benefit to both the mother and the child. It is also likely that WIC participants, having made the investment to seek out and obtain WIC benefits, are concerned about their health and that of their children. Consequently, they may be more motivated than their peers and more likely to alter their behavior if exposed to an informational program.

Second, WIC participants are generally young, economically disadvantaged, and poorly educated. Substantial numbers belong to ethnic minorities

and speak English as a second language. To exert an impact on this population, any information provided should be suitable for persons with low literacy skills. It also should reflect the diversity of ethnic and cultural backgrounds represented in the WIC Program and should be available in the foreign languages used by participants.

Finally, for many participants, WIC provides an opportunity to receive not only necessary supplemental foods, but also appropriate referral to prenatal care. In the absence of WIC, these women might forgo such care or seek services only at the very end of their pregnancies. Consequently, drug abuse prevention efforts must not deter women from entering the WIC Program, a result that would clearly undermine the intended benefits of the mandated drug education activities.

Study Scope

This study of appropriate methods of information dissemination and referral is based on a number of sources:

- a wide-ranging manual and computerized review of the literature on drugs and pregnancy and approaches to drug abuse prevention and treatment;

- a review of Federally-supported research and program demonstration grants on drug abuse related to prevention, women, high-risk youth, and ethnic-minority populations;

- descriptive program materials and evaluations supplied by FNS and selected local WIC programs, community-based drug and alcohol abuse treatment programs, AIDS prevention programs, providers of prenatal services, and teen pregnancy programs;

- consultation with representatives from the Office of Maternal and Child Health (who discussed their own projects and a cooperative initiative on pregnant substance abusers conducted jointly by Maternal and Child Health and the Office of Substance Abuse Prevention); the National Healthy Mothers, Healthy Babies Coalition; the national office of the March of Dimes; and the Office of the General Counsel of the Alcohol, Drug Abuse and Mental Health Administration; and

- a review of health education materials related to providing information to populations with low literacy skills.

The rest of this summary describes the results of this study and recommendations for the WIC Program.

Information Dissemination

Person-to-person communication is the most effective way to convey information, especially on such a sensitive subject as drug abuse. But, to work properly, the person providing the information must be trusted by the client, able to communicate in the client's native language, and capable of establishing the necessary rapport with the client. Personal contact should also be supplemented and reinforced by print or audiovisual materials, or both, geared specifically to the interests of WIC participants.

Characteristics of Information Provided

Information must be presented in a positive, nonthreatening manner. Research has shown that fear- or guilt-inducing messages can have little effect on the intended target audience. Negative information can confirm the hopelessness of a person's current situation and convince her of the futility of change. Although information provided to WIC participants should state that abstinence from illegal drugs, tobacco and alcohol is the best course for pregnant women to follow, reducing levels of use yields substantial benefits to mother and child and should be strongly encouraged.

Information should also be relevant to the culture and life situations of the intended audience. The more an individual can identify with the information being conveyed, the more likely she is to receive the intended message. An attempt should be made to involve participants in setting agendas for group educational sessions, evaluating the relevance of the information provided and identifying areas of unmet need. Information efforts should reflect the specific drug abuse problems that are most likely to be affecting a local WIC agency's clients. In addition, since nonusers and nondependent users respond differently to information than chemically dependent users, both audiences should be considered when selecting and developing

information materials. Once the characteristics of the target audience are known (i.e. the number of users vs. nonusers), the program should be directed to the majority.

Finally, information should be easily understood by the recipients. This may mean using languages other than English and materials at a low reading level. When possible, materials should also use common jargon and slang rather than clinical terminology.

Methods of Communication

Research has shown that the use of a variety of communication methods is preferable because individuals differ in their learning styles. However, for many WIC agencies, a multimedia approach may be prohibitively expensive. This section reviews each of the major approaches, with recommendations for each.

Print. Although currently available print materials have not proven effective with low-income persons having low literacy skills, print materials do afford a number of important advantages. Printed documents are relatively inexpensive, portable, capable of being shared (especially among family members), available for use at any time by the client, and can provide lists of resources that can be contacted for help. If print materials are used, they should be visually appealing; use short, conversational sentences, an active voice, and familiar vocabulary; and employ simple, clear illustrations to increase visual appeal and reinforce important concepts and messages.

Graphics. As used in posters and other print materials, graphics can be appealing and can help clarify and reinforce important messages. However, such items tend to be more expensive than simple printed materials. Their appeal is also subjective: what might work with one individual may be rejected by another. Consequently, care should be taken when selecting graphics for use in an informational activity. Viewers should be able to identify with the visual images. Images and captions should be simple, clear, and direct. These materials should be pretested with the target audience.

Audiovisuals. Although expensive, films and videotapes can be very effective with persons with

low literacy skills. Visual images and the spoken word are excellent substitutes for reading, which may be very difficult for some clients. Unfortunately, many currently available films are not appropriate for WIC participants. In selecting audiovisuals, WIC should ensure that the messages, language, and situations portrayed are relevant so that participants can relate their own life experiences to those depicted.

Screening and Referral

It is important to identify persons who may be using drugs and to refer them for assessment and specialized assistance. Identification of suspected drug and alcohol abuse has been termed the first step in treating the problem. However, to be effective, local WIC agencies must be willing to ask questions about drug and alcohol use, have adequate information about available sources of professional assessment and assistance, and have a viable system for making referrals and for involving participants actively and appropriately in the referral process. Questions should be asked at the time of certification or recertification to determine if the participant may have a problem with alcohol or other drugs. Connections with community-based service providers should be established and participants should be supported in their efforts to pursue referrals. Perhaps the most important benefit derived from an active effort to forge linkages among referring agencies and assessment and treatment resources is improved case management.

Screening Questions

Screening questions for drug abuse should be embedded where appropriate within the nutritional history so they appear natural and nonthreatening. Because the literature shows that personal contact plays such an important role in conveying information to the target population, and because chemically dependent women tend to misreport their drug and alcohol use, self-administered screening questionnaires are not recommended.

Making Referrals

If responses to screening questions indicate that alcohol or drug abuse may be a possibility, an immediate referral for assessment should be made. The need for referral should be expressed in positive terms, and the participant's involvement in deciding on the referral agency should be encouraged.

Referral for further assessment, even when the referral is rejected, is a powerful method for penetrating the denial practiced by alcohol and drug abusers and signals that the problem is an urgent matter and should be taken seriously.

Regardless of whether a referral is accepted or rejected, a simple notation should be made indicating that a referral was suggested and, if accepted, when and to whom the referral was made.

Following Up Referrals

If resources permit, local WIC agencies should follow up on referrals. This information could then be used by WIC staff to support participants' efforts to control their drug and alcohol problems. Where multiple services (including WIC) are lodged under one roof, local WIC agencies should explore the possibility of developing cooperative information and referral activities. Ideally, the referral organization should send the local WIC agency a form or contact the agency by telephone to report that the referral appointment has been kept.

Barriers To Treatment

In some areas, existing barriers to treatment will make it impossible for WIC participants to receive the services they need. Location, hours, cost, language spoken, staff composition and availability of child care are factors influencing whether a low-income woman can participate in treatment. Other issues, such as fear of prosecution for child abuse or neglect, also pose obstacles for chemically dependent pregnant women in some states.

Required Staff Training

Training staff in the effects of drugs and alcohol on pregnancy and in methods of providing information, conducting a screening, and making a referral is essential if information and referral services are to be effective. WIC staff may feel anxious about asking sensitive questions about socially disapproved or illegal behavior. Experientially based training could alleviate much of this concern. Experientially based training simulates "real-life" screening and referral situations through role playing, then applies the techniques developed in a series of genuine interviews which are observed and/or reviewed as case studies during weekly staff meetings.

In some communities, drug and alcohol abuse treatment programs frequently are equipped to provide training

services to social service organizations and to serve as consultants and mentors to agency staff. Tapping existing drug and alcohol programs for training services would be cost-effective, would ensure that the training provided covered problems specific to a community's population, and would be the first step in creating a link to available drug and alcohol programs for referrals.

A local agency lacking such resources should consider a combined training program using a self-instructional manual along with training consultation from a community mental health center or public health agency. FNS is developing a manual which will provide information about the effects of alcohol and other drugs as well as guidelines for providing information, conducting screenings, and making referrals. Skilled personnel from mental health and public health agencies could demonstrate how they educate clients and how they screen and refer. A training videotape, which could be developed by FNS specifically for WIC staff, is another option that should be considered to enhance screening and referral skills.

General Recommendations

- WIC program responsibility should be limited to information and referral.
- Drug abuse prevention activities should be nonthreatening.
- Information and referral efforts should reflect the characteristics of WIC participants.
- Information efforts should be tailored to the types of drug abuse problems typically found in the community.
- Drug abuse information should be provided through personal contact.
- Information activities should distinguish nonusers and nondependent users from chemically dependent users.
- Local WIC agencies should establish linkages with local drug abuse services.

- Local WIC agency staff should be trained in providing drug abuse information and referral services.

- WIC State agencies should develop drug abuse referral procedures for implementation at local agencies.

- Participants should be screened for referral to needed services.

- USDA should develop a videotape and a brochure on drugs and pregnancy for WIC participants and a resource manual and a videotape for WIC professionals on providing drug abuse information and conducting referrals.

1. INTRODUCTION

This chapter reviews the Congressional mandate to add drug abuse information and referral activities to the Special Supplemental Food Program for Women, Infants and Children (WIC) and presents an overview of WIC operations. Throughout this report, the term "drug abuse" refers to the misuse of alcohol, tobacco, and other drugs, including marijuana, sedatives, hypnotics, tranquilizers, cocaine and other stimulants, opiates and synthetic narcotics, phencyclidine, inhalants and solvents.

The Congressional Mandate

The Anti-drug Abuse Act of 1988 (P.L. 100-690), enacted November 18, 1988, amended Section 17 of the Child Nutrition Act of 1966 to add drug abuse education to the existing requirements of the WIC Program. The key features of the amendments are as follows:

- Drug abuse education in the WIC Program is limited to the provision of information and materials to WIC participants and, in the case of suspected drug abusers, referral to drug abuse clinics, treatment programs, counselors, or other drug abuse professionals.

- Materials and instruction on drug abuse must be provided in languages other than English in areas where a substantial number of participants speak another language.

- Drug abuse information and referrals should be available to all pregnant, postpartum, and breastfeeding women and the parents or caretakers of participating infants and children.

- States are required to document in their annual plans how they intend to coordinate their drug abuse information and referral activities with existing education, counseling, and treatment programs.

To support the States' efforts to enhance existing drug abuse information and referral activities in the WIC Program and integrate new ones, the Secretary of Agriculture is required by the amendments to "conduct a study with respect to appropriate methods of drug abuse education instruction" within six months after

the enactment of the legislation. Following the completion of this study, the Secretary is further required to "prepare materials for purposes of drug abuse education" and to "distribute the materials...to each State agency for distribution to local agencies participating in the program...."

The floor colloquy accompanying the legislative changes provides additional information on Congressional intent. First, drug abuse information and referral efforts are not supposed to reduce or impair existing nutrition education programs, or any of the other vital aspects of current operations. Further, to ensure maximum effectiveness, the Congressional sponsors envisioned that the development of drug abuse education materials would not begin until after the completion of the mandated study.

Second, the role of local WIC agency staff with regard to drug abuse education was expected to be relatively modest. As stated by Senator Leahy[1], providing materials to participants and making referrals to clinics or treatment programs are probably a part of existing operations. The largest cost was expected to be related to the production and distribution of materials, which, as noted, are to be the responsibilities of the Secretary and the State agencies. Most important, as Senator Leahy clearly stated, "The bill does not require regular WIC staff to perform drug abuse counseling. This very important function should be provided to WIC participants with drug or alcohol problems by drug or alcohol clinics or treatment programs." The role of WIC agencies, therefore, is to provide information, and, when necessary, to facilitate the provision of professional assistance by making referrals to available community programs.

This report is intended to achieve four objectives:

- provide insight into drug abuse among WIC participants and its implications for the outcomes of pregnancy;

- review the state of the art in preventing drug abuse and evaluate the applicability of relevant strategies and techniques to the WIC Program;

[1] Congressional Record - Senate, October 21, 1988, p. S17316.

- provide information on the availability of treatment programs for pregnant women; and

- recommend specific strategies for drug abuse information and referral efforts in WIC agencies.

The first item is the subject of Chapter 2; the second and third objectives are addressed in Chapter 3; recommendations are provided in Chapter 4.

Overview of WIC

The WIC Program, administered by the Food and Nutrition Service (FNS), U.S. Department of Agriculture (USDA), is a Federal nutrition assistance program, serving approximately 4 million women, infants, and children nationwide. It provides supplemental food, nutrition education, and referrals to health and social services to pregnant, breastfeeding, and postpartum women; infants; and children up to age five. Participants must be from low-income households and at nutritional risk.

The Program is operated by State Health Departments and Indian Tribal Organizations and their local service delivery agencies. WIC funds are distributed by FNS to the States which, in turn, allocate monies to local agencies. About 20 percent of all funds appropriated to WIC are designated for nutrition services and program administration.

Federal regulations provide guidelines on WIC services and on qualifications for competent professional authorities (CPAs), the health professionals and trained paraprofessionals responsible for determining individual eligibility for services. However, within these Federal guidelines, State and local program administrators have wide latitude to design their operations to meet State and local needs and objectives.

Eligibility For WIC

Eligibility for WIC is determined along three dimensions--categorical qualifications, nutritional risk, and financial need. First, individuals must fall within one of the eligible participant categories, that is, pregnant, postpartum, or breastfeeding women; infants; and children up to age five. Second, individuals must meet income eligibility standards established by the State in which they reside. Finally, they must be determined by a CPA to be at nutritional risk, as shown by

medical or nutritional assessments. As a group, WIC participants are young (close to two-thirds of the pregnant women are under the age of 24), have low incomes (about two-thirds have incomes below the poverty line), and belong disproportionately to minority groups (more than half are nonwhite) (130).

Because WIC is not an entitlement program, in 1979 FNS established a priority system intended to guide the distribution of benefits to persons most in need. Each participant is assigned to one of six or seven priority groups, which reflect the degree of nutritional risk. Priorities I, II, and III are for the participants at highest nutritional risk as demonstrated by hematological or anthropometric measurements or other documented nutritionally related conditions. Participants with dietary risks alone are assigned a lower priority.

Local Agencies

State WIC agencies contract with local sponsors to provide WIC services to eligible participants. Based on data for 1986, about 43 percent of local WIC programs are sponsored by county health agencies, 36 percent are sponsored by State, district, community, municipal, or Indian health agencies, and hospitals account for another 5 percent of local sponsors. About two-thirds of local service sites provide on-site health care services (130).

Some local WIC programs offer services at only one site, operating five days a week. Other WIC programs operate several permanent sites five days a week. Still others provide services at one or more permanent sites and at satellite locations for a few days or a few hours each month (these satellite clinics are generally not co-located with public health services).

WIC Services

WIC service delivery at the local agencies can be grouped into five operational functions:

- Certification, which includes taking applications and screening applicants, determining eligibility based on income and nutritional risk, and terminating eligibility.

- Nutrition education, which encompasses counseling individuals, conducting group sessions, preparing nutrition education materials and plans, and conducting staff training in the provision of nutrition education.

- Referrals to health and social service agencies, which include assisting WIC participants in gaining access to health care and related services as well as helping WIC participants obtain other social services.

- Food delivery, which includes tasks associated with delivering food or food instruments to participants as well as assigning and tailoring food packages. Supplemental food is provided to WIC participants through retail, home, or direct delivery systems. Most States operate retail delivery systems in which participants receive food instruments (vouchers, coupons, or checks), which they redeem at authorized retail vendors. In home delivery systems food is delivered to participants' homes, usually through contracts with dairies. Where direct delivery systems are used, food is distributed to participants at central pickup sites.

- Outreach, which encompasses providing publicity about WIC benefits and the WIC Program to potential participants, food vendors, health care providers, and social service agencies.

The three WIC functions that deal most directly with drug information and referral are certification, referrals and nutrition education.

Certification. Federal regulations specify the general guidelines for certifying applicants or recertifying participants for the WIC Program. Local WIC staff known as competent professional authorities (CPAs) determine eligibility based on income and nutritional risk. Much of this information is obtained through individual interviews conducted by the CPA with applicants/participants. As part of the interview, the CPA collects basic health information, conducts a dietary assessment, and explains the WIC program. In some WIC agencies, staff perform health status assessments--usually fingersticks for hematocrits--at this stage. In others, data is obtained from outside health care providers. Supplemental food packages also are prescribed as part of the certification process.

Referrals. Local WIC agencies provide referrals to a range of other services, such as child immunizations, well-baby and well-child care, and obstetric health care. For the most part, however, such referrals are informal and there is little, if any, follow-up or

documentation of referral activities[2]. In some local agencies, lists of sources of locally available health and social services are given to WIC participants or are made available in waiting rooms. In local agencies that are co-located with health service providers, WIC staff sometimes help participants make appointments for other services or even take participants to other clinics. But even in these instances, there is limited follow-up and documentation of referrals.

Nutrition Education. State WIC agencies are required to spend at least one-sixth of their administrative funds for nutrition education. Most funds are spent on labor wages and fringe benefits for staff in local WIC agencies. Nationwide, State WIC Programs spend about 12 percent of their nutrition education budgets on informational materials (54).

Each WIC participant must be offered a minimum of two nutrition education contacts during each certification period; about one-fourth of all local services sites exceed this minimum requirement (62). WIC regulations specify that "nutrition education shall be designed to be easily understood by participants..., bear a practical relationship to participant nutritional needs, household situations, and cultural preferences..., be thoroughly integrated into participant health care plans..., and is to be taught in the context of the ethnic, cultural, and geographic preferences of the participants and with consideration for educational...limitations experienced by the participants."

State WIC agencies are responsible for providing ongoing staff training and identifying or developing nutrition education resources. A number of States have procured and prepared materials aimed at specific categories or subcategories of WIC participants (pregnant teenagers, e.g.); some even provide audiovisual materials and equipment (62).

[2]Little data currently exist on the nature and extent of referrals in the WIC Program. This discussion is based on unpublished information obtained as part of a national study of the use of WIC funds for nutrition education and administration. Abt Associates, Inc., conducted this study in 1987.

Local agencies are responsible for providing nutrition education services directly to participants. A variety of staff provide nutrition education: about half are nutritionists, dietitians, or home economists; more than 20 percent are nurses, public health workers, or social workers; and the remaining 25 percent are paraprofessionals (8% are clerical staff). About 11 percent are high school graduates, 27 percent have gone beyond high school but not received college degrees, 45 percent have bachelor's degrees, and about 18 percent have graduate degrees (62).

Nutrition education is provided through either individual counseling or group classes. Although individual sessions sometimes focus on general topics (prenatal diet, e.g.), these sessions often involve nutritional counseling directed toward the individual's specific needs and risks. Group sessions, in contrast, are often organized for participants with common needs. There may be one class for prenatal participants and another class for mothers of infants, for example. Some agencies prepare monthly or bimonthly classes on specific topics.

About two-thirds of WIC service sites use individual counseling, about two-thirds use displays or distribute print material, and about one-fifth use group sessions. When nutrition education is provided through a group session, the class is most likely to be small (two to nine participants). During individual sessions, participants are most likely to be given pamphlets and watch demonstrations with food models; at group sessions, slides, films, and flip charts are occasionally used (62).

An individual session usually lasts about 15 minutes; the typical group session lasts about 20 minutes. A participant who receives the two required contacts per certification period receives an average of 32 to 52 minutes of nutrition education (62). Agency staff cover a range of topics in these sessions, including general program administration; obstetric health care; dietary needs during pregnancy and lactation; meal planning; and, for caregivers, dietary needs of infants and children (62).

Most (93%) WIC service sites provide nutrition education at the time of certification, about 52 percent coordinate nutrition education with food instrument pick-up or food delivery, and about 21

percent coordinate sessions with scheduled medical visits (62). Because nutrition education is not compulsory, clients must be allowed to obtain their WIC food packages even if they refuse to participate in nutrition education. Therefore, the only sure points of access to WIC participants are at certification, recertification, and food instrument pickup.

The most frequently used locations for nutrition education are the office (79%) and the waiting room (55%); about 30 percent of the service sites use classrooms or conference rooms. When nutrition education is provided during waiting periods, it usually involves the use of audiovisuals--often continuous loop films or videotapes.

Current Drug Abuse Information and Referral

There are no data that measure the extent of current drug abuse information and referral activities in local WIC agencies. However, in mid-1988, State agencies provided information to FNS about policies and practices regarding alcohol and other drug referrals and information. In general, it appears that:

- Most agencies include the use of alcohol, tobacco, or other drugs as a risk criterion for program eligibility.
- Many agencies currently make referrals to an alcohol or drug counseling program if an individual is identified as being in need of assistance.
- Printed materials (pamphlets, fact sheets, and posters) on drug abuse are available in some agencies. These materials are often obtained from alcohol and drug abuse agencies or private organizations such as the March of Dimes.
- A few agencies have begun to use audiovisuals related to alcohol and other drug use.
- Some States have implemented training programs on alcohol and other drug use for local agency staff.

Although providing drug abuse information was not previously required in WIC, many State and local agencies have taken the initiative to incorporate this activity into program operations.

2. DRUG ABUSE AMONG PREGNANT WOMEN: PREVALENCE AND CONSEQUENCES

This chapter consists of two parts: a discussion of the prevalence and patterns of drug abuse among pregnant women and a discussion of the consequences of such dysfunctional behavior for both the individual woman and her developing child.

Prevalence and Patterns of Drug Abuse

Reliable estimates of the prevalence of alcohol and other drug use among pregnant women are not currently available. Because of this lack of information and increased public concern, the National Institute on Drug Abuse has begun a national study of drug abuse by pregnant women and its effect on in utero development. Until this study is completed, data available from various clinical observations can provide some indication of the nature and scope of this problem:

- In a 1989 survey of 18 hospitals in 15 major cities across the country, the Senate Select Committee on Children, Youth and Families (136) found significant increases in the use of illicit drugs during pregnancy at 15 of the surveyed institutions. For example, the Committee found the following increases in the percentage of newborns exposed to drugs in utero:

  -- An increase from 1.9 percent to 5.7 percent, of live births at a Dallas hospital between 1987 and 1988.

  -- An increase from 1.1 percent to 3.9 percent at a Denver hospital between 1985 and 1988.

  -- An increase from 12 percent of live births in 1985 to 15 percent in 1988 at a New York City hospital.

  -- An increase from 4 percent to 15 percent between 1987 and 1988 at a Philadelphia hospital.

  The 1988 reported incidence of drug exposed newborns ranged from a low of 4 percent in Denver to 18 percent in Washington, D.C., and Oakland, California.

- In a recent study of New York City's Harlem Hospital, 10 percent of 3,300 newborns tested positive for cocaine (23). A similar estimate was reported at Parkland Hospital, a large public facility in Texas, where 9.8 percent of pregnant women admitted using cocaine (90).

- In a study of 679 urban women enrolled for prenatal care at the Boston City Hospital, 17 percent were found to have used cocaine during pregnancy, 28 percent used marijuana, 44 percent used tobacco (11% smoked more than one pack per day), 59 percent consumed alcohol (3% drank an average of two or more drinks per day), 4 percent used opiates, and 3 percent used other illicit drugs, including barbiturates, LSD, mescaline, phencyclidine, and amphetamines (55).

- A study of all women admitted to Chicago's Prentice Women's Hospital and Maternity Center of Northwestern Memorial Hospital during a six month period found that 3 percent were using sedative-hypnotic drugs such as marijuana, benzodiazepine, and alcohol (26).

- One in four women smoke during pregnancy (155). Recent estimates of cigarette smoking from the National Health Interview Survey (a national survey of more than 31,000 individuals) indicate declines for all race-gender groups from 1974 through 1985, but the rate of decline has been significantly slower for women than for men (52).

- The Baltimore-Washington Infant Study with a sample of 1,336 women, reported that 10 percent used alcohol and cigarettes during pregnancy, and about 2.5 percent used alcohol, cigarettes, and some type of illicit drug (125).

- A study of 12,440 pregnant women at Boston's Brigham and Women's Hospital found that almost 3 percent consumed, on average, one or more alcoholic drinks per day (98). This same level of drinking was also found in a larger study of 32,000 pregnancies (104).

- A study of 245 pregnant women at Detroit's Women's Hospital and the Wayne County General Hospital found 13 percent reported using marijuana during pregnancy; 2 percent reported using cocaine, heroin, or methadone; and 4 percent reported using benzodiazepines (125).

Although these data cannot be used to determine the national prevalence of drug abuse among pregnant women, reports such as these do indicate that the use of alcohol, tobacco, and other drugs during pregnancy is likely to be a significant problem in many areas of the country. Moreover, users do not seem to confine themselves to one drug but typically abuse multiple substances. This polydrug use increases the health risks during the perinatal period.

A synthesis of data from various sources (116, 147, 60, 59, 40, 151, 17) provides an anecdotal picture of the female drug user as an unemployed, poorly educated 25 to 34-year-old with multiple drug problems. Blacks and Hispanics tend to be over represented among this population, and certain drugs (e.g., crack, phencyclidine) are linked to specific ethnic groups in particular geographic locations. The pregnant women participating in WIC have similarities with this profile. According to the National WIC Evaluation (130), most of these women are:

- young (the average pregnant WIC participant is 22 years old; about 15 percent are teenagers);
- poor (average yearly income is $7,360, and only about 10% are employed; almost two-thirds receive Food Stamps, and about one-third receive Aid to Families with Dependent Children);
- members of minority groups (almost one-third are Black and nearly one-fifth are Hispanic); and
- poorly educated (on average, these women have attained only a 10th grade education; for many, English is a second language).

Although no data on the prevalence of drug abuse among WIC participants are presently available, the similarity between the WIC profile and that of the typical female drug abuser suggests that alcohol and other drug use may be a problem for members of WIC's target population.

The Consequences of Alcohol and Other Drug Use During Pregnancy

The following summary is intended to highlight the known--or strongly implicated--social and biological effects of alcohol, tobacco, and other drug use during pregnancy. Any use of alcohol, tobacco or other drugs during pregnancy is considered abuse because of the potential for harmful effects. Because drug users often use combinations of drugs, determining the independent effects of each drug is often difficult.

Alcohol

Beverage alcohol (ethanol) is a central nervous system depressant. It slows down bodily functions such as heart rate, pulse, and respiration. When drunk in small quantities, alcohol can induce feelings of well-being and relaxation. Taken in larger quantities, it progressively causes intoxication, sedation, and unconsciousness (even death, if consumed in large amounts). These effects are similar to those produced by other sedative-hypnotic drugs, such as barbiturates and narcotics. Other alcohols, such as methyl and isopropyl (rubbing) alcohol, are toxic to the human body and can be deadly.

For women, heavy drinking can interfere with fertility by altering the menstrual cycle (128) and increasing the risk of obstetrical complications, particularly vaginal bleeding, premature separation of the placenta, and fetal distress (71, 128). The risk of spontaneous abortion is more than three times greater for heavy drinkers (three or more drinks a day) than for nondrinking women (71, 128). Heavy drinking can also triple the likelihood of a premature delivery (128).

Intrauterine growth retardation is the most frequent effect of fetal exposure to alcohol, and it appears to be more severe among women who drink heavily in the third trimester of pregnancy than those who do not. Pregnant women consuming between one and two drinks per day are twice as likely as nondrinking mothers to bear a growth retarded infant weighing under 2,500 grams (104). Further, there is now evidence that even very modest levels of drinking (about one drink a week) just prior to the start of pregnancy is also associated with decreased birthweight (94).

Fetal Alcohol Syndrome (FAS) occurs in about 2 of every 1,000 live births (2). FAS entails growth deficiencies before and after birth, abnormal features of the face and head, and central nervous system disorders. In fact, FAS is estimated to be the leading cause of mental retardation (2). Children whose mothers drank heavily during pregnancy may also exhibit a number of developmental problems, including hyperactivity, short attention spans, language dysfunctions, and delayed maturation (3, 122, 128).

A study of a group of mothers who drank heavily during pregnancy (an average of five drinks per day) found that they had newborn infants showing such signs of alcohol withdrawal as tremors, hypertonia, restlessness, inconsolable crying and reflex abnormalities (33). Infants of heavy drinkers, particularly of mothers who drank heavily during the last trimester, are often irritable and restless sleepers (134). Because alcohol is transmitted in breast milk, these effects may also continue after birth (128).

Tobacco

Tobacco's active ingredient, the stimulant nicotine, is one of the most popular drugs in this country. Nicotine is believed to be responsible for most of the mood-altering effects and the addictive nature of smoking. It has no medical or therapeutic use. Tar, another substance found in cigarette smoke, is known to cause lung cancer and bronchial disorders.

As with alcohol, use of tobacco can lead to impaired fertility. Women who smoke heavily (more than 30 cigarettes per day) have a 43 percent lower fertility rate than nonsmoking women (123). Pregnant women who smoke also have significant increases in abruptio placentae, vaginal bleeding, placenta previa, ruptured membranes, and early delivery (123).

There is a direct correlation between the amount of smoking during pregnancy and the incidence of spontaneous abortion, fetal death, and neonatal mortality from respiratory difficulties and Sudden Infant Death Syndrome (71, 140). A recent four-year comprehensive study of infant mortality (83) found that women who smoked a pack a day or more had a 56 percent higher incidence of infant mortality among their firstborn than nonsmokers. For later children, mothers, regardless of the amount smoked, had a 30 percent higher incidence of infant mortality than nonsmoking mothers.

Maternal smoking has been blamed for as much as 14 percent of preterm deliveries in the United States. Prematurity significantly increases the risks of infant mortality and of respiratory illness (123). A recent large-scale study of more than 30,000 pregnant women in northern California found that preterm births were 20 percent more common in women who smoked a pack or more during pregnancy than among nonsmokers (137).

Cigarette smoking also reduces a baby's birthweight in proportion to the amount consumed--an average of about seven ounces per infant. However, the earlier in pregnancy that a woman stops smoking, the better her chances for delivering a baby of normal weight (123). Based on a nationwide study of natality (84), if all women stopped smoking during pregnancy, the incidence of low-birthweight infants would decrease by amounts ranging from 35 percent for the least educated mothers (less than 12 years of education) to 11 percent for college-educated mothers.

The consequences of maternal smoking do not end at birth. Smoking is also a concern for nursing mothers as nicotine is transmitted in breast milk. Children of mothers who smoked while pregnant are at increased risk for impaired intellectual and physical growth and behavioral problems such as lack of self-control, irritability, and hyperactivity (123).

Passive smoking can also have negative consequences during pregnancy. Passive smoking has been found to lead to infant weight reduction only about a third less than if the mothers themselves smoked (63, 129).

Marijuana

Marijuana is the common name for the Indian hemp plant (*Cannabis sativa L.*) that is smoked for its intoxicating effects. Hashish ("hash") is made by removing the strong-smelling, dark brown resin in the leaves and pressing it into cakes or slabs. It is usually more potent than marijuana, containing up to 12 percent tetrahydrocannabinol (THC) which is the primary mood altering chemical in marijuana. Hash oil, a highly refined distillate of marijuana, may contain up to 50 percent THC.

Although the effects of marijuana use during pregnancy are less well documented than the effects of alcohol, it does appear that such use may be associated with low birthweight and height and with shortened gestation (56). For example, a 1986 study (66) found that among White, but not Black, women,

regular marijuana use was associated with increased risk of having a low-birthweight infant. Other risk factors related to race may be more significant than marijuana use in affecting reproduction in the Black population.

Features compatible with FAS have been found among infants of mothers who smoked marijuana heavily (73). The bulk of evidence, however, now suggests that marijuana does not characteristically produce physical anomalies in humans, although gross malformations (and fetal deaths) occur in animals using larger doses than are typical of human use. But marijuana use, particularly when combined with use of other drugs, may increase the likelihood of adverse consequences in such high-risk groups as malnourished mothers, and those receiving inadequate prenatal care (122, 14, 49, 76).

Increased tremulousness, altered visual response patterns, and some "withdrawal-like" crying have been found in the babies of women who smoked marijuana heavily. These effects usually disappear within 30 days after birth, although this does not rule out more subtle long-term consequences (56, 122). A recent study of neonatal sleep found that maternal marijuana use during pregnancy affected sleep and arousal patterns in the newborn, although the long-range implications of this are not known (134). Subtle abnormalities of the nervous system and impaired learning capacity may also occur among children whose mothers used marijuana heavily (14, 122).

Sedatives, Hypnotics and Tranquilizers

Barbiturates are among the most commonly used drugs classified as sedative-hypnotics. They act as central nervous system (CNS) depressants, slowing down many body functions. Barbiturates are prescribed for a variety of therapeutic purposes, most commonly for managing sleep disorders, and are among the most potentially lethal of the CNS depressants. Although more than 2,500 barbiturate compounds exist, about 50 have been approved for clinical use and only 12 of these are widely used. Heavy users of alcohol and other drugs often take barbiturates if their drug of choice is not available, or to counteract the negative effects, such as anxiety and sleeplessness, of their drug of choice.

All the diazepines (minor tranquilizers) have been associated with increased fetal malformations if used

during the first trimester of pregnancy (74, 71, 72). A 1989 case study of eight offspring of mothers whose excessive use of diazepines during pregnancy was confirmed by blood tests reported birth anomalies resembling those of FAS, and almost all the infants were significantly below average in birthweight (88). Benzodiazepines in particular can depress infants' respirations (51, 71).

Diazepam (Valium®) consumed in the first trimester has been linked to a fourfold increase in cleft palates, lip anomalies, and malformations of the heart, arteries, and joints. The risk of these congenital anomalies seems to increase when diazepam is combined with smoking and alcohol use. When used daily for the last two to four months of pregnancy, even in low dosages (10 to 15 milligrams), diazepam has been found to result in tremulousness and other symptoms of withdrawal in the newborn. Flurazepam (Dalmane®) given in 30-milligram doses for 10 days has been associated with lethargy and hypertonia (reduced muscle tone) in newborn infants, lasting several days after birth (74, 71, 51, 72).

Use of barbiturates as antiseizure medication has also been associated with congenital birth defects resembling FAS. Even short-acting barbiturates have been associated with increases in birth anomalies (74, 128, 4). Chronic use of barbiturates in the last months of pregnancy, at doses of 60 to 100 milligrams per day, has been associated with infant withdrawal symptoms that appear four to seven days after birth and typically include high-pitched crying, irritability, tremulousness, and sleep disturbances that can persist for months (4, 51, 72). Chronic use of barbiturates during pregnancy also may alter infants' and children's patterns of normal behavior, responses to the environment, and growth.

Cocaine and Other Stimulants

Cocaine hydrochloride is a short-acting, powerful CNS stimulant. Cocaine also acts as a local anesthetic. In low doses, cocaine produces a short-lived sense of euphoria accompanied by feelings of increased energy, enhanced mental alertness and self-esteem, and greater sensory awareness. Larger doses intensify these effects and sometimes cause bizarre or violent behavior. Psychological dependence on cocaine can occur rapidly. In fact, studies show that cocaine may be the most powerful of all illicit drugs in producing psychological dependence. Physical dependence (and withdrawal symptoms) may occur also among chronic users.

Crack is the street name for a form of freebase cocaine that has been processed into crystals, or "rocks" and is smoked. Crack's quick action and low cost have made it popular, especially among young urban drug users, and its use has spread alarmingly throughout U.S. cities. An acute overdose could result in a coronary attack or respiratory arrest.

Amphetamines, also stimulants, produce effects similar to those of cocaine. Chronic users can become physically dependent and can also develop "amphetamine psychosis," which resembles paranoid schizophrenia. Amphetamines are generally taken orally in tablet or capsule form, but in some instances (especially methamphetamine) are injected into the veins. Abusers often take marijuana and depressant drugs such as barbiturates, alcohol, and opiates to combat the negative side effects of amphetamines.

Chronic cocaine use has been associated with an increased incidence of spontaneous abortion (158, 159) and placental separation (5) due to reduced blood and oxygen flow to the fetus (hypoxia).

Women who use cocaine during pregnancy are at increased risk of preterm delivery (96). A recent study of the newborn infants of 75 cocaine-abusing mothers found significantly lower birthweights and a greater frequency of heart defects than among infants of mothers who did not use the drug (90). Another study of 343 pregnant women whose cocaine use was confirmed by urinalysis also found lower birthweights in their newborn infants (32). However, even among infants who are not born prematurely, the mother's use of cocaine is associated with reduced birthweight, length, and head circumference.

Mothers who use cocaine during the first three months of pregnancy, as well as those who use it throughout pregnancy, have been found to have infants who show significant impairment in their ability to orient and their muscular control (20, 23, 28). In recent years, there has been a dramatic increase in the use of crack. A New York study of 55 low-income Black and Hispanic female crack users found a much higher incidence of premature delivery than among a matched sample of nonusers (50.9% vs. 16.4%). The newborn infants of the users were also more than three and a half times more likely to be retarded in growth and nearly three times more likely to have a reduced head circumference (31).

In another study, fetuses of 67 women, most of whom were addicted to cocaine, were studied during pregnancy using ultrasound techniques (a noninvasive way of measuring the development of the unborn infant). Several measures showed asymmetric growth retardation suggesting abnormal development (105). Another study of 39 infants of cocaine-abusing mothers found that neurological abnormalities may be present in the newborn even though other gross developmental abnormalities are not apparent (44).

Cocaine use by nursing mothers can also pose a threat to their infants. In one recent study, marked tremulousness, irritability, marked startle response, and other neurological abnormalities in a two-week-old infant girl were traced to cocaine ingested from her mother's milk (24). A still more recent report describes an 11-day-old nursing infant's convulsions resulting from the mother's topical use of cocaine to relieve her nipples' soreness (19).

Two recent case reports also indicate that cocaine use during pregnancy can have fatal circulatory effects on the mother and pose great risks to her infant. A cocaine-using mother died three weeks after delivery as a result of a cerebral aneurysm linked to her drug use. Although her newborn infant was tremulous at birth and had a poor sucking reflex, he subsequently recovered (69). In a second case report, a newborn suffered a cerebral blood blockage (a cerebral infarction) related to his mother's cocaine use during pregnancy and on the day of delivery (27).

Other stimulants, primarily amphetamines, may increase the risk of heart malformations and brain defects (4). For example, phenmetrazine (Preludin®) has been implicated in abnormal skeletal and organ development; research on 104 infants born to mothers who had used cocaine, methamphetamine ("speed"), or both during pregnancy found the infants had altered behavior patterns characterized by abnormal sleep, poor feeding, tremors, and hypertonia. These infants also had significantly higher rates of prematurity, growth retardation, and smaller head circumferences at birth (120) compared to infants whose mothers had not used either drug. Another more recent study compared the offspring of 52 methamphetamine-abusing mothers with those of a similar non-drug-abusing group and found body weight, length, and head circumference were all significantly lower in the infants born of drug-abusing mothers (91).

Opiates and Synthetic Narcotics

Opiates (classified as narcotics) are natural and synthetic drugs that act primarily on the central nervous system. Opiates are effective pain killers but are also highly addictive. Although numerous chemical derivatives of opiates are available, roughly 25 separate compounds are used in medical practice today--among them, morphine, opium, codeine, methadone (Dolophine), meperidine (Demerol®), oxcycodone (Percodan®), and hydromorphone (Dilaudid®). Heroin, an opium derivative, is one of the most popular narcotics used by drug addicts. Methadone, a synthetic narcotic, is now most frequently used to treat heroin addiction. Physical and psychological dependence on opiates develops along with tolerance and is characterized by craving for the drug and withdrawal symptoms.

Heroin use during pregnancy increases the likelihood of stillbirth and neonatal death and is thought to be associated with Sudden Infant Death Syndrome because of the alternating toxic and withdrawal states in the expectant mother (149, 122, 35, 4, 51).

Pediatric cases of acquired immunodeficiency syndrome (AIDS) are one of the most rapidly increasing categories of AIDS patients. Intravenous use of heroin by the mother or her sexual partner is associated with four out of five of these cases (42). In New York City three out of four children with AIDS have died, most by the age of three (80).

Pregnancy complications of heroin addicts include increased risks of abruptio placentae, eclampsia, placental insufficiency, breech presentation, premature labor and ruptured membranes, and Caesarean section. Ten to fifteen percent of women addicted to heroin develop toxemia during pregnancy (35, 121, 51). Nearly half of heroin-dependent women who receive no prenatal care deliver prematurely, often because of infections. About 80 percent of their offspring have serious medical problems, such as hyaline membrane disease, intracranial hemorrhages, and respiratory distress syndrome (35, 51).

Bacterial endocarditis, a life-threatening bacterial infection of the lining of the heart, is another potential complication associated with intravenous drug use. A recently published case study of seven pregnant women with bacterial endocarditis reported two died shortly after giving birth. Two of the neonates also died as a result of preterm delivery, which may have been related to the disease (36).

Heroin may also cause intrauterine growth retardation as well as suppressing maternal appetite and interfering with the absorption of nutrients from foods because of its effects on intestinal, liver, and pancreatic functioning (122, 35, 4, 51).

Withdrawal symptoms have been observed in hundreds of infants born to opiate-addicted mothers. Restlessness, tremulousness, disturbed sleep, sweating, vomiting, stuffy nose, diarrhea, a high-pitched cry, increased rooting, or seizures usually start within 72 hours after birth and may continue for six days to eight weeks. Irritability can persist for three months or more after birth (7, 64, 85, 122, 35, 4, 51). Additionally, growth disturbances and other behavioral effects, such as hyperactivity, shortened attention spans, temper tantrums, and slowed psychomotor development, have been noted in children born to opiate-dependent mothers (122, 35). Babies born to methadone-maintained women also have been found to have poorer visual and auditory responses and slower motor development than matched controls. However, the babies of methadone-maintained women who received adequate and consistent prenatal care seem to thrive better and have fewer neurological complications than those whose mothers continued heroin use or who took methadone in an uncontrolled manner during pregnancy (35, 122).

Methadone and other opiates also are transmitted in the breast milk of nursing mothers (35).

Phencyclidine (PCP)

PCP, also commonly known as "angel dust," is a synthetic anesthetic that acts as a stimulant, depressant and hallucinogen. It is often the mood-altering chemical in street drugs represented as other hallucinogens, for example, mescaline or THC (the active chemical in marijuana). Its effects vary greatly, depending on the quantity and manner in which it is taken and the person taking the drug. It can be swallowed, smoked, snorted, or injected. PCP is sometimes sprinkled on marijuana, tobacco, mint, or parsley and smoked. PCP's mood-altering effects can sometimes cause hostile or bizarre behavior and even severe psychosis.

PCP is known to cross the placental barrier readily as well as to be transmitted through breast milk (114). Although evidence of effects on pregnancy is limited, a study of nine infants whose mothers had smoked PCP found these neonates showed more

instability and were less consolable than other groups of drug-exposed infants (29).

Inhalants and Solvents

Inhalants are chemicals--usually gases or volatile liquids--that cause intoxication when their vapors are inhaled in sufficient quantities. People usually do not think of inhalants as drugs because most of them were never meant to be used that way. Most inhalants are CNS depressants that produce an intoxication similar to that of alcohol. Inhalants fall into four main categories: solvents, such as model airplane glue, typewriter correction fluid, lacquer thinners, nail polish remover, cleaning fluid, and gasoline; aerosol sprays, such as hair sprays, insecticides, medications, and paint; anesthetics, including ether, nitrous oxide, and chloroform; and other chemicals, such as amyl nitrite and butyl nitrite (these are stimulants). Inhalants cause short-term mood-altering effects but have also been implicated in many fatalities following heavy usage.

Industrial solvents can be highly toxic to the brain, lungs, liver, kidneys, and other organ systems and can sometimes cause accidental death in users. Abuse of such substances also poses obvious--and potentially serious--reproductive risks, including abnormal facial features and severe mental retardation. These FAS-type symptoms are more prevalent when inhalants or solvents are combined with alcohol (128). A case study of toluene abuse resulting from paint sniffing by five pregnant women reported growth retardation for three of the newborns and birth anomalies for the two others (63).

Other Concerns

Beyond the immediate obstetric effects of drug use, women who abuse licit and illicit substances place themselves and their children at greatly increased risk for a host of other problems. Use of illicit drugs carries serious risk of criminal prosecution as well as other types of dysfunctional behavior (e.g., prostitution) (21). Drug abusers also tend to have an increased risk of other health problems associated with their drug use, such as anemia, inadequate nutrition, and infection. For intravenous drug users there is the added risk of AIDS for both themselves and their fetuses (21). Finally, the risk that maternal drug use poses for the child does not end at birth. Drug-involved women tend to be far more likely to abuse and neglect their children than nonusers, further increasing the developmental damage that results from drug use (21).

3. EFFECTIVE APPROACHES TO DRUG ABUSE PREVENTION

This chapter reviews the current state of knowledge regarding effective approaches to preventing drug abuse. This review forms the basis of recommendations for providing drug abuse information and referrals in the WIC Program. The chapter begins with a conceptual discussion of drug abuse prevention and the role of information and referral activities. Next, successful approaches to disseminating drug abuse information are reviewed, followed by a summary of the literature on drug abuse screening and referrals. Finally, a discussion of exemplary programs for pregnant women is presented.

The Public Health Model of Drug Abuse Prevention

The public health model commonly used when describing drug abuse prevention programs refers to three responses to drug abuse (72, 124). The first, called primary prevention, responds to individuals who have never used drugs. Efforts focus on providing information about the effects of drug abuse, techniques for refusing drugs should they be offered, and activities that foster life skills and serve as alternatives to drug abuse (70).

Secondary prevention responds to individuals who are using drugs but are not yet chemically dependent. Secondary prevention contains many of the components of primary prevention, but includes methods for identifying and referring suspected users for assessment so that treatment can be obtained. In secondary prevention, information efforts focus on discontinuing use and fostering healthful behaviors (70).

Tertiary prevention usually takes place within a treatment program. It is aimed at reducing the dysfunctional behaviors of chemically dependent persons who have lost control over their ability to stop using drugs even in the face of the obvious problems drugs cause. Informational efforts focus on the negative impact of chemical dependence on health, family functioning, and the attainment of such personal goals as finding employment, completing education, and developing positive interpersonal relationships (70).

Individuals targeted by these three categories have different needs for information and ancillary services. Nonusers need basic information that will

support them in their decision to remain drug-free. They also frequently need materials to share with partners and with children. Likewise, they may need information about referral services to deal with problems among partners, children, and other family members.

Nondependent users require basic facts about drugs' effects as well as self-help and motivational materials and recommendations for involvement in specific counseling programs.

Dependent users require specific referrals to treatment. Basic information about drugs is of little use to these people because, by definition, they cannot stop using drugs without help. In fact, until sobriety is achieved, ancillary services have little effect.

Successful Approaches to Dissemination

The extant literature on effective methods for disseminating information on drug abuse has been dominated by school-based studies (132, 156) using outcome measures such as increased knowledge about drugs, improved family relationships, enhanced self-concept, changes in drug use, and changes in attitudes toward use (132, 124). For the most part, these studies have focused on primary prevention among White middle-class adolescents (132).

A small but extremely important number of studies have explored the impact of prevention information on alcohol use among pregnant women (93, 95, 106, 128). One notable series of studies focused on the Seattle Health and Pregnancy Program, which serves a middle-class population. A second landmark study is based on Boston City Hospital's experiences in providing services to low-income, inner-city women. The Seattle and Boston programs respond to their clients' needs for primary, secondary, and tertiary prevention. Through close monitoring, both programs have found that effectiveness of information and referral services depends on how they are provided and whether their recipients were nonusers, nondependent users, or chemically dependent users.

Another body of studies has focused more narrowly on developing and applying screening instruments for drug and alcohol use among pregnant women and obstetric-gynecologic patients. Findings from these efforts are relevant to the screening and referral

activities described later in this chapter (37, 38, 138).

Given the relatively small number of studies concerned directly with the provision of prevention information to women, clinical observations and focus group results from drug and alcohol treatment programs serving pregnant women assume a special importance. Although focused primarily on chemically dependent women, many of these reports discuss issues of particular relevance to low-income women, minority women, and women with low literacy skills. These issues include barriers to service, confidentiality and reporting, staff roles and training, and linkages to other agencies (68, 20-29, 41, 50, 51, 117, 118, 119, 41, 126, 128, 141, 153).

Findings from more than 20 years of studies evaluating prevention efforts aimed at reducing cigarette smoking have guided the development of the majority of effective prevention programs in place today (124, 156). Approaches such as targeting messages to defined audiences, reinforcing information consistently and over an extended period of time, and using multiple media are now commonplace among prevention programs. Smoking prevention experts borrowed these ideas from the field of advertising and skillfully adapted them to antismoking public service campaigns. These approaches continue to have relevance for prevention programs and are both directly and indirectly referenced throughout this chapter.

The health education literature offers another useful source of ideas for providing information to minority women and women with low literacy or low income levels (43, 81). Although it does not discuss the needs of pregnant drug- and alcohol-using women specifically, it does provide guidance in developing applicable print and audiovisual materials and in using them effectively.

Targeting High-Risk Individuals

Prevention programs are most effective when they are targeted directly at populations at high risk for drug abuse (156). The group to be targeted, likewise, should be defined narrowly by age, life situation, and role (156). Moreover, education efforts should spring from programs that already reach the target group (e.g., health clinics) and should be designed specifically for that group (109, 81, 156).

Targeting Points of Increased Receptivity

Information efforts should be designed to reach the target group during bench mark periods when they make the transition from one life situation or role to another (e.g., puberty, college entrance, parenthood) (156). It is at these times that behavior frequently changes. During pregnancy, for example, women are receptive to messages urging them to adopt a range of healthy behaviors (93, 95). Although there is a physiological explanation for this receptivity (e.g., tobacco and alcohol cause discomfort for substantial numbers of pregnant women), researchers also believe that women are psychologically more responsive to information at this time, especially when they learn of the positive effect on the developing fetus (93, 95).

A Positive Manner of Presentation

The way information is presented can significantly affect the response it receives. Positive, accurate information that is directly relevant to the recipient's life situation and is couched in language she understands elicits the most favorable response (43, 81, 138).

In contrast, presentations arousing fear or inducing guilt have little effect and, in some instances, are counterproductive. Fear-based informational programs have been implicated in fostering drug use (124). By confirming the hopelessness of the situation through emphasis on damage and guilt, negative information efforts convince some recipients of the futility of change (138).

Face-to-face, nonjudgemental presentation of information is deemed the most effective method of communication with high-risk women (43, 138, 128, 109). The interest displayed by the information provider seems to play as important a role in effective communication as the content of the conversation. Positive interpersonal interaction between information provider and recipient plays a similar prominent role in drug and alcohol screening and referral (138, 128, 93, 95).

Sufficient Duration of Effort

The duration of the information effort also appears to be a major factor in predicting a program's success (132). Results from antismoking, child neglect, alcohol abuse, and teen pregnancy prevention initiatives (68, 41, 93, 95) indicate that the more frequently information is repeated, the more effective it is. Thus, programs lasting six months, for example, have better results than those lasting a week (132).

Linkages Among Services

Programs that are effective in reaching low-income women are characterized by strong linkages to other services within the community (68, 109). These relationships facilitate referrals, expedite the exchange of programmatic information, expand resources for staff training and technical consultation, and improve allocation of responsibilities within the larger network of community services (68, 109).

Appropriate Staffing

Skilled staff are another ingredient of successful prevention programs. Many programs employ the services of highly trained professionals with substantial experience in the drug and alcohol fields and in providing screening and referral services (109, 93, 95, 128, 68, 138). These professionals not only coordinate the drug and alcohol education programs, but also train staff.

Reducing Barriers to Participation

Effective drug education programs are further distinguished by their capacity to understand and meet the needs of the people they serve. Cultural sensitivities are observed, practical services that eliminate barriers to full participation are instituted (e.g., babysitting, bilingual staff and informational materials), and participants are actively and appropriately involved in the services offered (e.g., helping to decide on a referral, setting the agenda for group educational sessions, evaluating the relevance of the information provided, identifying areas of unmet need) (109, 126, 61, 68, 81).

Methods to Increase Appeal and Comprehension

An estimated 23 million Americans, or almost 10 percent of the population, may not understand what a health professional says to them, and 20 percent of adult Americans have reading skills below the fifth-grade level (43). Valuable information--whether spoken, printed, or portrayed visually--may not be comprehensible to the intended audience because the vocabulary or context is inappropriate (43).

For conveyed information to be received, the material or conversation must make sense in terms of the individual's life situation (43, 81, 109). Literacy experts suggest using concrete terms (e.g., "eating bread" instead of "ingesting carbohydrates") and avoiding categories or lists (43). Results from interviews with low-income minority women also show the importance of emphasizing everyday life and

immediate concerns that can be seen or felt directly (43, 81).

In addition, information must be presented in language close to the vernacular used by the target audience (43). Sometimes this means using a language other than English (81). Printed drug abuse materials seldom use jargon and slang (e.g., "booze" for liquor, "bam" for amphetamine) because they are seen as limiting or offensive. Literacy experts, however, disagree with this strategy and recommend, instead, developing very specific materials using common language (43). To overcome cost problems, they suggest fabricating homemade materials, arguing that relevance compensates for limited eye appeal (43).

Finally, to maximize comprehension, information should be cloaked in experiences similar to those of the target audience (43, 81). People with low literacy skills tend to accept only what is meaningful to them because they have difficulty transferring from the experience of others (43). An early review of drug-oriented informational materials conducted by the Substance Abuse Subcommittee of the Healthy Mothers, Healthy Babies Coalition found that pamphlets recommending "alternatives to drug abuse," in particular tended to cite irrelevant examples. Women were advised to join fitness clubs, meditate, listen to Pachabel's Canon, and take a vacation. These suggestions were deemed to have little or no meaning to the low-income target group.[3]

A Variety of Methods of Communication

Even when a target group is narrowly defined, different learning styles abound. For this reason, learning is achieved more readily when a variety of stimuli are used (43). An information program combining one-on-one conversations, group discussions, pamphlets, posters, and audio and video tapes is more likely to be effective than a program relying on a single form of communication (43, 81, 109).

Individual Counseling. Experts in both counseling and teaching agree about the importance of establishing personal relationships to foster the learning process (43, 93, 95, 68, 109). Engaging a

[3]From Notes from the Healthy Mothers, Healthy Babies Substance Abuse Subcommittee recorded by the American Council for Drug Education, 1984.

patient, client, or student through a one-on-one relationship is the most effective means of conveying information and ensuring that it is understood (43, 138, 33).

One method for providing this contact is to use a printed or audiovisual aid as the centerpiece. Individual participation is reserved for two points: an introduction highlighting important points and telling the individual why she is to read, view, or listen to the material; and a conclusion, during which she is asked what the material meant and its basic message is reinforced (43).

Group Discussions. Although groups can be difficult to arrange because of resistance to participation and the logistical problems involved (time, space, transportation, child care, scheduling conflicts), they can be a useful element of an information program (68). They enable one staff member to establish several personal relationships at the same time, and they provide an opportunity to repeat information in a variety of different forms to increase the likelihood that it will be understood by participants (43).

Print Materials. Although print materials have been deemed the least successful means of providing information, new efforts are now underway to develop materials specifically targeted at pregnant low-income women and adolescents. An ambitious information project planned for a health center in Illinois also contains a strong evaluation component that, ultimately, may provide needed insight on the value of print materials as informational tools for this target group (6).

Until such evaluations are available, recommendations from literacy experts can provide some guidance. Print materials should use short sentences, the active voice, and familiar vocabulary (43). The tone should be conversational and direct, and pronouns (e.g., "you should" instead of "women should") should be used throughout (43). Each paragraph should be limited to one idea, which is introduced in the topic sentence and reiterated in the concluding sentence (43). Illustrations are highly desirable but should be clear and simple (43). If possible, an illustration should appear on the same page as, or on the page immediately following the idea being depicted. Headings should be plentiful; lists should be avoided (43). Print should be large and clear,

upper- and lower-case print should be used to expedite decoding of words, and the layout should include ample white space to facilitate ease in focusing and following (43).

Despite their limitations for people with poor reading skills, print materials offer several advantages to informational programs (43). The message provided is consistent, and the cost is relatively low. Also, the material is portable and can be shared, can be reread for reinforcement, and can provide a directory of resources for the reader to use in the future (43).

Graphics. Graphics can enhance the eye appeal of printed materials, clarify a concept through illustration, personalize a message for particular target groups through illustrations reflecting their appearance or environment, or lend emotional impact to a message (42, 25). Posters, postcards, comic books, and activity sheets have been used by diverse organizations to convey and reinforce messages about health, safety, and drug abuse, among other issues (43, 109, 68). The annual Fetal Alcohol Syndrome awareness program conducted by the National Council on Alcoholism, the Department of Health and Human Services' Anti-Smoking campaign targeted toward pregnant women, and the Healthy Mothers, Healthy Babies effort aimed at low-income, pregnant women all used posters to convey their messages. Although comic books and activity sheets have been used in the drug and alcohol fields primarily to educate children, a new demonstration project geared toward pregnant adolescents will test the use of these formats with young adults (6).

Unlike print materials, however, about which there seems to be consensus on how to reach various groups, opinions about graphics are more controversial and subjective (43, 81, 109). For example, the fantasy posters released by the Healthy Mothers, Healthy Babies Coalition were criticized by literacy experts as too confusing and complicated (43). Nonetheless, the response to the posters among low-income women (many of whom were likely to have limited reading skills) was overwhelmingly positive. It may be that the emotional appeal in this instance compensated for the lack of clarity (81, 109). Differing opinions on the merits of graphics and the relatively high cost of their production underscore the importance of pretesting these materials with the potential target group (43).

In general, literacy experts favor simple line drawings or lifelike sketches or photographs that focus the eye on one activity (43). Viewers should be able to identify with the sketches and photographs, and the people portrayed should have pleasant expressions on their faces (43). If captions are used, they should be clear, directly relevant to the illustrations, and in large print (43). Because people with limited reading skills tend to be very literal in their interpretation of visual materials, humor, clever allusions, and pictorial metaphors should be avoided (43). Similarly, if cartoon characters are used, they should be humanized so the viewer relates the message depicted to herself (43).

Within a clinical setting, posters are frequently welcomed as a way of decorating the waiting room. However, they can also serve an informational purpose if they are used appropriately (43). Staff, for example, can call attention to them and incorporate their message in contacts with participants (43). Some posters have a blank space that can be personalized by the user. Typically, this includes a line where a telephone number or name of a contact person for more information can be printed (43). Posters also come in a variety of sizes, including 8 1/2" by 11". Many are designed so that they can be reproduced and distributed as handouts (43). The Healthy Mothers poster series featured a mini-postcard that was distributed to reinforce basic health messages among low-income women.

Audiovisuals. Films and videotapes can aid comprehension by adding another dimension to the written word, can be substituted for reading, and can extend or demonstrate the application of printed concepts (43, 81, 109).

Videotapes and films are also dramatic media; they can make concepts more vivid and memorable. Because they are pictorial, they can show characters and settings relevant to the viewer (43). However, interviews with low-income women and the observations of literacy experts indicate that many available films and videotapes are not meaningful or helpful. They are often too difficult to understand and do not reflect situations with which the intended viewers can identify (81, 109). Techniques for overcoming these problems include the following:

- From initial conceptualization, develop the film with a specific target group in mind (43, 81).

- Use characteristics of the target group to develop and cast characters, to create situations, and to suggest settings (43, 81, 109).

- Simplify vocabulary. Even though film has tremendous pictorial power, this cannot compensate for language that is too difficult (43).

- Avoid condescension. Although language should be simple, situations should be adult in concept (43).

- Avoid stereotypes. For example, where serapes, Mexican hats, and Indian blankets can be offensive, background shots including trailers, hogans, and inner-city apartments can lend credibility (43, 81, 109).

- Design film or video in segments so that the presentation can be stopped and questions asked (43).

- Use circles, arrows, and other graphic cues to highlight important information or behavior (43).

- Pace films for optimal understanding. Fast action may gain attention at the expense of comprehension (43).

- Define a few central concepts and repeat them frequently. Resist the temptation to "pack" the film or videotape; viewers can absorb only so many ideas at one time (43).

This perspective on materials was reinforced by Ms. Yolanda Cleffi, a parent participant of the National Advisory Council on Maternal, Infant and Fetal Nutrition (NAC) in her August 15, 1989 letter to the Council. (See Exhibit I).

Examples of Programs

Programs for Nonusers and Nondependent Users. The Seattle Pregnancy and Health Program (PHP), an initiative aimed at stopping women from drinking during pregnancy, has found that women who abstained from alcohol or rarely drank responded favorably and positively to public health messages provided through

brochures and posters (93, 95). PHP staff encouraged and supported this group of women to continue their abstinent behavior and used clients' questions as opportunities to provide additional information. Moderate drinkers generally changed their behavior as recommended by the information they received, particularly if the information was conveyed face to face (93).

Researchers who evaluated the Seattle experience also believe that the program's emphasis on a positive message (e.g., having healthy babies rather than the potential damage that might be caused; stressing reduction in use as a health goal rather than a source of guilt) was instrumental in fostering behavioral change. Of the 62 percent of the population seen who had a slight problem, 86 percent decreased their drinking during pregnancy (93).

ASPEN, the Substance Abuse Prevention Education Network of the Shawnee Adolescent Health Center in Illinois (which also includes a WIC Program) is developing a more formalized approach to providing information to nonusers (6). A curriculum consisting of eight self-instructional modules will be used with each pregnant adolescent in conjunction with her weekly visits for prenatal care. The patient will be introduced to the program during her initial pregnancy work-up, then at each succeeding visit will work independently on a module while in the waiting room. Specially trained Prevention Specialists will be available in the waiting room to assist patients with each ASPEN module and to answer questions. Each module contains basic information on drugs and pregnancy, a cartoon illustration, and an activity requiring the patient to process and apply the learned information (6). The outcome of this project, which is currently in the developmental phase, may provide interesting insights on methods for reaching WIC participants with basic information.

Health Start, a prenatal care program of the St. Paul-Ramsey Medical Center in Minnesota, adapts many existing materials for its clients and, in addition, provides them with one-page information sheets on specific drugs (68). Health Start conducted interviews with its patients to determine the kinds of materials and approaches they wanted. Results indicated preferences for:

- More information on the effects of drugs and alcohol. In particular, patients wanted to

receive such information early, before damage to the fetus was likely.

- Someone to sit down with them, to talk about the drug problem, and to describe how drugs could hurt them and their babies.

- Written materials, including posters, handouts, and films.

Health Start patients particularly liked posters and films because they thought such materials made a strong impression and were easy to remember (68).

Another approach to providing information to nonusers and users who are not yet chemically dependent is the interactive video. The University of Cincinnati is currently developing a series of four videos on alcohol, tobacco, inhalants, and drugs and pregnancy (118). The videos are aimed primarily at teenagers and use the interactive format to model and practice resistance. Although the effectiveness and practicality of this approach have not been assessed yet (118), the interactive aspect holds promise, particularly in settings where staff resources are limited.

In its booklet on "Program Strategies for Preventing Fetal Alcohol Syndrome and Alcohol-Related Birth Defects," the National Institute on Alcohol Abuse and Alcoholism (NIAAA) notes that myths about alcohol and drugs are rampant (109). Prior to beginning an informational effort with clients and staff, NIAAA suggests conducting an assessment of practices and beliefs (109). Operation PAR in St. Petersburg, Florida, offers an interesting example of why this kind of assessment is useful (119). This large-scale, comprehensive prevention and treatment program launched an information initiative among pregnant clients and could not understand the disappointing response. Alert staff quickly surmised that the pregnant women they were trying to reach believed that the developing fetus was protected by what they referred to as a "bubble." Because Operation PAR's information did not talk about drugs or alcohol "piercing the bubble," patients felt they had nothing to worry about and dismissed the alcohol and drug information as irrelevant (119).

Another approach to providing information is currently being used at Booth Memorial Center in Oakland, California (118). Although targeted at low-

income, pregnant Black teens, Booth Memorial's strategy of using "peer educators" to provide information has application to other settings and age groups (118). At Health Start in St. Paul, Minnesota, pregnant women who have changed their health habits volunteer as information providers, role models, and sources of support (68). Project Safe in Illinois uses skilled, recovering counselors to conduct outreach and screening, to provide information, and to perform case management (for clients identified as having problems) (41). In Tuba City, Arizona, the Fetal Alcohol Syndrome Prevention Program uses "natural helpers," Native Americans fluent in Navajo, to reach its target population with information (117).

Accurate information provided by a credible source clearly seems to be effective in heightening awareness and changing behavior among nonusers and users not yet chemically dependent, even when they are members of a high-risk group (93, 95, 138). However, information seems to have a much less potent impact among chemically dependent users, a factor that bears consideration when designing programs for this group (128, 93).

Programs for Chemically Dependent Users. Written materials and audiovisuals appear to be less effective in curbing drug and alcohol consumption by heavy users than among less frequent users or nonusers. In commenting on the results of their pioneering Seattle-based Pregnancy and Health Program, Little and Streissguth observed that informationally oriented prevention efforts are "most beneficial to lighter drinkers and those with less severe problems" (93). They also voiced their opinion that the greatest effort in a prevention program should be directed to the majority, who in the case of this particular program, had no appreciable problems (93, 95).

Elaborating on this idea, Weiner noted that in a focus group conducted with drug- and alcohol-using pregnant women at Boston City Hospital, most reported that they were familiar with the general guidelines for prenatal health, but did not comply with them (106). Although their chemical dependency was largely responsible for their noncompliance (as is discussed in more detail in the next section), other factors connected with the information itself also may have a negative influence (106, 138, 115). For example, researchers speculate that the chemically

dependent woman's inability to change her behavior on the basis of information provided in pamphlets and posters may be a source of frustration and may contribute to an overwhelming sense of failure (106).

The chemically dependent woman usually has multiple problems and needs substantial assistance in understanding which behaviors pose the greatest risk and should be addressed first (107). Information cannot perform this function and, again, may even make the woman who cannot tackle her problem forthrightly feel even more inadequate (106). To counter these feelings of powerlessness and guilt, the Public Health Foundation suggests that information directed toward this group of women strive to enhance their perception of control in order to build self-esteem (115). The most effective delivery of this information is in the context of a treatment program.

Clinicians who treat drug-using women also emphasize the importance of providing information privately, so that there is an opportunity to discuss concerns and raise questions out of the hearing of other patients and staff in the waiting room (25). Persons providing information to users also must be ready to supply them immediately with resources for further assistance (25, 41).

After comparing results achieved by trained volunteers and skilled counseling professionals in providing information to female problem drinkers, Seattle's Pregnancy and Health Program opted to replace its volunteers with skilled professionals (93). Skilled professionals are deemed better able to provide positive, hopeful messages that emphasize building self-esteem (115, 106, 41, 117). As with nonusing women, information provided through personal contact seems also to have greater impact on drug-using women than impersonally conveyed information (93, 95).

Although there is an undisputed need for sensitively produced, positive information for drug-using women, intervention, in the form of well-conducted screening and referral, is the most important service that can be provided to this group (128, 106, 41). This is the subject of the next section of this chapter.

Approaches to Screening and Referral

By its very definition, screening is an activity that applies to all participants in a particular program. The goal of screening for drug use is to identify all persons among a specific population, who may have a problem (138, 34). Referral is the follow-up to a positive screening (138, 34). If the results of the screening questionnaire, interview, or test indicate that a person may have a problem, the next step is to put that person in contact with a specialist who can diagnose the problem and treat it (138, 34).

Screening Techniques

Screening and referral are therapeutic as well as mechanical processes (93, 128, 106). Trained staff are needed to perform this function effectively, and ongoing efforts to ensure the responsiveness of referral resources are essential. Otherwise, the reputation and credibility of the referring organization are in jeopardy (41, 61).

Because chemically dependent women, for the most part, will not voluntarily report their drug use, two methods commonly are used to identify possible problems, namely, questions and laboratory tests (e.g., urinalysis) (128, 38). Laboratory tests are more definitive, but can measure only relatively recent use (38). Cocaine, for example, appears in the urine for only a few days after use. As a result, it is possible for a current cocaine user to "pass" a urine test (45).

When properly posed, screening questions for drug use can "differentiate patterns of use, and can ascertain use over longer time periods" than laboratory tests (37). The discussion of screening in this report is limited to the use of questionnaires because laboratory tests are intrusive and expensive and require specialized training to administer properly. Questionnaires can be self-administered or administered by skilled interviewers. However, self-administered questionnaires are not recommended for the WIC population because the literature shows that personal contact plays an important role in conveying information to people with low literacy skills (43). Also, chemically dependent women tend to misreport their drug and alcohol use. A skilled interviewer can often elicit truthful answers by posing questions in a certain way. This flexibility is not possible with a self-administered instrument (37, 38, 128).

Types of Screening Instruments Used. For several years, clinicians and researchers have been grappling with how to design screening instruments to elicit truthful responses about drug and alcohol use (38, 93, 95, 106, 109, 68). A sampling of the better known instruments in use today includes the Michigan Alcohol Screening Test, the New York Screening Self Test, the Cahalan volume-variability scale, the Khavari KAT scale, Case-Western Reserve's questionnaire for identifying the alcohol-abusing obstetric-gynecologic patient, Ten Questions: Drinking History, and the Day and Robles questionnaire (109, 18, 82, 138, 128, 37). The Healthy Mothers, Healthy Babies Substance Abuse Prevention Packet for Health Care Providers also contained a screening instrument that incorporated elements from the Day and Robles questionnaire, Rosett and Weiner's Ten Questions, and several intake questionnaires used by large-scale narcotics treatment programs. Although the complete packet is currently unavailable, the screening instrument is included in a booklet entitled "Drugs and Pregnancy: It's Not Worth the Risk" (34).

Although the number of questions asked and their phrasing differs from instrument to instrument, the majority of screening questionnaires for alcohol and other drug use seek information about the following (38):

- the quantity of a drug used;
- the frequency with which it is used; and
- the duration of use.

Answers to questions about quantity describe how much a person uses per occasion and thereby give a measure of exposure to the drug (37, 38). Quantity also reveals something about "style of use," for example, whether the person drinks until drunk or smokes cocaine or injects heroin until the supply is exhausted (37).

Information on how often a drug is used, teamed with responses to quantity questions, can reveal if the respondent is a regular user, daily user, binge user, or moderate user (37, 38).

Information on duration of use helps to separate long-term users from the more recently involved (37, 38). Depending on the drug and the age of the

respondent, questions on duration of use can be used to assess potential risk for abusing other drugs, to determine treatment modality, and to predict the prospects for recovery, among other concerns (37, 38, 128).

In addition to these core questions, clinicians pose a variety of other questions that their experience has shown to be productive in identifying abusers. For example, Project Safe believes that a question on parental alcohol use is essential, a view that is shared by several clinicians (68, 93, 106, 128, 138). This screening question is deemed important because substantial numbers of patients receiving treatment for dependence on drugs and alcohol (in many programs, the majority of patients) have a family history of alcoholism (138).

Persons with histories of psychiatric treatment also constitute a substantial proportion of the population in some programs. Therefore, a question about psychiatric problems is often included in screening instruments (41).

The Seattle Health and Pregnancy Project reported that positive answers to two screening questions identified 80 percent of the pregnant women who were later assessed as problem drinkers (93):

- Do you ever have five or more drinks on any one occasion?
- Do you have the feeling that you should decrease your alcohol use?

The New York Screening Self Test also uses variations on these two questions ("If you drink wine, beer or beverages containing alcohol, how often do you have four or more drinks?" and "Does your drinking sometimes lead to problems between you and your family, that is, wife, husband, children, parent, or close relatives?"). Furthermore, it asks whether parents had problems with alcohol and whether the respondent has "gone to a doctor, psychologist, social worker, counselor, or clergyman for help with an emotional problem" (109).

As concerns about new patterns of drug use emerge, screening instruments are adjusted (68). At Boston City Hospital, for example, women who reply affirmatively to questions probing for heavy use of

cigarettes, alcohol, or marijuana are now queried about cocaine (160).

Day and Robles have done substantial work in the construction of screening instruments. They have found that women tend to remember quantity better than frequency, so they advise placing questions about amount used first (37).

To relieve anxiety about sensitive drug and alcohol questions on the part of both interviewer and respondent, many health programs (but not specifically drug or alcohol treatment programs) embed these questions in the normal intake interview, in sections addressing health history, dietary practices, and lifestyle (61). Similarly, the order of questioning proceeds from prescribed to over-the-counter medications, to the legal drugs--tobacco and alcohol--and then on to the illicit drugs. This progression from medically and socially approved drugs to illicit drugs is deemed both more natural and less threatening than other possible orders (34, 138).

Some screening models combine screening for use (to discover if a person may have a problem) with a fairly detailed drug and alcohol history (91, 93, 68). This approach saves time in settings where an assessment of drug use is made immediately following screening and the patient subsequently is referred for treatment (68). Programs offering prenatal health services or drug and alcohol treatment services frequently use this combined approach (68).

How Questions Are Posed. Questions asked during screening must be nonjudgemental (138). In Rosett and Weiner's Ten Questions, for example, the questions about beer ask (128):

- How many times per week?
- How many cans each time?
- Ever drink more?[4]

[4]Day and Robles's work on sequencing (37) suggests that a better order for these questions would be to put: "How many cans each time?" first.

Another technique for eliminating judgmental overtones and promoting honest answers is to ask about alcohol and other drug use in the past month, rather than about present use (37). Many women are ashamed to admit their current use because of its possible ill effects on the developing fetus and are reluctant to report current involvement in illegal behavior. Asking about use in the past month seems to promote more honest responses (38, 138).

Despite the increased length of the questionnaire, some researchers believe that asking separate questions for each substance used elicits more accurate responses (e.g., ask about cocaine, heroin, and marijuana separately rather than about drugs; ask about beer, wine, and liquor separately rather than about alcohol) (18, 128, 106).

Accurate answers can also be obtained by suggesting a relatively large amount when posing questions about quantity (138, 34). At Cleveland Metropolitan General Hospital-Case Western Reserve University, pregnant patients who drink beer are asked, in a matter-of-fact tone of voice, "One or two six packs at a time?" Respondents who do not abuse alcohol usually laugh and specify an amount. Women with problems frequently agree with the amount suggested or provide a slightly lower one (138). Regardless of the response to any question, the interviewer's reactions should be accepting and nonjudgemental (93, 128, 138).

Location and Timing of Screening. Experts warn against setting up screening and referral programs as a separate function for pregnant women (138, 109). Instead, they suggest including screening within ongoing programs that already provide services to this population (109). Prenatal services are singled out most often as ideal sites for screening, but WIC Programs also are mentioned as possibilities (138, 106, 93, 68, 109).

Optimally, screening for use of drugs and alcohol should occur during the participant's first visit to the program. Some clinicians believe screening in some form should be repeated at subsequent visits because use is misreported by so many women with problems (128, 38).

Format of the Screening Instrument. The format of the screening instrument used should be compatible with the screening agency's and the assessment

agency's record-keeping systems. The instrument should not only be convenient for the screener to use, but it should mesh with the data requirements of other records maintained by both agencies (41).

The instrument should minimize writing to lessen the time required for completion and to maximize the clarity of responses. Also, the instrument should be printed in multiple-part form to expedite the referral for assessment. Instruments used in some programs, for example, are color coded so that the blue copy goes into the program's record and the yellow copy is sent to the assessment agency (68). The screening instrument should include a flagging method, scoring system, or some other device to separate persons who should be referred for assessment from those who should not (68). Criteria used in existing instruments may be viable for many programs; others may find that they need to adjust criteria to reflect the problems uncovered among their participants (34).

Characteristics of the Questioner. Experts in the treatment of chemically dependent women believe that skilled professionals should conduct both screening and referral (93, 117, 128, 138). Some recommend hiring drug and alcohol specialists to carry out this function; others recommend intensive training in drug and alcohol abuse screening and referral for every front-line worker in a program so that all can share in screening tasks and engage in informed observation of participants' behavior and physical status, even in the waiting room and rest room (117, 93, 138, 109). Still other experts believe that health educators and nutritionists should be trained to conduct screening (68).

The consensus is that proper screening requires substantial skill and that screeners need both didactic and experiential training in recognizing symptoms, establishing rapport, and posing and rephrasing questions (109). Operation PAR, a comprehensive drug abuse treatment and prevention program, provides training to social service programs in how to screen for drug and alcohol abuse (119).

Screening is intended to uncover possible problems. It is not definitive, and the numbers of possible users identified are probably underestimates of the true prevalence of drug and alcohol problems (38, 128, 138). To have an effect, screening must be

accompanied by an assessment or followed immediately by a referral for an assessment (138, 37, 68).

Referral

Identification of suspected drug and alcohol abuse has been termed the first step in treating the problem (138). Referral for further assessment, even when the referral is rejected, is a powerful method for penetrating the denial practiced by drug and alcohol abusers and signals that the problem is an urgent matter and should be taken seriously (138). Prior to developing and implementing a referral system, it is essential to investigate and assess the existing infrastructure of services. This ensures that an appropriate role for the new system can be clearly defined and that the system can function viably within an interlocking network that seeks to move a person suspected of alcohol or other drug involvement from identification (i.e., to determine possible drug abuse) to assessment (i.e., confirmation or diagnosis of drug abuse), through treatment, and on to recovery (152, 41).

In some settings, the service infrastructure may be minimal. If assessment and treatment services exist, they may not be suited to the special needs of the pregnant woman, or they may not be readily accessible because of their location, their hours, their cost, a language barrier, or absence of child care services (152). Appropriate programs may be filled to capacity (16, 152). In other settings, specialized assessment and treatment services may simply be unavailable (152).

Identifying Referral Resources. The first task is to identify and characterize services that may be available (126). In some communities, directories of services have already been compiled and can be updated and expanded easily. In others, a directory of resources may have to be developed (138, 131). The minimum information needed for referral purposes includes the program's name and location, services provided, hours, cost, eligibility requirements, admissions procedure, and contact person.

When a community offers a selection of services for assessment and treatment, site visits can be used to evaluate the appropriateness of services for the intended individuals. In some settings, there is no choice. Nonetheless, a site visit still gives the referring agency some understanding of what the referred person will encounter (126, 152).

Programs such as Shawnee, Health Start, Project Safe, and the Public Health Foundation, among others, strongly recommend using a skilled community resource and referral specialist to identify and evaluate available community resources and compile the directory (6, 68, 41, 115). They also suggest using this person to define a protocol for making referrals, develop an implementation plan for the referral service, function as a liaison with referral resources, train intake workers in the referral process, and direct the program's referral component on a daily basis (6, 68, 41, 115, 109).

Defining a Protocol for Referral. Information gathered for the directory of services can be used in defining a program's protocol for referral. Ideally, a referral for assessment should be made immediately after screening is completed, and, if possible, the screening and referral should be conducted by the same person (68, 128). It should be noted, however, that in some medically oriented programs (e.g., Cleveland Metropolitan General Hospital), a nurse does the screening and a physician handles the referral (138). The greater stature and credibility of the physician as perceived by low-income women, overcomes the disadvantages of changing the contact person midstream and interrupting the relationship established through the screening process (34, 81, 138).

The referral process generally begins by affirming any positive items from the screening (e.g., "you seem to be eating right, that's good for you and the baby) (34). The idea is to ease discomfort, foster rapport, and open up a dialogue with the participant (34). In keeping with this approach, throughout the referral process, a supportive, accepting, and interested tone of voice should be used (109, 138). Next, the problem area is singled out for attention, but again, the tone should not indicate disapproval: "You seem to be concerned about your drinking," "Your use of cocaine seems to be giving you problems" (34, 68). Then, the suggestion for additional help is made: "More help with this would be good for you and your baby," "I would like a specialist to talk to you some more about this" (68).

If the participant agrees, or at least does not disagree, the next step is to initiate the referral (138). In some programs, particularly those that are co-located with health clinics providing assessment or treatment services, it may be possible to

establish a system whereby a participant simply walks over for an assessment on the spot, preceded only by a quick call to notify the assessment provider that she is on the way (68, 41). Where staff resources permit, the woman may be accompanied to the assessment site to ensure that she follows through with the referral and to allay her anxiety (68, 41).

In many settings, however, an appointment is necessary. If circumstances permit, the referring program should call during the referral session to arrange a day, time, and contact person (138). The remainder of the referral time should be used in encouraging the participant to keep the appointment and in completing any forms needed to facilitate the assessment (138).

Some programs send copies of the screening form to the assessment or treatment agency by messenger; others mail them (138, 41). Some programs do not send a copy of the screening form at all. If any information on the screening form is released to another agency, a consent form should be signed by the participant prior to the release of information.[5]

Signed releases help ensure that the referring agency is in compliance with Federal regulations concerning confidentiality.

The participant should be given a referral form that contains the details about the referral (day, time, program name and address) and includes the name of a specific contact person and his or her phone number (41, 138). Personalizing the referral is important in overcoming the participant's reluctance to follow through (138). For both efficiency and purposes of documentation, some programs use multipart forms that contain the screening instrument, the consent form, and the participant's referral form all in one (41).

Handling Refusals. Experience at Cleveland General Metropolitan Hospital shows that although some women follow through on their appointments, many others refuse to accept a referral (138). Refusal is frequently due to a woman's denial of her chemical dependency as well as her fear of legal repercussions. If a woman fails to keep the

[5]Personal communication with General Counsel, Alcohol, Drug Abuse and Mental Health Administration, May, 1989.

appointment, it is important to maintain contact with her, to hold open the possibility of her keeping an appointment at another time, and to continue providing positive support and acceptance (138).

Clinicians at the Public Health Foundation observed through focus groups that many low-income Black women believe they are "exchanging control" over their own lives for "government assistance" every time they participate in a referral (115). To combat such feelings, it is helpful to point out areas in which the participant is succeeding to enhance her sense of empowerment, and to describe the referral as a positive opportunity for her to regain more control over her own life (115).

A woman who refuses to accept a referral should be asked to keep an "open mind" and, in the course of future contacts, the offer of referral should be reiterated in a positive way (138). Programs that have motivated women to become actively involved in working out the details of referrals have had some success with such second attempts, as have programs that use recovering pregnant women as role models to show the benefits of referral (115, 68).

Even if a woman refuses a referral, it is essential that the attempt to refer be documented (68). Some programs use a referral instructional sheet as a reminder (68). This sheet covers the range of possibilities for referral and serves as a check on actions taken and documentation completed (68). A copy of every form completed (e.g., screening, referral appointment, informed consent to release information, and referral instructional sheet) should be maintained in the participant's file (138, 68, 41). Maintaining copies of all forms allows the WIC agency to have a complete record of the referral. This avoids problems caused by staff changes and misplaced forms, and documents that a referral was made in case there is a question.

Establishing Linkages Among Programs. Linkages with other organizations must be established to ensure that procedures used in the referring organization are compatible with those in the referral resource; mechanisms are established to resolve problems or handle unusual cases; regular contact among services is maintained so that an individual's progress through the referral system can be tracked; and agreements are reached about which organization bears responsibility for a particular individual (61, 41).

Linkages also can be used to help train staff. In St. Petersburg, Florida, for example, Operation PAR trains staff from other programs in screening and referral (119).

Other programs identified as referral resources also can provide useful technical consultation on such matters as design of forms, documentation, maintaining confidentiality, and procedures for obtaining informed consent (61). Not only is assistance obtained from partners in the referral network specifically applicable to the requesting program and its participants, but sharing information also promotes consistency in approach and fosters interaction and cooperation among community-based health and social services organizations (118, 61).

Perhaps the most important benefit derived from an active effort to forge linkages among referring agencies and assessment and treatment resources is improved case management (41). Individual services become components of a total system, which, when functioning at its best, provides a person with genuine continuity of care (41).

Although affiliated with individual programs, staff who are linked to one another within a network also form a team capable of responding comprehensively to an identified participant's multiple needs (41, 61). A strong network of services allows each individual service to concentrate on what it does best, with the confidence that a competent organization in another field will provide additional needed services (61).

Training Staff in the Referral Process. Well-trained staff are the key to good referrals. Not only do staff need to be conversant with the procedures or mechanics involved in making a referral, but they must be able to establish a therapeutic relationship that will lead an individual to accept and follow through on the referral (68, 93, 138, 41, 128). Furthermore, they need specific instruction about chemical dependence so they can understand and interpret the responses and resistance they are likely to encounter (138).

Many social service agencies, as well as drug and alcohol treatment programs, use weekly team meetings to review cases, point out problems, and offer instruction in new techniques or alternative problem-solving methods (68, 41). A skilled professional generally leads these sessions and provides needed

training on an ongoing basis (41). In a document under development for FNS, detailed information on making referrals will be outlined for WIC staff.

Availability of Treatment. Treatment services for drug abusers are functioning at or over capacity in many cities (110). Some States, notably New York, have waiting lists for treatment. The intensified use of cocaine and crack, plus the growing AIDS crisis, is placing an "unprecedented strain on an already over-burdened treatment system...particularly in New York City" (16). As a result, many women seeking services simply cannot be accommodated (16, 110).

Securing a slot in an outpatient program where space has opened up can be particularly problematic for pregnant women (21). Unless the program is staffed with medical personnel trained in addressing the special needs of pregnant women or has access to a hospital-based chemical dependency unit for females, it does not want to admit pregnant women for services because it is unequipped to handle them (21).

Deficiencies in this area are so serious that the State Alcohol and Drug Abuse Program Directors declared programs targeted to women a priority in their Fiscal Year 1987 Report to the National Institute on Alcohol Abuse and Alcoholism and to the National Institute on Drug Abuse (16). Program Directors from Florida, Georgia, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, and Oregon, in particular, called specific attention to the lack of treatment services for women; other Program Directors have cited the need to include child care among the array of services offered by treatment programs.

Problems hampering women in their effort to access treatment services include:

- The location of the facility may be inaccessible. The facility may be too distant to walk to or inaccessible by public transportation, or transportation may cost more than the woman can afford (126, 68, 81, 115).

- Clinic hours may be inconvenient. Hours of operation may not mesh with the woman's schedule, especially if she has responsibility for the care of children (126).

- The cost of service may be prohibitive. Most low-income women do not have health insurance, and even if the fee for service is based on a sliding scale, the cost may be beyond their means. Additionally, some experts argue that inpatient or residential treatment is especially necessary for women living in drug trafficking areas because it removes them from their environment, yet the costs for this kind of care put it beyond the reach of many who could profit from it the most (126).

- Language may pose a barrier. If program staff and the women seeking services speak different languages, it is unlikely that the prospective clients will complete the admissions process (126, 81).

- Staffing patterns may arouse fear or apprehension. Research indicates that women are much more likely to stay in treatment if they have female counselors and if they can participate in same-sex therapy groups (126). However, treatment programs are staffed primarily by men and the majority of clients are men (126, 110).

- Child care may be unavailable. Without some form of supervision for their children at the treatment facility, it is virtually impossible for some women to participate regularly in counseling (126, 41). Most treatment centers do not have child care.

- Services may be fragmented. Because so few drug treatment services are coordinated or co-located with the full range of social and health services required by the pregnant woman or mother, the female drug-user may have to travel to one site for welfare assistance and food stamps, to another for WIC services, to a third fc prenatal services, and to a fourth for drug treatment services. The persistence required to follow through in this kind of situation is usually greater than that possessed by women in need of such services, and may prove physically impossible for pregnant clients (126, 41, 68).

Legal issues, such as required reporting of cases of abuse and neglect, testing, and criminalization, also may pose a barrier to treatment for chemically dependent pregnant women. For example, some States

(e.g., New York) consider parental drug abuse *prima facie* evidence of child neglect (132). It is common practice in New York City to screen newborns for the presence of illicit drugs when maternal abuse is suspected. Positive results trigger a mandatory report to the child protection authorities.

Legislation pending in Arizona would require that a child born physically dependent on a controlled substance or alcohol be placed in immediate protective custody. The parent would have up to a year to complete detoxification in order to regain custody (141). Similar legislation pending in Minnesota would require physicians to test newborns for exposure to controlled substances. If the toxicological tests proved positive, the physician would be required to report the mother to the Department of Health for child neglect (141). Finally, current law in Florida allows the toxicological testing of newborns suspected of chemical dependence without the mother's consent. Positive results must be reported (141).

There have also been a few instances of legal prosecution of new mothers for their use of illicit drugs during pregnancy (most recently in Illinois). Although many attempts to criminalize drug abuse during pregnancy have been dismissed, public concern may increase the use of such methods in the future to deter alcohol and other drug abuse.

Exemplary Treatment Programs for Pregnant Women

What is most striking about the programs designed specifically for treatment of pregnant alcohol and other drug abusers is the comprehensiveness of the services provided and that these services are designed for the needs of women. In most cases, services include medical care, intensive psychosocial counseling (for the individual and the family), support services such as child care and transportation, health education, and legal counseling (26, 51, 157, 41). Examples of successful programs include the Perinatal Addiction Center at Northwestern Hospital in Chicago, the Family Care Center at Jefferson Hospital in Philadelphia, and the Program for Pregnant Addicts and Addicted Mothers at Metropolitan Hospital in New York City (130). The Mabond Program Family Center in New York City provides residential treatment that includes education and job training services, however, services are available for only 30 women and their children (130).

At a minimum, the medical services provided by exemplary programs entail on site prenatal care and a drug or alcohol treatment regimen designed for the individual pregnant woman. The medical staff are highly trained in the implications for the mother and the baby of drug withdrawal during pregnancy and design a specific treatment regimen based on the involved drug or drugs (26, 51, 157, 41).

Medical care may also include pediatric care for other children in the family and medical services for any problems of the mother separate from the pregnancy, such as hepatitis (51). Programs have also developed affiliations with hospitals with pediatric units trained in the special problems of the drug-addicted or drug-affected newborns (26).

Because many of the addictive substances abused by pregnant women do not have a pharmacologic treatment, as does heroin, counseling plays a critical role in treatment. Programs offer both individual and group counseling. Group sessions include pregnant and postpartum women and extend as long as one year beyond delivery. The aim of this extended counseling is to enhance the parenting skills of the women involved. Many programs also involve key family members in counseling. This facilitates reentry for the women, especially if the program is residential.

Another critical component of programs is aftercare, that is, a step-by-step plan tailored to meet an individual woman's need for specific services to help her find a job, secure day care, resolve a legal problem, or address any other issues that may impede her recovery (117, 26, 51, 157, 41).

Health education is another important part of the drug treatment process. Specific topics include understanding and coping with the symptoms of pregnancy, preparation for childbirth, infant development, infant care, and nutrition. Nutritional counseling is particularly important because of the suppression of appetite caused by many drugs. Health education provides the knowledge necessary to allow the woman greater control over her health and the health of her children. Some programs feature strong education programs for the children of drug abusers to help the children understand and cope with the behavior of their addicted parents (117, 26, 51, 157, 41).

Legal counseling is often a necessary component of a comprehensive drug treatment program. The drug-abusing woman has often been declared an unfit mother and must deal with the legal system to regain custody of her children. She has frequently been involved in illegal acts to obtain money for drugs and must deal with the legal ramifications of those acts.

Comprehensive programs often have social workers or legal counselors to work on these issues with clients (119, 117, 26).

Exemplary programs generally provide outpatient services. Receiving services on an outpatient basis allows a woman to take care of children already at home (117).

Staffing of comprehensive drug treatment programs usually includes physicians, nurses, counselors (such as social workers or psychologists), nutritionists, and health educators. Because many of these programs are either hospital based or part of drug treatment agencies, staff from the larger organizations may act as consultants to the programs. The critical component seems to be the accessibility to the client of services and staff (117, 119). The client goes to one location and receives multiple services under one roof. Also, it is important that there be female staff members of ethnic backgrounds similar to that of the clients whenever possible. Further, the staff in most direct contact with the clients should be constant so that participants can develop relationships with the staff (117, 119).

Cost is another important factor in the design of treatment programs for pregnant addicts. Many women who need these services have low incomes and cannot afford to pay full fees. As a result, many of the programs designed for this population have sliding fee scales. However, clients are not turned away because of their inability to pay or lack of health insurance (142, 26). This may, however, contribute to the limited number of slots available to pregnant women. All of the services discussed are costly and are not fully covered by patient fees. As such, the exemplary programs discussed must rely on supplemental funds (i.e. private funds, federal dollars, etc.). When these funds are limited, so are the opportunities for chemically dependent women who need treatment.

4. RECOMMENDATIONS

This chapter presents recommendations for the provision of drug abuse information and referral in WIC.

WIC Program Responsibility Should Be Limited to Information and Referral

As intended by Congress, the role of State and local WIC agencies should be to:

- raise awareness of the dangers of drug abuse by disseminating information to all adult participants and the parents or caretakers of infant and child participants;
- conduct screening of participants to the extent necessary to determine whether there is possible drug abuse; and
- facilitate access to assessment and treatment, as appropriate, by providing referrals to available community programs.

WIC staff should not be required to conduct in-depth assessments of the extent of individual drug abuse problems, provide counseling, or attempt to treat chemically dependent women. These critical services should be provided by trained drug and alcohol professionals.

Drug abuse prevention efforts should not reduce or impair existing nutrition education programs or any of the other vital aspects of current operations. WIC involvement in drug abuse prevention beyond the identified role of providing information and referrals is unlikely to be possible without a concomitant reduction in other activities.

Drug Abuse Prevention Activities Should Be Nonthreatening

WIC provides an important opportunity for women and young children who are at nutritional risk to receive supplemental foods and nutrition education. Drug abuse information and referral efforts should not deter women from entering WIC. An effective program should be nonthreatening and should not disturb the delicate balance of client-provider trust that the WIC Program maintains.

Presentations arousing fear or inducing guilt have little effect and, in some instances, are counterproductive. By confirming the hopelessness of the situation, negative information efforts convince some recipients of the futility of change. Therefore, information provided should state that although abstinence from alcohol and other drugs is the best course for pregnant women to follow, reducing levels of use yields substantial benefits to both mother and child.

Information and Referral Efforts Should Reflect the Characteristics of WIC Participants

WIC participants are generally young and poor. They often belong to ethnic-minority groups. Educational levels are low, and many participants have difficulties with the English language: about 50 percent of local WIC agencies serve Spanish-speaking clients and more than one-third serve clients speaking Asian languages, most often Vietnamese. Consequently, an effective prevention program must be suitable for individuals with low literacy skills and should reflect the diversity of ethnic and cultural backgrounds represented in the WIC Program. Materials should also be available in foreign languages.

Pamphlets and other written materials should be brief, easy to understand, colorful, and illustrated with photographs or drawings that reflect the ethnic and cultural situations of the audience without conveying a sense of hopelessness or fostering stereotypes.

Specifically, print materials should be visually appealing; use short, conversational sentences, an active voice, and familiar vocabulary; and employ simple, clear illustrations to increase visual appeal and reinforce important concepts and messages.

Posters and other graphic media can be appealing and can help clarify and reinforce important messages. However, these items tend to be more expensive than simple printed materials. Their appeal is also subjective: what might work with one individual may be rejected by another. Consequently, care should be taken when selecting graphics for use in an informational activity. Viewers should be able to identify with the visual images. Images and captions should be simple, clear, and direct.

Although expensive, films and videotapes can be very effective with persons with low literacy skills. Visual images and the spoken word are excellent substitutes for reading, which may be difficult for some clients. Unfortunately, many currently available films are not appropriate for WIC participants. In selecting audiovisuals, WIC should ensure that the messages, language, and situations portrayed are relevant to WIC participants so that they can identify their own life situations with those depicted.

During pregnancy, women are often receptive to messages urging them to adopt healthy behaviors. Although there is a physiological explanation for many of these changes (e.g., tobacco and alcohol cause discomfort for substantial numbers of pregnant women), researchers also believe that women are psychologically more responsive to information at this time, especially if a positive impact on the developing fetus is cited. WIC should take this into account when developing informational messages.

Information Efforts Should Be Tailored to the Types of Drug Abuse Problems Typically Found in the Community

Information and referral activities should reflect the specific drug abuse problems that are most likely to be affecting a local WIC agency's clients. For example, an agency in a community marked by increased sales of "crank" (methamphetamine) should include a strong emphasis on this drug in its information program. Similarly, a WIC agency identifying a potentially significant population of drug and alcohol abusers should adjust its mix of services (and resources) in favor of the screening-referral component. The State Drug and Alcohol Director and the local police or sheriff's office, hospital, or public health department can be contacted for assistance in understanding the patterns of drug and alcohol abuse in a specific community.

This information can also be used to help tailor the informational program. Commonly used jargon and slang (e.g., "booze" for liquor) should be used rather than more clinical terms.

Drug Abuse Information Should Be Provided Through Personal Contact

Person-to-person communication is the most effective way to convey information, especially on such a sensitive subject as drug abuse. But, to work properly, the person providing the information must be trusted by the client, able to communicate in the client's native language, and capable of establishing the necessary rapport with the client. Personal contact should be supplemented and reinforced by print or audiovisual materials, or both, geared specifically to the interests of WIC participants.

Efforts should also include activities designed to induce appropriate behavior and to subsequently sustain such behavior through various reinforcement methods. In WIC, this can be accomplished by using special group counseling sessions for women assessed as high risk and by reinforcing the desire and decision to be drug- and alcohol-free during individual contact sessions that occur when monthly food vouchers are distributed.

Information Activities Should Distinguish Nonusers and Nondependent Users From Chemically Dependent Users

Research shows that nonusers and nondependent users respond differently to information than chemically dependent users. Therefore, both audiences should be considered when selecting and developing information materials. Chemically dependent women usually do not respond to general information; therefore, materials selected for the waiting room and for use in group educational sessions should be targeted to nonusers and nondependent users. Information for users should be provided privately in the context of screening and referral and in follow-up counseling sessions, as appropriate. The best information for chemically dependent women in WIC programs is a good referral, supplemented by positive comments supporting recovery.

Local WIC Agencies Should Establish Linkages with Local Drug Abuse Services

Local WIC agencies should identify community-based drug abuse treatment and other related services (e.g, Alcoholics Anonymous, Narcotics Anonymous, Cocaine Anonymous, Al-Anon) and establish linkages with them in order to facilitate referrals.

If resources permit, local WIC agencies also should follow up on referrals. This information could be used by WIC staff to support participants' efforts to control their alcohol and other drug problems. Where multiple services (including WIC) are lodged under one roof, local WIC agencies should explore the possibility of developing cooperative information and referral activities. If, for example, the prenatal services agency already screens for health status, lifestyle risks, and family history, drug and alcohol questions should be included there. Participants coming to WIC from prenatal services should not be subjected to rescreening. Instead, the WIC agency would provide follow-up support to reinforce the information these participants have already received and to support the treatment and recovery process.

Local WIC Agency Staff Should Be Trained in Providing Drug Abuse Information and Referral Services

Training staff in the effects of alcohol and other drug use on pregnancy and in methods of providing information, conducting a screening, and making a referral is essential if information and referral services are to be effective. Because not every WIC agency has staff that currently possess a high level of skill in screening and referrals for drug abuse problems, staff should receive training in this area. WIC staff may be especially anxious about asking sensitive questions about socially disapproved or illegal behavior. Experientially based training could alleviate much of this concern. Experientially based training first simulates "real-life" screening and referral situations with trainees playing the roles of interviewer and participant. Once trainees are comfortable with artificial interviews, they begin conducting genuine screening and referrals which are observed by skilled interviewers. Through the skilled observer's critiques and/or through case studies of screening and referral results discussed in weekly staff meetings, new interviewers learn to improve and enhance their screening and referral skills.

In some communities, drug and alcohol abuse treatment programs are equipped to provide training and consultant services to social services organizations. Tapping existing drug and alcohol programs for training services would be cost-effective, would ensure that the training provided covered problems specific to the community's population, and would be the first step in creating a link to available drug

abuse programs for referrals. WIC State agencies should coordinate with their State Alcohol and Drug Abuse Director to identify potential resources for training and consultation.[6]

Where training is not available through local drug treatment programs, local agencies should use reference materials to be developed by FNS and pursue training consultation from a community mental health center or public health agency. The manual, which is under development, will provide information about the effects of alcohol and other drugs as well as guidelines for providing information, conducting screenings, and making referrals. Skilled personnel from mental health and public health agencies could demonstrate how they educate clients and how they screen and refer. These professionals may be available for ongoing consultation and to observe and comment on screening and referrals at local WIC agencies.

Some WIC agencies are isolated or unable to access services from other agencies. To assist them with training, FNS should sponsor the production of a training film or videotape and instructional guide to teach and model assessment and referral skills. A training film or videotape would enable WIC staff to observe examples of properly conducted screening and referral. Films and videotapes can be used as often as needed and to enhance the training given to new staff. Although well intentioned, efforts by untrained staff could inhibit the referral process by making the screening interview a negative experience for participants.

WIC State Agencies Should Develop Drug Abuse Referral Procedures for Implementation at Local Agencies

WIC state agencies should develop a set of drug abuse referral procedures for implementation at local agencies. These referral procedures should include steps for documenting when and to whom the referral was made. Procedures for guaranteeing

[6]The National Association of State Alcohol and Drug Abuse Directors (NASADAD) can be contacted for a listing of State Alcohol and Drug Abuse Directors. NASADAD's address is: National Association of State Alcohol and Drug Abuse Directors, Inc., 444 North Capitol Street, N.W., Suite 520, Washington, DC 20001.

confidentiality also should be described. These include such topics as allocation of private interview space, limited access to referral records and staff prohibitions against discussing participant responses or referral information. In addition, these procedures should describe methods for handling refusals to pursue a referral.

Participants Should Be Screened for Referral to Needed Services

It is important to identify persons who may be using alcohol and other drugs and to refer them for assessment and specialized assistance, if appropriate. However, to be effective, local WIC agencies must:

- be willing to ask questions about drug and alcohol use;
- have adequate information about available sources of professional assessment and assistance;
- have a viable system for making referrals; and
- follow up to see that referral appointments are kept.

Questions must be asked at the time of certification or recertification to determine if the person may have a problem with alcohol or drug abuse, connections with community-based service providers must be established to facilitate referrals, and participants must be supported in their efforts to pursue referrals.

Questions on use of drugs should be embedded within the nutritional history so they appear natural and nonthreatening. Because the literature shows that personal contact plays such an important role in conveying information to low-income women with low literacy skills, and because chemically dependent users tend to misreport their drug and alcohol use, self-administered screening questionnaires are not recommended.

FNS, in conjunction with the National Association of State WIC Directors, should provide guidance materials to local WIC agencies regarding appropriate questions to be integrated into current nutrition assessment instruments. State WIC Directors should also establish linkages with State Alcohol and Drug

Abuse Directors to obtain the benefit of their experience in this regard.

Coordinating drug and alcohol information and referral services with existing assessment and treatment services appears to contribute substantially to effective implementation. Therefore, it is recommended that State WIC Directors continue their relationship with State Drug Directors in order to begin building the capacity to help local WIC agencies identify drug assessment and treatment programs as a first step toward coordinating WIC's efforts with those ongoing in the community.

USDA Should Develop a Videotape and a Brochure on Drugs and Pregnancy for WIC Participants and a Resource Manual and a Videotape for WIC Professionals on Providing Drug Abuse Information and Conducting Referrals

Based on gaps identified in a recent FNS-contracted review of available client and staff materials on drug abuse, USDA should develop a videotape and a brochure on drugs and pregnancy for WIC participants and a resource manual and a videotape for WIC professionals on providing drug abuse information and conducting referrals.

Participant materials should reflect the needs of low literacy readers and viewers in terms of their language and format. Clear, no-use messages should be conveyed, although the benefits of reducing alcohol, tobacco and other drug use at any time during pregnancy should be described. Materials should be consistent with WIC's positive image and should be made available in English, Spanish and a Southeast Asian language based on the WIC caseload.

The pamphlet should provide easy-to-read information for WIC participants to take home. The video should be shown in WIC waiting rooms or as part of group nutrition sessions. It also could be incorporated into staff orientation programs as basic background on the effects of alcohol and other drugs on pregnancy.

A resource manual and a videotape are recommended as staff training aids. They should demonstrate techniques for providing drug abuse information to WIC participants and for conducting screening and making referrals.

August 15, 1989

(1) Dear Members of the Council:

I would like to address the alcohol, drug referral information issue from the insight of a parent participant. The new WIC participant information (brochure sample) I comprised last year had examples of drug/alcohol/smoking information contained in the sample. (Which should also include State to State of a list of substance abuse referral centers.) I have various concerns on this matter, please let me explain:

We all agree as a Council the need for this type of brochure. My concern is to keep the pamphlet as clear and concise as possible.

Why? You may ask, because of the following factors that I will indicate:

The brochure should be:

(a) About a 6th Grade reading level (because of the drop out rate, teen population, illiteracy, etc.)

(b) If you decide to make a pamphlet into a booklet where there is much reading, it may overwhelm the new participants as a whole. Chances are, she may not even read the information that can be vital to her and her baby's well being. In doing so, this wastes time, money, etc. I must emphasize the need here to be clear, informative yet concise.

(2) Furthermore, for those (who fall between the cracks), we end up in not targeting the WIC reading material. I'm also suggesting Drug/Alcohol/Smoking abuse types of videos. For example in the Hoboken WIC letter in New Jersey, the waiting room has a video machine which constantly airs nutrition, etc. I feel we can reach these women by televising these videos at WIC centers and it also helps staff as well in keeping clients occupied so they can handle and help other new participants while they are getting educated as well.

(a) The Department of Agriculture should provide these tapes in English/Spanish to WIC centers so these new participants can see what happens to the fetus and the long term effects of smoking/alcohol/drugs when the fetus is exposed to these substances up to the day of delivery and after.

(b) At the end of this video, have a list on the screen of their own State-run substance abuse programs that can help them, or see the WIC nutritionist who will have that list available of proper substance abuse authorities. Stress on the video screen and to the WIC Nutritionist the need for confidentiality. If confidentiality isn't somehow stressed, in my opinion, really trying to reach this targeted amount of people will only be idealistic in paper with no approachable realistic results.

Again, Why do you say this? Based on my experience in church ministry in Hoboken. Also in being an associate director many years ago for a Christian drug and alcohol program.

WIC participants have multiple fears.

(1) Afraid that the WIC checks will be stopped

(2) Afraid that other various agencies will be notified of their dilemma. Such as the Food Stamp program. Also that DFYUS will be notified and take their children away. Granted each situation is individual but we must come to terms to solve these crucial problems.

Please take these suggestions for your consideration.

Respectfully submitted,

Yolanda Cleffi
Parent Participant

REFERENCES

1. Abel, E.L. and B.A. Dintcheff. 1986. "Increased Marihuana-Induced Ferotoxicity By a Low Dose of Concomitant Alcchol Administration." Journal of Studies on Alcohol. 47 (2): 440-43.

2. _____. and R. Sokol. 1986. "Fetal Alcohol Syndrome is Now Leading Cause of Mental Retardation." Lancet. 2: 1222.

3. _____. 1981. "Marijuana and Sex: A Critical Survey." Drug and Alcohol Dependence. 8: 1-22.

4. _____. 1980. "Prenatal Exposure to Cannabis: A Critical Review of Effects on Growth, Development, and Behavior." Behavioral and Neural Biology. 29 (2): 137-56.

5. Acker, D., et al. 1983. "Abruptio Placentae Associated with Cocaine Use." American Journal of Obstetrics and Gynecology. 146 (2): 220-21.

6. Adolescent Substance Abuse Prevention Education Network (ASPEN) Bi-Annual Report. 1989. Shawnee/Adolescent Health Center, Illinois.

7. Alroomii, L.G., et al. 1988. "Maternal Narcotic Abuse and the Newborn." Archives of Disease in Childhood. 63: 81-83.

8. American Lung Association. 1982. Handbook for Healthcare Providers: Smoking and Pregnancy.

9. Baird, D.D., and A.J. Wilcox. 1985. "Cigarette Smoking Associated with Delayed Conception." Journal of the American Medical Association. 253 (20): 2979-83.

10. Battjes, A. 1985. "Prevention of Adolescent Drug Use." International Journal of the Addictions. 20 (6&7): 1113-34.

11. Beaulac-Baillargen, L., and C. Desirsuos. 1987. "Caffeine-Cigarette Interaction on Fetal Growth." American Journal of Obstetrics and Gynecology. 157 (5): 1236-40.

12. Bingol, N., et al. 1987. "Teratogenicity of Cocaine in Humans." Journal of Pediatrics. 110: 93-96.

13. Botvin, G.J., and T.A. Willis. 1985. "Personal and Social Skills Training: Cognitive-Behavioral Approaches to Substance Abuse Prevention." In Prevention Research: Deterring Drug Abuse Among Children and Adolescents. Bells, C.S., and R. Battjes (eds.) U.S. Government Printing Office, Washington DC, DHHS Publication No. ADM 85-1334.

14. Braude, M.C., and J.P. Ludford (eds). 1984. Marijuana Effects on the Endocrine and Reproductive Systems: A RAUS Review Report. NIDA Research Monograph 44, Dept. HHS.

15. Brooten, D., and C.H. Jordan. 1983. "Caffeine and Pregnancy: A Research Review and Recommendations for Clinical Practice." Journal of Obstetric and Gynecologic and Neonatal Nursing. 12 (3): 190-95.

16. Butynski, W., and D. Canova. 1988. "State Resources and Services for Alcohol and Drug Abuse Problems: Fiscal Year 1987." A Report for the National Institute on Alcohol Abuse and Alcoholism and the National Institute on Drug Abuse, Washington, DC.

17. CSR Incorporated. 1987. "Use of Selected Drugs Among Hispanics: Mexican Americans, Puerto Ricans, Cuban Americans" (Findings from the Hispanic Health and Nutrition Examination Survey). Contract No. 271-84-7308.

18. Cahalan, D., et al. 1969. American Drinking Practices. College and University Press, New Haven, CT.

19. Chaney, N.E., et al. 1988. "Cocaine Convulsions in a Breast-feeding Baby." Journal of Pediatrics. 112: 134-35.

20. Chasnoff, I.J., et al. 1989. "Temporal Patterns of Cocaine Use in Pregnancy." Journal of the American Medical Association. 261: 1741-44.

21. _____. (ed.). 1988. Drugs, Alcohol, Pregnancy and Parenting. Kluwer Academic Publishers, Boston, MA.

22. _____. et al. 1988. "Maternal Cocaine Use and Genitourinary Tract Malformations." Teratology. 37: 201-4.

23. _____. et al. 1987 "Cocaine Use in Pregnancy: Perinatal Morbidity and Mortality." Neurotoxicology and Teratology. 9: 291-93.

24. _____. et al. 1987. "Cocaine Intoxication in a Breast-Fed Infant." Pediatrics. 80: 836-38.

25. _____. 1987. "Perinatal Effects of Cocaine." Contemporary OB/GYN. May: 163-79.

26. _____. 1986. Drug Use in Pregnancy: Mother and Child. MTP Press Ltd.

27. _____. et al. 1986. "Perinatal Cerebral Infarction and Maternal Cocaine Use." Journal of Pediatrics. 108 (3): 456-59.

28. _____. et al. 1985. "Cocaine Use in Pregnancy." New England Journal of Medicine. 313: 666-9.

29. _____. et al. 1983. "Phencyclidine: Effects on the Fetus and Neonate." Developmental Pharmacology and Therapeutics. 6: 404-8.

30. Chen, J.S., et al. 1982. "Ontogeny of Suckling Behavior in Rats Prenatally Exposed to Alcohol." Teratology. 26: 145-53.

31. Cherukuri, R., et al. 1988. "A Cohort Study of Alkaloidal Cocaine ('Crack') in Pregnancy." Obstetrics and Gynecology. 72 (2): 147-51.

32. Chouteau, M., et al. 1988. "The Effect of Cocaine Abuse on Birth Weight and Gestational Age." Obstetrics and Gynecology. 72: 351-54.

33. Coles, C.D., et al. 1984. "Neonatal Ethanol Withdrawal: Characteristics in Clinically Normal, Nondysmorphic Neonates." Journal of Pediatrics. 105 (3): 445-51.

34. Cook, P. 1986. Drugs and Pregnancy: It's Not Worth The Risk. American Council for Drug Education, Rockville, MD.

35. Cooper, J.R., et al. (eds.) 1983. "Effects of Methadone on Offspring and Users." Research on the Treatment of Narcotics Addiction: State of the Art. NIDA Treatment Research Series, U.S. Department of Health and Human Services, Washington, DC.

36. Cox, S.M., et al. 1988. "Bacterial Endocarditis, A Serious Pregnancy Complication." Journal of Reproductive Medicine. 33 (7): 671-74.

37. Day, N.L., and N. Robles. (In Press.) "Methadologic Issues in the Measurement of Substance Use." In Prenatal Abuse of Licit and Illicit Drugs, Hutchings, D.E. (ed.) New York Academy of Sciences.

38. _____. et al. 1985. "Measurement of Substance Use During Pregnancy: Methadologic Issues." In Current Research on the Consequences of Maternal Drug Abuse, Pinkert, T.M. (ed.). National Institute on Drug Abuse, Rockville, MD.

39. DeJong, W. 1986. "Project DARE: Teaching Kids To Say 'No' To Drugs and Alcohol." National Institute of Justice Reports, Washington, DC.

40. Delgado, M. 1988 "Alcoholism Treatment and Hispanic Youth." The Journal of Drug Issues. 18 (1): 59-69, 1988.

41. Department of Health and Human Services, Office of Human Development Services, Administration for Children, Youth and Families. 1988. Illinois Child Neglect Services Project Evaluation Report: Project Safe. Grant No. 90CA11740.

42. DesJarlais, D.C., and S.R. Friedman. 1988. "Transmission of Human Immunodeficiency Virus Among Intravenous Drug Users." In Devita, D.T., et al. (Eds) AIDS: Etiology, Diagnosis, Treatment, and Prevention. 2nd Edition, J.B. Lippencott Co., Philadelphia, PA.

43. Doak, C.C., et al. 1985. Teaching Patients With Low Literacy Skills. J.P. Lippincott Company, Philadelphia.

44. Doberczak, T.M., et al. 1988. "Neonatal Neurologic and Electroencephalographic Effects of Intrauterine Cocaine Exposure." Journal of Pediatrics. 113: 354-8.

45. Dogoloff, L.I. and R.T. Angarola. 1985. Urine Testing in the Workplace, Price S. (ed.) American Council for Drug Education, Rockville, MD.

46. DuPont, R.L. (ed.). 1988 (unpublished). "Stopping Drug Abuse Before It Stops." Institute for Behavior and Health, Rockville, MD.

47. Edelin, K.C., et al. 1988. "Methadone Maintenance in Pregnancy: Consequences to Care and Outcome." Obstetrics and Gynecology. 71 (3): 399-404.

48. F.A.C.E.T., Family Addiction Center for Education and Treatment: Program Description, San Francisco, CA.

49. Fehr, K., and H. Kalant (eds.) 1983. Addiction Research Foundation/World Health Organization Meeting on Adverse Health and Behavioral Consequences of Cannabis Use. Addiction Research Foundation, Toronto, Canada.

50. Finnegan, L.P. 1982. "Outcome of Children Born to Women Dependent Upon Narcotics." In Stimmel, B. (ed.), Advances in Alcohol and Substance Abuse: The Effects of Maternal Alcohol and Drug Abuse on the Newborn, The Haworth Press, Inc.

51. _____. (ed.) 1979. Drug Dependence in Pregnancy: Clinical Management of Mother and Child. NIDA Research Monograph, U.S. Department of Health and Human Services, Washington, DC.

52. Fiore, M.C., et al. 1989. "Trends in Cigarette Smoking in the United States." Journal of the American Medical Association. 261: 49-55.

53. Food and Nutrition Service, U.S. Department of Agriculture. 1989. Study of Funding of Nutrition Services and Program Administration in the WIC Program. Alexandria, VA.

54. _____. 1988. Synthesis of Case Study Findings in the WIC Program. Alexandria, VA.

55. Frank, D.A., et al. 1988. "Cocaine Use During Pregnancy: Prevalence and Correlates." Pediatrics. 82 (6): 888-95.

56. Fried, P.A., et al. 1985. "Soft Drug Use After Pregnancy Compared to Use Before and During Pregnancy." American Journal of Obstetrics and Gynecology. 151 (6): 787-92.

57. _____. et al. 1984. "Marijuana Use During Pregnancy and Decreased Length of Gestation." American Journal of Obstetrics and Gynecology. 150: 23-7.

58. _____. et al. 1983. "Marijuana Use During Pregnancy and Perinatal Risk Factors." American Journal of Obstetrics and Gynecology. 146: 992-94.

59. Galan, F.J. 1988. "Alcoholism Prevention and Hispanic Youth." The Journal of Drug Issues. 18 (1): 49-58.

60. Gilbert, M.J., and A.M. Alcocer. 1988 "Alcohol Use and Hispanic Youth: An Overview." Journal of Drug Issues. 18 (1): 33-48.

61. Godley, M.D., et al. 1988. "Illinois Child Neglect Services Project: Evaluation Report." State of Illinois Department of Children and Family Services, Springfield, IL.

62. Goodrich, N. et al. 1986. Report on WIC Nutrition Education Services: Study of WIC Program and Participant Characteristics. Report submitted to the Food and Nutrition Service, USDA by Ebon Research Systems and Abt Associates Inc., Alexandria, VA.

63. Goodwin, T.M. 1988. "Toluene Abuse and Renal Tubular Acidosis in Pregnancy." Obstetrics and Gynecology. 71 (5): 715-18.

64. Gregg, J.E.M., et al. 1988. "Inhaling Heroin During Pregnancy: Effects on the Baby." British Medical Journal. 296: 754.

65. Haddow, J.E. 1989. "Second Trimester Serum Catinine Levels in Nonsmokers in Relation to Birth Weight." Journal of the American Medical Association. 261 (1): 33.

66. Hatch, E.E., and M.B. Bracken. 1986. "Effect of Marijuana Use in Pregnancy on Fetal Growth". American Journal of Epidemiology. 124 (6): 986-93.

67. Hawley, R.A., et al. 1986. Building Drug-Free Schools: Curriculum. American Council for Drug Education, Rockville, MD.

68. Health Start. 1986. "A Lifestyle and Nutritional Approach to Chemical and Tobacco Use During Pregnancy: Jan 1, 1984 - Jan. 1, 1985" (Final Report). St. Paul Maternal and Infant Care Project, St. Paul-Ramsey Medical Center, St. Paul, MN.

69. Henderson, C.E., and M. Torbey. 1988. "Rupture of Intracranial Aneurysm Associated with Cocaine Use During Pregnancy." American Journal of Perinatology. 5 (2): 142-43.

70. Higgins, P.S. 1988. "The Prevention of Drug Abuse Among Teenagers: A Literature Review." In Funders' Guide Manual. Amherst H. Wilder Foundation, St. Paul, MN.

71. Hill, L.M., and F. Kleinberg. 1984. "Effects of Drugs and Chemicals on the Fetus and Newborn." Mayo Clinic Proceedings. 59: 707-16; 755-65.

72. _____. and L. Stern. 1979. "Drugs in Pregnancy: Effects on the Fetus and Newborn." Drugs. 17: 182-97.

73. Hingson, R., et al. 1982. "Effects of Maternal Drinking and Marijuana Use on Fetal Growth and Development." Pediatrics. 70 (4): 539-46.

74. Huff, B. (ed.). 1985. Physician's Desk Reference. Medical Economics Co., Inc., Oradell, NJ.

75. Institute of Medicine, Committee to Study the Prevention of Low Birthweight. 1985. Preventing Low Birthweight. National Academy Press, Washington, DC.

76. _____. National Academy of Sciences. 1985. Preventing Low Birthweight: Summary. National Academy Press, Washington, DC.

77. _____. 1982. Marijuana and Health. National Academy Press, Washington, DC.

78. Intergovernmental Health Policy Project. 1989. In Nation's Health newsletter. July 3, 1989.

79. Jones, E., and H. Sigall. 1979. "The Bogus Pipeline: A New Paradigm for Measuring Affect and Attitude." Psychology Bulletin. 76: 349-64.

80. Joseph, S.C. 1988. "Current Issues Concerning AIDS in New York City." New York State Journal of Medicine. 253.

81. Juarez and Associates, Inc. 1982. "Healthy Mothers" Market Research: How To Reach Black And Mexican American Women -- Final Report. Public Health Service, U.S. Department of Health.

82. Khavari, K., and P. Farber. 1978. "A Profile Instrument for the Quantification and Assessment of Alcohol Consumption." Journal of Studies on Alcohol. 39: 1525-39.

83. Kleinman, J.C. et al. 1988. "The Effects of Maternal Smoking on Fetal and Infant Mortality." American Journal of Epidemiology. 127 (2): 274-82.

84. _____. and J.H. Madans. 1985. "The Effects of Maternal Smoking, Physical Stature, and Educational Attainment on the Incidence of Low Birth Weight." American Journal of Epidemiology. 121 (6): 843-55.

85. Klenka, H.M. 1986. "Babies Born in a District General Hospital to Mothers Taking Heroin." British Medical Journal. 293: 745-46.

86. Kottke, T.E., et al. 1988. "Attributes of Successful Smoking Cessation Interventions in Medical Practice, A Meta-analysis of 39 Controlled Trials." Journal of the American Medical Association. 259: 2883-89.

87. Laengreid, L., et al. 1989. "Teratogenic Effects of Benzodiazepine Use During Pregnancy." The Journal of Pediatrics. 114: 126-31.

88. Lea, T., et al. 1987. In Drug Use in Pregnancy. Neibye, J.R., (ed.) 203-22.

89. Lifschitz, M.H., et al. 1985 "Factors Affecting Head Growth and Intellectual Function in Children of Drug Addicts." Pediatrics. 75 (2): 269-74.

90. Little, B.B., et al. 1989. "Cocaine Abuse During Pregnancy: Maternal and Fetal Implications." Obstetrics and Gynecology. 73: 157-60.

91. _____. et al. 1988. "Methamphetamine Abuse During Pregnancy: Outcome and Fetal Effects." Obstetrics and Gynecology. 72 (4): 541-4.

92. _____. et al. 1988. "Cocaine Use in Pregnant Women in a Large Public Hospital." American Journal of Perinatology. 5 (3): 206-7.

93. Little, R.E., and A.P. Streissguth. 1987. "Reducing Fetal Alcohol Effects: The Seattle Pregnancy and Health Program." In Die Alkohol-Embryopathie, Majewski, F. (ed.)

94. _____. et al. 1986. "Fetal Growth and Moderate Drinking in Early Pregnancy." American Journal of Epidemiology. 123 (2): 270-78.

95. _____. et al. 1985. "An Evaluation of the Pregnancy and Health Program." Alcohol Health and Research World. 10 (1): 44-53, 75.

96. MacGregor, S.N., et al. 1987. "Cocaine Use During Pregnancy: Adverse Perinatal Outcome." American Journal of Obstetrics and Gynecology. 157: 686-90.

97. Marbury, M.C., et al. 1983. "The Association of Alcohol Consumption With Outcome of Pregnancy." American Journal of Public Health. 73: 1165-68.

98. Martin, D.C., et al. 1979. "Sucking Frequency and Amplitude in Newborns as a Function of Maternal Drinking and Smoking." In Currents in Alcoholism. Galanter, M. (ed.) 5: 359-66.

99. Martin, T.A., and M.B. Bracken. 1986. "Association of Low Birth Weight with Passive Smoke Exposure in Pregnancy." American Journal of Epidemiology. 124 (4): 633-42.

100. May, P.A. 1986. "Alcohol and Drug Misuse Prevention Programs for American Indians: Needs and Opportunities." Journal of Studies on Alcohol. 47 (3): 187-95.

101. _____. and K.J. Hymbaugh. 1983. "A Pilot Project on Fetal Alcohol Syndrome for American Indians." Alcohol Health and Research World. 7: 3-9.

102. McGowan, J., et al. 1987. "The Effects of Long- and Short-Maternal Caffeine Ingestion on Human Fetal Breathing and Body Movements in Term Gestations." American Journal of Obstetrics and Gynecology. 157 (3): 726-29.

103. Miller, M.W. 1986. "Effects of Alcohol on the Generation and Migration of Cerebral Critical Neurons." Science. 233.

104. Mills, J.L., et al. 1984. "Maternal Alcohol Consumption and Birthweight: How Much Drinking during Pregnancy Is Safe?" Journal of the Amerian Medical Association. 252 (14): 1875-79.

105. Mitchell, M., et al. 1988, "Ultrasonic Growth Parameters in Fetuses of Mothers with Primary Addiction to Cocaine." American Journal of Obstetrics and Gynecology. 159: 1104-9.

106. Morse, B. et al. (In press). "Focusing Prevention of Fetal Alcohol Syndrome on Women." In Prenatal Abuse of Licit and Illicit Drugs. Hutchings, P.E. (ed.) New York Academy of Sciences.

107. Moskowitz, J.H., et al. 1984. "An Experimental Evaluation of a Drug Education Course." Journal of Drug Education. 14.

108. Mueller, D.P., and P.S. Higgins. 1988. Funders' Guide Manual: A Guide to Prevention Programs in Human Service. Amherst H. Wilder Foundation, St. Paul, MN.

109. National Institute on Alcohol Abuse and Alcoholism. 1987. Program Strategies for Preventing Fetal Alcohol Syndrome and Alcohol-Related Birth Defects. Rockville, MD.

110. National Institute on Drug Abuse. 1989. "Highlights From The 1987 National Drug and Alcoholism Treatment Unit Survey (NDATAS)." Division of Epidemiology and Statistical Analysis, and National Institute on Alcohol Abuse and Alcoholism, Division of Biometry and Epidemiology, Rockville, MD.

111. _____. 1987. "Trends in Drug Abuse Related Hospital Emergency Room Episodes and Medical Examiner Cases for Selected Drugs: Dawn 1976-1983." Series H, Number 3.

112. _____. 1985. "National Adolescent School Health Survey: Drug and Alcohol Abuse." Rockville, MD.

113. Nelson, L.B., et al. 1987. "Occurrence of Strabismus in Infants Born to Drug-Dependent Women." American Journal of Diseases and Children. 141: 175-78.

114. Nicholas, J.M., et al. 1982. "Phencyclidine: Its Transfer Across the Placenta As Well As Into Breast Milk." American Journal of Obstetrics and Gynecology. 143 (2): 143-46.

115. Nyamathi, A., and C. Lewis. 1989 (unpublished paper). "Coping of Black Women at Risk for AIDS." UCLA AIDS Nursing Network, Los Angeles, CA.

116. Oetting E.R., et al. 1988. "Alcohol and Indian Youth: Social and Psychological Correlates and Prevention." The Journal of Drug Issues. 18 (1): 87-101.

117. Office of Substance Abuse Prevention. 1989. Exemplary Programs, "Helping Communities to Help Themselves." U.S. Department of Health and Human Services, Washington, DC.

118. _____. Project Descriptions, "Helping Communities to Help Themselves."

119. Operation PAR. 1988 and 1989. Program Descriptions, St. Petersburg, FL.

120. Oro, A.S., and S.D. Dixon. 1987. "Perinatal Cocaine and Methamphetamine Exposure: Maternal and Neonatal Correlates." Journal of Pediatrics. 111 (4): 571-8.

121. Ostrea, E.M., and C.J. Chavez. 1979. "Perinatal Problems (Excluding Neonatal Withdrawal) in Maternal Drug Addiction: A Study of 830 Cases." Journal of Pediatrics. 94: 292-5.

122. Pinkert, T.M. (ed.) 1985. Current Research on the Consequences of Maternal Drug Abuse. NIDA Research Monograph 59, U.S. Department of Health and Human Services, Washington, DC.

123. Pinney, J.L. (ed.) 1980. The Health Consequences of Smoking for Women: A Report of the Surgeon General. Office on Smoking and Health, U.S. Department of Health and Human Services, Washington, DC.

124. Polich, J.M., et al. 1984. Strategies for Controlling Adolescent Drug Use. The Rand Corporation, Santa Monica, CA.

125. Rayburn, W., et al. 1982. "Changing Trends in Drug Use During Pregnancy." Journal of Reproductive Medicine. 27 (9): 569-75.

126. Reed, B.G. 1987. "Developing Women-Sensitive Drug Dependence Treatment Services: Why So Difficult?" Journal of Psychoactive Drugs. 19 (2): 151-63.

127. Richman, L., et al. 1986. "Final Report: Study of WIC Program and Participant Characteristics." Report prepared for Food and Nutrition Service, USDA, by Ebon Research System, Washington, DC.

128. Rosett, H.L., and L. Weiner. 1984. Alcohol and the Fetus: A Clinical Perspective. Oxford University Press, New York, NY.

129. Rubin, D.A., et al. 1986. "Effect of Passive Smoking on Birth-Weight." Lancet. 2: 415-47.

130. Rush, D., et al. 1985. The National WIC Evaluation. Report prepared for the Food and Nutrition Service, USDA, Alexandria, VA.

131. Santa Rita Pregnancy Project. 1987. Annual Report From Nov. 26, 1986 to November 25, 1987. Santa Rita, CA.

132. Schaps, E., et al. 1980. "A Review of 127 Drug Abuse Prevention Program Evaluations." Pacific Institute for Research and Evaluation, Lafayette, CA.

133. Schardein, J.L. 1986. Chemically Induced Birth Defects. Marcel Dekker. 773.

134. Scher, M.S., et al. 1988. "The Effects of Prenatal Alcohol and Marijuana Exposure: Disturbances in Neonatal Sleep Cycling and Arousal." Pediatric Research. 24 (1): 101-5.

135. Schneider, J.W., and I.J. Chasnoff. 1987. "Cocaine Abuse During Pregnancy: Its Effects on Infant Motor Development - A Clinical Perspective." Topics in Acute Care and Trauma Rehabilitation. 2 (2): 59-69.

136. Select Committee on Children, Youth and Families. 1989. Born Hooked: Confronting the Impact of Perinatal Substance Abuse. Report on hearing held April 27, 1989, Washington, DC.

137. Shiono, P.H., et al. 1986. "Smoking and Drinking During Pregnancy." Journal of the American Medical Association. 255 (1): 82-84.

138. Sokol, R.J., et al. 1982. "Identifying the Alcohol-Abusing Obstetric/Gynecologic Patient: A Practical Approach." Preventing Fetal Alcohol Effects: A Practical Guide For Ob/Gyn Physicians and Nurses. NIAAA pamphlet, Dept. HHS.

139. Streissguth, A.P., et al. 1987 "Aspirin and Acetaminophen Use by Pregnant Women and Subsequent Child IQ and Attention." Teratology. 35: 211-19.

140. _____. et al. 1985. "Natural History of the Fetal Alcohol Syndrome: A 10-Year Follow-Up of Eleven Patients." Lancet. 2: 85-92.

141. _____. et al. 1983. "Comparison of Drinking and Smoking Patterns During Pregnancy Over a Six-Year Interval." American Journal of Obstetrics and Gynecology. 145: 716-23.

142. Suffet, F., et al. 1981. "Pregnant Addicts In A Comprehensive Care Program: Results of a Follow-up Survey." American Journal of Orthopsychiatry. 51 (2): 297-306.

143. The Surgeon General. 1985. A Report "The Health Consequences of Smoking: Cancer and Chronic Lung Disease in the Workplace." Rockville, MD.

144. Taylor, M.E. 1986. "Women and Alcohol Research: A Review of Current Literature." Journal of Drug Issues. 16 (4): 621-36.

145. Tobler, N.C. 1986. "Meta-Analysis of 143 Adolescent Drug Prevention Programs: Quantitative Outcome Results of Program Participants Compared to a Control or Comparison Group." The Journal of Drug Issues. 16 (4): 537-67.

146. Thompson T., and C. Simmons-Cooper. 1988. "Chemical Dependency Treatment and Black Adolescents." Journal of Drug Issues. 18 (1): 21-31.

147. Tuckmann-Duplessis, H. 1983. "The Teratogenic Risk." American Journal of Industrial Medicine. 4: 245-58, 1983.

148. United States General Accounting Office. 1987. "Drug Abuse Prevention: Further Efforts Needed to Identify Programs That Work." Report to the Select Committee on Narcotics Abuse and Control. U.S. House of Representatives, Washington, DC.

149. Ward, S.L., et al. 1986. "Abnormal Sleeping Ventilatory Pattern in Infants of Substance-Abusing Mothers." American Journal of Disabled Child. 140 (10): 1015-20.

150. Watkins, T. 1985. "Fetal Cocaine Syndrome Appears a Possibility." Medical Tribune.

151. Watts, T.D., and R.G. Lewis. 1988. "Alcoholism and Native American Youth: An Overview." The Journal of Drug Issues. 18 (1): 69-86.

152. Weatherly, R.A., et al. 1986. "Comprehensive Programs for Pregnant Teenagers and Teenage Parents: How Successful Have They Been?" Family Planning Perspectives. (2).

153. Weiner, L., et al. 1985. "Training Professionals to Identify and Treat Pregnant Women Who Drink Heavily." Alcohol Health and Research World. 32-36.

154. Welch, M.J., and G.A. Correa. 1980. "PCP Intoxication in Young Children and Infants." Clinical Pediatrics. 19 (8): 510-14.

155. Werler, M.M., et al. 1985 "Smoking and Pregnancy." Teratology, 32: 473-81.

156. Winick, C. 1985. "Specific Targeting of Prevention Programs in Alcohol and Drug Dependence." International Journal of the Addictions. 20 (4): 527-33.

157. Women's Alcohol Center. Description of the CHIP program in San Francisco. (OSAP funded project).

158. Woods, J.R., et al. 1987. "Effect of Cocaine on Uterine Blood Flow and Fetal Oxygenation." Journal of the American Medical Association. 257: 957-61.

159. Zacharias, J. 1983. "A Rational Approach to Drug Use in Pregnancy." Journal of Obstetric, Gynecologic and Neonatal Nursing. 12 (3): 183-87.

160. Zuckerman, B.S., et al. 1988. "Cocaine Use During Pregnancy: Prevalence and Correlates." Pediatrics. 82 (6): 888-95.