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ABSTRACT

This final report discusses the outcomes of the federally funded Infant Care Project (ICP) that provided comprehensive and continuous services to 99 women who had used cocaine during pregnancy and their infants. The ICP model combined high risk obstetric care, infant and child development services, and substance abuse services on site in the health care setting. The objectives and activities of the ICP addressed: (1) prenatal identification and intervention in substance abuse, fetal development, mother-child relationship, and family support; (2) newborn assessment and intervention in substance abuse, infant development, mother-child relationship, and family support; (3) follow-up assessment and intervention in the same areas; (4) intervention/training with community agencies that provide care for substance abusing families and their infants; (5) the coordination of an interagency group for families with substance abuse disorders; and (6) a 2-year replication of the ICP in a community health department. Evaluation data indicate that participation in the project was associated with improved compliance with prenatal care, reduced drug use during pregnancy, improved obstetric outcomes, and an increased likelihood of the mother retaining custody at 12 months postpartum. Child developmental outcomes at 12 months were similar for those recruited prenatally and the controls who had no drug use. (CR)

I. The Infant Care Project: A Mother-Child Intervention Model Directed at Cocaine Use During Pregnancy

Final Report

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II. ABSTRACT

The Infant Care Project (ICP) was designed to provide comprehensive and continuous services to women using cocaine during pregnancy and their infants. The project, based out of Duke University Medical Center (DUMC), was conducted in the most likely naturally-occurring context for identifying pregnant women with substance abuse disorders, that is, primary health care. The ICP model is one of blended services that combines high risk obstetric care, infant and child development services, and substance abuse services on site in the health care setting. The primary goal of the project was to demonstrate and replicate an innovative model for serving pregnant women with substance abuse disorders toward improved child behavioral and developmental outcomes.

The objectives and activities of the ICP addressed: 1) prenatal identification and intervention in substance abuse, fetal development, mother-child relationship, and family support; 2) newborn assessment and intervention in substance abuse, infant development, mother-child relationship, and family support; 3) follow-up assessment and intervention in the same areas; 4) intervention/training with community agencies that provide care for substance-abusing families and their infants; 5) the coordination of an interagency group for families with substance abuse disorders; 6) a 2-year replication of the Infant Care Project in a community health department.

The ICP has successfully developed and evaluated a state-of-the-art program for North Carolina and national dissemination: substance abuse treatment services for pregnant women integrated with early intervention programming for high risk fetus, infant, and their families. The project required the forging of new relationships and administrative structures among providers of high risk obstetric care, early childhood intervention services, and substance abuse services such that seamless interdisciplinary care for mother, child, and family is provided through a single point of entry. The major structural features of the Infant Care Project include interdisciplinary treatment for mother, child, and their relationship; continuity through prenatal and postnatal periods; and an integrative and educational focus on community health, education, and developmental service providers.

The demonstration project was evaluated by comparing participation and outcomes for families recruited into the care model during pregnancy, families recruited upon delivery, and socioeconomically similar families with no known drug use. Evaluation data indicated that participation was associated with improved compliance with prenatal care, reduced drug use in pregnancy, improved obstetric outcomes, and an increased likelihood of the mother retaining custody at 12 months postpartum. Child developmental outcomes at 12 months of age were similar for those recruited prenatally and the no drug use controls; the children recruited with their mothers at delivery (that is, no prenatal intervention) were more likely to manifest developmental delays. By the end of the child's second year, the best single predictor of developmental outcome was a measure of the home environment.

The project was successfully replicated in a rural health and mental health department, and both sites continued the essentials of the program after external funding ended. The Duke site, in particular, has been able, through collaboration with the Durham Mental Health Center and the state perinatal (Substance Abuse Services) programs, to establish a model mother-child treatment program with outpatient and residential components. The new program, The Family Care Program, is modeled on the Infant Care Project and systematic refinements to the model made during this demonstration.

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IV. GOAL, OBJECTIVES, ACTIVITIES OF THE INFANT CARE PROJECT

The primary goal of the project is to reduce the problems associated with prenatal drug use by focusing on the fetus and child's development and the parent and child relationship as well as on gender and culture specific substance abuse treatment.

Objective 1. To provide prenatal identification and intervention in substance abuse treatment, fetal development and needs, mother-child relationship, and family support. Progress in these activities are described below.

Identification. Pregnant women were recruited in the Obstetric (OB) clinic at Duke University Medical Center, the high risk OB setting in Durham, NC. Women identified prenatally by interview or toxicology at the community health center, Lincoln Community Health Center (LCHC), as using illicit drugs are referred to the Duke High Risk Clinic. Through the ICP and OB collaboration, OB patients that use drugs were scheduled for Monday clinic at the Duke High Risk Clinic. Beginning in 11/91, ICP staff have actively participated, providing substance abuse assessment, in Monday OB clinic. Through this interface, appropriate women were recruited into the ICP. The involvement of ICP staff in clinic sensitized physicians and nurses to the needs of patients with substance abuse problems. For the first time, OB staff began to view substance abuse screening and services as an integral part of obstetric care. The first woman recruited prenatally into the Duke ICP was recruited on 11/07/91. The last woman recruited into the Duke ICP was recruited on 03/28/94. 115 pregnant women signed consent forms to participate in the ICP during this time period. Of these 115 prenatal recruits, 99 actually participated in some aspect of the project.

Assessment. During the prenatal period, assessment is focused on maternal interviews encompassing substance abuse, medical history and current medical records, psychological/psychiatric functioning, social support systems, and psycho-social resources. Interview forms are appended to this report. Prenatal assessments were completed on 99 ICP participants. Fetal assessments were accomplished using the Teaching Ultrasound (see below for description of the Teaching Ultrasound).

Intervention during the prenatal period involved a "pre-decision" support group on Monday at Duke and the Teaching Ultrasound.

Support Group. A Monday support group, designed to coincide with the High Risk Obstetrics Clinic at Duke, was initiated in 1992. This support group also called the 'predecision group', is an open, non-judgmental support setting for pre- and postnatal participants led by the ICP substance abuse counselor, the substance abuse case manager from Durham County Substance Abuse Services, and a child developmental specialist. Fifty women participated prenatally in this group for an average of 6 sessions in the course of the project.

Before additional funding was obtained to provide lunches and other incentives ($6,800 from State Office of Prevention; $10,000 NC Healthy Start Foundation), participation was quite limited (0-5 participants per week). After the institution of incentives, group participation swelled to approximately 20 women each week. These incentive appear to be the key to participation at this early "pre-decision" level, especially prenatally.

During year 3 of the ICP, the prenatal substance abuse intervention approach saw significant expansion and increased funding. The 4-fold growth of the prenatal support group in the second year of the program facilitated greater interagency involvement between the ICP and community service providers. Greater ties and more efficient referral mechanisms were established between the ICP and Durham County Substance Abuse Services as well as various inpatient substance abuse treatment facilities. Through the efforts of the program, 4 beds on the Duke substance abuse inpatient ward were established for pregnant women on Medicaid. This accomplishment was revolutionary in terms of both the establishment of beds for women on Medicaid and the establishment of care for high risk pregnant women on a psychiatry service at Duke University Medical Center.

The Teaching Ultrasound (TU) is a novel therapeutic technique developed by Dr. O'Donnell and associates that takes advantage of the Ultrasound procedure as a psycho-educational tool. Although ultrasonography is a common part of obstetric care, it is typically medically-focused, involving only the passive participation of the patient. In TU, ultrasonography is expressly for the emotional and educational benefit of the mother. The encounter is used to provide observations and education about fetal neurobehavior and its meaning, including autonomic responses, state development, motor development, and attention to and self-regulation when confronted with stimuli. The TU also is used to describe the effects of maternal cocaine use on placental functioning and possible effects for the fetus. In the context of prenatal substance abuse, there is a direct and positive psychological connection between the mother's awareness of the fetus and her emotional dissonance concerning her ingestion of teratogenic substances. TU chips away at a mother's denial of her pregnancy and the effects of her actions on the fetus while simultaneously encouraging an early relationship and maternal attachment to her unborn child.

Unfortunately, in practice it was difficult to arrange the TU sessions during the proposed time periods. The barriers to implementation included the unreliability to keeping appointments of individuals with substance abuse disorders and the inflexibility of scheduling for the ultrasound equipment and technicians. Twenty eight percent of all women recruited during pregnancy received at least one session of TU. The limited implementation of TU constrains the evaluation of its specific effects, although the model continues to be a part of the current Family Care Program. In addition, the TU procedures are used for fetal neurobehavioral observation in an NIDA funded project investigating the association between prenatal cocaine exposure and SIDS (J. Gingras, P.I.).

Objective 2. To provide newborn assessment and intervention for the family in substance abuse treatment, fetal development and needs, mother-child relationship, and family support.

Recruitment at delivery of the first comparison group. In addition to the women recruited during pregnancy, another cohort of women that used cocaine during pregnancy were recruited at the birth of their child. Women in this group were not identified for cocaine-use until their delivery at Duke, despite the fact that many obtained some prenatal care. Identification most frequently occurred through a positive toxicology screen for mother and/or child. This group of women and their infants provided a comparison group for the evaluation of the prenatal intervention.

Assessment. Women recruited into the study at the birth of their child were administered the same substance abuse and family functioning interview as the prenatally recruited women. Full review of medical records was also conducted for the birth group. Repeated measures of

psychological/psychiatric functioning, substance abuse, and psychosocial resources were administered to prenatal recruits at the time of their child's birth. In addition, Dubowitz exams and a neuromotor screening, INFANIB, were conducted by trained examiners. Growth charts were completed for all newborns. All mothers completed a qualitative, subjective statement describing their newborn. Many of the variables have been analyzed to evaluate the effectiveness of the ICP model.

Intervention. All women were encouraged to participate in the weekly support group (that is, after the support group was established during the second year of the project). 52 women participated in the post-partum support group with an average of 17 sessions attended. Infants joined their mothers in group; for ambulatory children over 12 months of age, ICP established a child group assessment/treatment group. In addition, women were encouraged to bring their older, preschool-aged children during the school year and school-age siblings during holidays and summer for therapeutic activities for the child in the context of the family.

Objective 3. To provide follow-up assessment and intervention for the family in substance abuse treatment, fetal development and needs, mother-child relationship, and family support.

Assessment. Mothers and their 0-24 month old children were scheduled for follow-up evaluation at 6 month intervals (0, 6, 12, 18, & 24). At each follow-up appointment, extensive maternal interviews were conducted as well as direct developmental testing of the child. An observational system (PCIS) was used to evaluate the nature of the mother/child relationship. The follow-up maternal interviews obtained updated information on maternal substance abuse, psychological/psychiatric functioning, social support systems, and psychosocial resources. In addition, mothers responded to structured measures pertaining to the child-rearing environment, maternal beliefs concerning child rearing, and maternal assessment of the child's behavioral characteristics and traits. Direct child assessment involved the administration of a neuromotor screening instrument (INFANIB) for children 12 months or younger and the Bayley Scales of Infant Development (1969 ed.) at all ages.

Intervention. Continued participation in the support and treatment groups was encouraged for all women, as needed, past the child's second birthday and throughout the life of the Infant Care Project (ICP). Several women active in the demonstration Infant Care Project are now participants in the current Family Care Program. The assessment/research arm of the ICP remained interactive with the substance abuse treatment arm of ICP. Although the evaluation and clinical arms of the project were formally distinct (transfer of information only occurred with the express written consent of the parent), mothers frequently used the follow-up assessments as opportunities to re-engage with substance abuse services. Additionally, the assessment arm of ICP was viewed as intervention for the parent regarding the child's developmental achievement, special needs, and experience of the world. The child assessments often served as a liaison with community early intervention services when assistance was recommended and requested by parents. In many cases, the ICP served as the first venue for the expression of developmental concerns by parents. For parents that regularly participated in the support groups and/or treatment groups, this component of the ICP was able to provide extensive child assessment and intervention services. Subsequently, this component has become a state-accredited early intervention program.

Over time, the ICP treatment arm evolved to fit the needs of women at different developmental stages in their addiction. The ICP support group (initiated in year 2) provided a relatively non-

threatening and non-judgmental platform for pregnant women and new mothers to begin to confront their addictions. This group was termed a 'predecision group' in that women were not required to commit to an intensive substance abuse treatment regimen. This non-threatening approach was crucial to the retention of a large group of women who were initially unprepared to confront more directly their addictions. Consequently, a group of previously inaccessible pregnant women, new mothers, and their children became accessible to the ICP. Case management services were a key element of this intervention. As women in the 'predecision group' progressed in their relationship with their addictions, referrals were initiated through the ICP to more aggressive treatment programs and services. Additionally, when women from the predecision group went into crisis and placed themselves, their pregnancies, and their children at risk, ICP staff facilitated emergency liaisons with obstetric staff, inpatient and residential treatment units, and the Department of Social Services.

As the ICP progressed, the need for a more intensive level of treatment for mothers became evident. Many women in the predecision group progressed to the point that they were prepared for a greater commitment to a drug-free lifestyle. For these women, the predecision group was no longer appropriate. Smaller treatment groups were created to accommodate their needs for more intensive and committed substance abuse treatment.

Objective 4. Provide training with community agencies that provide care for substance-abusing families and their infants.

Initially, the training demands were so intensive that a systematic curricular approach was not developed. O'Donnell and Georgi, in particular, provide training throughout the state of North Carolina and nationally on the ICP model of perinatal substance abuse treatment. One major linkage to trainees is through the Area Health Education Centers in North Carolina, one AHEC center at each of the 5 medical schools in the state; the ICP presents at least yearly in the continuing education open to all professionals (with special focus on early interventionists) and parents in the catchment area. In addition, each summer a week-long training in Drug and Alcohol Treatment in Wilmington, N.C. includes ICP staff for training segments in substance abuse treatment for women and in perinatal treatment approaches. For two years, O'Donnell and Georgi consulted directly with the N.C. Drug Cabinet, headed by the Lt. Governor; in that position, ICP organized two large and well publicized state-wide conferences on perinatal substance abuse.

In addition to myriad opportunities for ongoing training to a wide-range of agencies, the ICP--now FCP--is a site for the state's training program for Infant Specialists. Using an immersion model developed by O'Donnell with state (Part H) personnel, early interventionists set up 3-day on site training in small groups. Participants receive didactic and hands on training with the treatment model at Duke and (now) in the community health center. From this training model, the curriculum proposed initially for ICP has been developed.

Objective 5. To establish an interagency coordinating group for addressing the child and family needs of substance-abusing families in North Carolina.

In year 2 of ICP, an interagency group was formed through the leadership of Dr. E. Schmidt at the community health center (Lincoln Community Health Center; LCHC) and collaboration with ICP. The group included not only health, mental health, and early childhood specialists but also Department

of Social Services and the representatives from the criminal justice system. This group met monthly at the health center at 7:30 AM; the primary goal was to explore collaboration, especially around the development of an intensive outpatient and residential program for mothers and their children.

This early collaboration has evolved successfully into a number of directions, including the current advisory board for the Family Care Program at Duke and LCHC. In addition, the linkage among LCHC, ICP, and mental health resulted in the successful application for (1st) a planning grant for a residential program and (2nd) an award to open a residential program that will be unique in the state in that it includes a woman's children of all ages and in that it has specific child assessment, intervention, and case management strategies integrated with the mothers' substance abuse treatment. The Family Care Program will provide mother and child treatment for the residential program. The interagency effort established for the planning grant will continue as a city-wide steering committee for perinatal substance abuse efforts in Durham. The ICP demonstration has had a profound influence on these interagency efforts; without the ICP model, the full integration of child services and needs would not be addressed.

Objective 6. To replicate the Infant Care Project in the community health department.

The essential components of the Infant Care Project were replicated and evaluated in a rural setting, Franklin County. The replication involved the collaboration of the Health Department and Mental Health/Substance Abuse at an administrative level, for the inclusion of substance abuse screening in prenatal clinics, and in the "pre-decision" support group held there weekly. Preliminary data on the Franklin County sample are included in the evaluation findings. Several components of ICP continue there, despite the loss of DOE funding; in addition, there is a persistent effort there to re-create the full program by applications for funding from other sources. The most dramatic loss, however, was the coordination across agencies, funded by the demonstration, and seen as essential to smooth collaboration between these agencies.

V. CONCEPTUAL FRAMEWORK FOR THE INFANT CARE MODEL

The impetus for the development of the ICP model arose from a demographic shift toward increased cocaine use by pregnant women in the 1980's. By the late 1980's numerous stories were appearing in the media about "crack babies". Although mixed, the professional literature was compiling evidence of structural and neurobehavioral abnormalities associated with prenatal cocaine exposure. It was noted relatively early on that substance abuse during pregnancy frequently occurred in the context of other developmental risk factors such as poverty and poor prenatal care utilization. Intervention targets, therefore, necessarily included both drug use during pregnancy and the numerous associated risks for child behavior and development.

The conceptual model for the ICP was based on several assumptions about substance abuse and about the risk to exposed offspring. The following represents these assumptions, articulated in the original proposal.

a. Drug, particularly cocaine and crack, exposure is a teratogen for the developing fetus. In utero exposed infants are considered to be at high risk for developmental disabilities; and cocaine's neurodevelopmental teratogenesis appears to be both structural and neurobehavioral.

b. The drug of choice among women of child bearing age who use illicit substances is cocaine. Cocaine and crack are used three times more frequently than alcohol or marijuana among pregnant women, although in many cases a combination of drugs is used. The primary focus of the ICP is cocaine.

c. Substance abusing pregnant women often suffer from a "double jeopardy" or the convergence of several socioeconomic and ecological risk factors with the drug use.

d. The 2-year pilot project at DUMC as well as contemporary models about child development suggest strongly that the birth of a child and the mother's concerns about the child provide a major opportunity and motivation for change for mothers. Optimal treatment for mother and child likely, then, would be within the family context or in the mother-child relationship.

e. The most likely naturally-occurring contact for pregnant women is the health care system--in prenatal care and/or at delivery. An effective intervention should focus on these most likely encounters.

Subsequent to it's implementation, the theoretical assumptions of the ICP model also include the following:

f. The mother's substance abuse treatment is a cornerstone of optimal child developmental and behavioral outcomes and requires the full integration of drug and alcohol treatment with early intervention.

g. Family preservation is an important goal for mothers with substance abuse disorders and forms an important platform for intervention strategies.

h. There is wide variability in child outcomes with prenatal and postnatal family drug use. In the context of achieving developmental milestones, however, there also can be significant risk from an unstructured, inconsistently responsive, and chaotic caregiving environment. The earliest intervention with children should address the order and dependability they need: in group treatment and in mother-child activities.

i. Linkage and support for primary and preventive health care is critical to child well being and to the mother's acceptance of the parental role.

VI. DESCRIPTION OF THE MODEL AND PARTICIPANTS

The ICP model emphasizes the mobilization and restructuring of existing, but fragmented, community services into a package of coordinated services that are more responsive to the needs of pregnant and post-partum women with substance abuse disorders and their children. Consistent with the ecological focus of the ICP, the service package encompasses health care, substance abuse services, child development services, vocational rehabilitation, and other parent and family focused social programs. The core of the ICP model is interdisciplinary, interdepartmental, and interagency coordination and collaboration. The ICP model creates a single point of access for pregnant women

with substance abuse problems to obtain essential, but traditionally separate, services. The ICP team goes beyond simply housing complementary services in a single geographic location. It facilitates a synergy of ideas and intervention approaches through the cross-fertilization of traditionally separate disciplines, departments, agencies, and personnel. The result is a model that, now demonstrated, evaluated, and replicated, has become the state model for appropriate services for women with substance abuse disorders and their high risk children.

The starting point for any program of intervention for prenatal substance abuse is the early identification of pregnant women who are using illicit substances. This consideration led the ICP to use the health care system, obstetrics in particular, as the contact point for the intervention effort. Obstetric care is typically the first point of contact in the health service system where a substance abuse problem within a pregnancy will be identified. Research demonstrates that women with substance abuse problems are particularly at risk for failing to obtain adequate prenatal care. Therefore, the obstetric context provides not only an early opportunity for identification, but also a context for early intervention efforts to improve prenatal care utilization. Clinical experience suggested that the birth of a child and concern about the child provided a major opportunity and motivation for mothers to change. The ICP taps this natural concern as an opportunity to engage mothers in productive and proactive services targeted toward not only their children but also toward themselves.

During the prenatal period, the ICP attempts to diminish and/or prevent illicit substance use through substance abuse treatment services, improve compliance with prenatal care, provide parent training and education, and facilitate linkages with vocational rehabilitation and other social services programs. Following delivery, the program maintains the focus on continued reduction of drug use or maintenance of abstinence through substance abuse services with an intensified focus on child development and parenting skills. Assistance in accessing both adult and child services in the community is facilitated through case management services.

Two initial comparison groups: Early versus later intervention. 115 (99 actually participated) women were recruited prenatally in to the ICP. 59 women were recruited into ICP at delivery. Descriptive information for the ICP participants appears in Table 1, for the total group and as they varied by group in ways that could affect outcomes (potential confounding variables). Across all participants (prenatal and at delivery recruits) the vast majority were African American, unmarried, unemployed, and received AFDC. Over 50% of participants had completed high school. The means age for participants was 27.3 (SD 5.0).

The no-drug use comparison group. During the course of the ICP demonstration, it was decided that a no-drug use comparison group would be helpful, especially in terms of understanding child outcomes. A group matched for parity and socio-economic status (Medicaid eligibility) was recruited at the child's 12 month well baby visit. The group provides a useful comparison for 12 and 24 month demographic and developmental data, but it is important to note that this group was not recruited at birth and their participation was somewhat limited.

Table 1. Description of demonstration participants: Mothers recruited into ICP

	% Prenatal n = 99	% At Birth n = 59	% Controls n = 37
Race			
African American	90.63	88.37	81.25
White	9.38	9.30	18.75
Other	0	2.33	0
Marital Status			
Single	81.91	86.05	56.25
Married	9.57	9.30	37.50
Other	8.51	4.65	6.25
Gravida			
One	10.42	2.38	25.00
2-3	40.63	38.10	62.50
>3	48.95	59.52	12.50
Head of Household			
Mother	48.65	54.90	*
Father	8.11	5.88	*
Other	43.24	39.12	*
Mother's Ed.			
< High School	40.28	44.00	36.38
High School	40.28	36.00	36.36
> High School	19.45	18.00	27.28
Income			
< 5,000	55.56	49.02	*
5 - 10,000	36.11	49.02	*
> 10,000	8.33	1.96	*
Work			
No	91.67	100.00	*
Yes	8.33	0	*
AFDC			
No	26.03	23.53	24.0
Yes	72.60	76.47	76.0
Unknown	0	1.37	*

VII. METHODOLOGICAL OR LOGISTICAL PROBLEMS IN IMPLEMENTATION, THEIR RESOLUTION, AND OTHER CHANGES FROM THE ORIGINAL PROPOSAL

A. Increased involvement of substance abuse treatment

As proposed initially, the primary focus of ICP was early intervention toward the mother, the child, and their relationship in the context of the mother's substance abuse disorder. Substance abuse treatment *per se* was seen as a referral task of the program. In its implementation, it became immediately apparent that substance abuse was not a "referral" thing, but rather needed to be fully integrated into the intervention model. This has been one of the most difficult and most rewarding shifts in ICP definition, resulting in a unique innovation: a fully integrated substance abuse treatment and early intervention program.

The steps toward this goal involved 1) the development of a once/weekly pre-decision support group for women that included their children and scheduled to coincide with prenatal clinics; 2) the expansion of this group into the community; and 3) the development in year 4 of an intensive outpatient program, 5 days/week, for mothers and children; 4) accreditation as an early intervention program for the intensive program; and 5) collaborative work toward a residential program for women and children together, now funded by the state for Fall, 1997.

B. The *Teaching Ultrasound*

The *Teaching Ultrasound (TU)* is a novel therapeutic technique developed by Dr. O'Donnell and associates in the pilot project prior to ICP funding. The TU takes advantage of the prenatal ultrasound procedure as a psycho-educational tool. Although ultrasonography is a common part of obstetric care, it is typically medically-focused, involving only the passive participation of the patient. In TU, ultrasonography is expressly for the emotional and educational benefit of the mother. In the context of prenatal substance abuse, there is a direct and positive psychological connection between the mother's awareness of the fetus and her emotional dissonance concerning her ingestion of teratogenic substances. TU challenges mother's denial of her pregnancy and the effects of her actions on the fetus while simultaneously encouraging an early relationship and maternal attachment to her unborn child.

Unfortunately, in practice it was difficult to arrange the TU sessions during the correct time periods. The barriers to implementation included the high no-show rate of individuals with substance abuse disorders and the inflexibility of scheduling for the ultrasound equipment and technicians. Regrettably, a minority of the 99 women recruited during pregnancy were able to attend the two scheduled TU sessions. Only 11% received both sessions. 28% received one session of TU. The limitation for evaluation purposes was addressed in the implementation data by categorizing high versus no/low treatment participation: the high participation group included those with 2 TU and/or at least 6 prenatal support groups. Given that the support group was not implemented until year 2, the combined interventions allow some evaluation across years about level of implementation and effects.

Recommendations for future implementation of TU involve increased flexibility of access and scheduling for ultrasonography. Combining the prescribed medical/diagnostic ultrasound with TU is a promising strategy, and there is a high level of interest on the Obstetrics team for developing further the TU technique for high risk pregnancies and other purposes, including its application to neurobehavioral assessment of the fetus.

C. Retention

Retention and treatment compliance is perhaps the greatest challenge facing any substance-abuse oriented treatment program. There are several markers of retention in the ICP; one of the most rigorous is the number of mother-child dyads available for the 24 month follow up assessment. The total percent involved at 24 months (increased from an average of 2 participants to 15-18) indicates that the ICP model struggles also with retention problems associated with relapse, transient living situations, loss of child custody, and other factors associated with poverty and substance abuse disorders. The ICP in its evolution has addressed retention and compliance issues in a number of ways.

Incentives- In the second year, additional funds from another (non-federal) source were awarded to heighten involvement in the pre-decision support group (paired, of course, with prenatal clinic visits). Incentives included money for lunch in the hospital cafeteria and support for travel expenses. The increase in participation was evident in the brief evaluation period, with average group attendance rising from 2 to 18. The nature of incentives has varied with different sources of funding and between Duke and the replication site in Franklin County. In the present FCP at Duke (intensive program) and LCHC (pre-decision support), lunch, donated baby food, diapers, and Wal Mart coupons for attending 4 groups/week are used. As in Franklin County, it is evident that the most significant of these is lunch-- a manifestation of nurturing and community for the group and staff members. In fact, currently the only incentive used in the LCHC pre-decision support group is lunch; and the average attendance has remained high (X=10/week). Incentives represent a significant revision to the program and a non-trivial one for both treatment and retention purposes.

Expansion to the community health center- The pre-decision support group was expanded to the community health center to improve access and utilization. The LCHC support groups are now twice/week scheduled to coincide with their prenatal clinics.

Use of existing community transportation- The ICP staff learned to make use of an existing transportation program for Medicaid eligible participants. In the current FCP, over 90% of participants make use of this service to attend treatment activities.

Field trips- ICP clients taught the staff that an important aspect of their lives was the difficulty of having fun without drugs and alcohol--indeed, knowing how to have fun without substance abuse. By the second year of ICP, a series of field trips for mothers and children was initiated and established as open to all active and previously active participants. These activities are extraordinarily successful, especially in terms of the mother-child relationships.

D. The high cost of services: Reimbursement beyond model demonstration funding. Two specific difficulties have become apparent in the attempts to continue the model beyond demonstration funding.

Medicaid reimbursement does not equal cost of services and their coordination. Over the course of ICP demonstration, the data indicate that an average of 40%-60% of the participating women (and their children) are Medicaid eligible. In North Carolina, women are eligible for Medicaid during pregnancy and for 1 year postpartum. For those who are eligible, many allow lapses to occur; to address this, the ICP increased case management efforts. For those who are not eligible, a vast majority are in poverty and cannot even contribute to the program on a standard "sliding scale". Estimates are that Medicaid

reimbursement covers approximately 25% of program costs only. To sustain the model in Durham and in the replication site, additional funds are absolutely necessary. Additional funds have been awarded from the state's perinatal programs (for which ICP served as a model) to Durham; however, Franklin County is still applying for external support to maintain their replication ICP.

Substance abuse funding sources do not include child services. In North Carolina as in many states, streams of state funds for services are separate for adults (mental health/substance abuse services) and children (early intervention, high risk intervention). Therefore, when state funds were awarded to sustain the original ICP, now Family Care Program (FCP), it was an unhappy discovery to find that these funds could not be used to support any child services. This dichotomy is in contrast to the spirit of integrated mother-child programs, now the state's model; and there is a collaborative effort between the relevant state agencies (Substance Abuse Services; Child and Family Services, Maternal and Child Health) and the Duke FCP to affect that policy. Nonetheless, even with state funds, the current model is not reimbursable. The resolution has involved a successful objective of creating an accredited early intervention program in FCP, for which services are reimbursable through the Medicaid contract with Durham Mental Health. Of course, this is only a partial solution given the low percent of eligibility for Medicaid and the important services that are not Medicaid eligible. Indeed, the largest barrier to the Franklin County program is the lack of a program coordinator, for whom most activities are not reimbursable albeit essential to the interagency collaboration required by the model.

VIII. EVALUATION FINDINGS

From the rather extensive database developed for ICP evaluation, selected descriptions and outcomes are presented below in brief summary and table format. In addition to the demographic data presented on Table 1 (above), treatment group differences are assessed to understand the potential for confounding and effect modification between those who participated in the intervention and those who did not meet the minimum for participation (Table 2). Reports of reduced use of alcohol and illicit substances for the mothers during pregnancy are described in Table 3. In terms of implementation of the intervention strategies, actual participation in treatment activities is described in Table 4. Selected outcomes are presented in Tables 5 to 9; they address the association between ICP and prenatal care utilization, reduced drug use during pregnancy, obstetric outcomes, the retention of custody, and child growth and developmental scores.

In Table 2, for clarity only prenatal recruits are represented. Treatment indicates participation in the teaching ultrasounds and/or at least 6 pre-decision/support groups. The categories are selected to indicate a group of women who actively participated in the ICP compared to those who consented to recruitment but never really engaged with the program. Differences greater than p= .05 are indicated by **, greater than p= 0.1 by *.

Table 2. Description of prenatal group by low or no treatment or some treatment received in ICP

Variable name	LOW/NO TREATMENT Frequency (Percent)		TREATMENT Frequency (Percent)	
Race				
Black	54/60	(90.0)	38/41	(92.7)
White	6/60	(10.0)	3/41	(7.3)
Marital Status				
Single	49/58	(84.5)	32/41	(78.0)*
Divorced	3/58	(5.2)	6/41	(14.6)
Other	6/58	(10.3)	3/41	(7.3)
STD identified during pregnancy				
Negative	25/58	(43.1)	16/36	(44.4)
Positive	33/58	(56.9)	20/36	(55.6)
Non-HIV viral infection				
Negative	29/56	(51.8)	27/39	(69.2)
Positive	2/56	(3.6)	1/39	(2.6)
Unknown	25/56	(44.6)	11/39	(28.2)
Gravida				
First pregnancy	5/60	(8.3)	5/41	(12.2)
Not first pregnancy	55/60	(91.7)	36/41	(87.8)
Employment				
Worked during preg.	3/41	(7.3)	3/35	(8.6)
No work during preg.	38/41	(92.7)	32/35	(91.4)
Rooms/person in home				
1 room/person	0/14	(0.0)	0/10	(0.0)
< 1 room/person	14/14	(100.0)	10/10	(100.0)
Education				
< 11 years	37/61	(60.7)	20/41	(48.8)
12 years and greater	24/61	(39.3)	21/41	(51.2)
Income				
< $5,000/year	25/41	(61.0)	18/35	(51.4)
$5,000/year and greater	16/41	(39.0)	17/35	(48.6)
Age				
19-34 years	52/61	(85.2)	35/41	(85.4)
<19 or >34 years	9/61	(14.8)	6/41	(14.6)
Level of cocaine use during pregnancy				
At least mod. use	21/34	(61.8)	27/34	(79.4)**
< mod use at least once	13/34	(38.2)	7/34	(20.6)

Variable name	LOW/NO TREATMENT Frequency (Percent)		TREATMENT Frequency (Percent)	
ETOH ever-used during pregnancy				
No use	13/39	(33.3)	5/34	(26.5)
Use	26/39	(66.7)	29/34	(73.5)
Tobacco ever-used during pregnancy				
No use	10/39	(25.6)	6/33	(18.2)
Use	29/39	(74.4)	27/33	(81.8)
Opiate ever-used during pregnancy				
No use	36/44	(81.8)	33/35	(94.5)*
Use	8/44	(18.2)	2/35	(5.7)
Marijuana ever-used during pregnancy				
No use	25/38	(65.8)	21/32	(65.6)
Use	13/38	(34.2)	11/32	(34.4)

From Table 2, it is evident that those women who participated in the project were less likely to be single, although still a vast majority (78%) were single. In general, level of reported drug use in pregnancy was greater for participants, especially apparent for cocaine and a trend toward more opiate use. This latter finding is contrary to the assumption that "healthier" women participate in treatment; in fact, these data suggest that the woman who knows she has a significant substance abuse disorder may be more likely to engage in treatment. Table 3 (below) indicates the reported reduction in drug (cocaine) use during pregnancy for prenatal ICP participants.

Table 3. Reported decrease in drug (cocaine) use during pregnancy

Variable name	LOW/NO TREATMENT Frequency (Percent)		TREATMENT Frequency (Percent)	
1st vs. 2nd and 3rd trimester cocaine use				
Stayed same or inc.	23/34	(67.6)	16/34	(47.1)**
Decreased	11/34	(32.4)	18/34	(52.9)

Table 4 demonstrates the differences between the prenatally recruited group and those recruited at delivery in terms of participation in the pre-decision support group. It is obvious, perhaps, that the prenatal participant had a greater opportunity for involvement; however, these data support the notion that effective involvement with women with substance abuse disorders should be directed at pregnancy.

Table 4. Support Group recruitment/attendance by group

	Prenatal Group Mean (SD) # sessions	Birth Group Mean (SD) # sessions
Prenatal Sessions Attended	5.81 (5.58)	
Post Partum Sessions Attended	11.15 (12.03)	15.5 (16.16)
Total Sessions Attended	10.76 (14.07)	2.92 (8.89)

Table 5 demonstrates the improved utilization of prenatal care for ICP participants. It can be argued that the woman who consents to prenatal intervention is a different woman and would involve herself in more prenatal care regardless of the ICP intervention. The interpretation of these data are limited by the small amount of information available from the "control" group (no know drug use, recruited at child age 12 months).

Table 5. Prenatal care utilization by recruitment group

	Prenatal Group	Birth Group	Control Group
**Prenatal Care Utilization by Group			
Adequate Prenatal Care	27**	1	5*
Inadequate Prenatal Care	30	20	2

* indicates significant group differences at .05 level
** indicates group differences at .001 level

The following tables reflect outcomes related directly or indirectly to ICP. For example, ICP participants were more likely to engage in adequate prenatal care; and prenatal care utilization was associated with improved birth outcomes (see Table 6). In addition, involvement in ICP treatment was associated with a significant decrease in small for gestational age delivery (Table 7). The data in Table 7 on preterm delivery may be affected by the close Obstetrics follow-up for women with more ICP involvement; that is, in a number of cases, an early delivery was planned because of relapse and fear of abruption.

Table 6. Prenatal care utilization/intervention by birth outcomes

	Adequate PNC	Inadequate PNC
Prenatal Care Utilization and Weight %ile		
< 10th %ile	2	12*
>10th %ile	31	40

	Adequate PNC	Inadequate PNC
Prenatal Care Utilization and Birth Weight		
<2500 grams (low Birth Weight)	7	10
>2500 GRAMS	26	39
Prenatal Care Utilization and Gestational Age		
< 37 Weeks gestation	8	10
>37 Weeks gestation	25	39
Prenatal Support Group and Weight %ile		
< 10th %ile	5	9*
> 10th %ile	35	16
Prenatal Support Group Participation		
Prenatal Support Group	28	19*
No Prenatal Support Group	13	26

*indicates significant group differences at .05 level

Table 7. Prenatal care and birth outcomes by treatment involvement

	LOW/NO TREATMENT		TREATMENT	
Variable name	Frequency (Percent)		Frequency (Percent)	
Adequate vs. inadequate PNC				
Adequate	24/56	(42.9)	25/39	(64.1)
Inadequate	32/56	(57.1)	14/39	(35.9)
SGA				
Yes	18/50	(36.0)	7/39	(17.9)*
No	32/50	(64.0)	32/39	(82.1)
Preterm delivery				
> 36 weeks	34/61	(55.7)	32/41	(78.0)
< 37 weeks	27/61	(44.3)	9/41	(22.0)

*p< .05

Child growth and developmental outcomes are represented in Tables 8 and 9. Both drug exposed groups were significantly smaller at birth than the "control" group. Developmental milestone achievement was measured using the Bayley Scales of Infant Development (1969 edition). At 12 months, the group recruited prenatally was similar to the no know drug exposure "controls" and significantly higher than the group recruited at birth, underlining the other results that stress the importance of prenatal identification and intervention. By 24 months of age, the best predictor of the Mental Development Score for all groups was a measure of the home environment, suggesting that although there seems to be an effect for both drug exposure and for early intervention during pregnancy, the effects of the caregiving environment are overwhelming by the second year.

The early identification of ICP participants was associated also with family preservation. Of the women recruited prenatally, 80% retained custody at the child's first birthday, whereas, only 50% of those recruited at delivery retained child custody at 12 months.

Table 8. Child Growth, means, and standard deviations by group

	% Prenatal n= 99	% At Birth n= 59	% Control n= 37
* Gestational Age at Birth	37.4 (2.55)	38.06 (2.36)	39.88 (1.13)
**Birthweight	2757.49 (588.99)	2855.04 (421.91)	3475.00 (431.84)
* Head Circum. at Birth	32.76 (2.02)	33.34 (1.42)	34.42 (1.54)

* p< .05 level
** p< .001 level

Table 9. Child developmental status at 12 and 24 months (standard scores: test mean = 100; SD= 16)

	Prenatal n = 99	At Birth n = 59	Control n= 37
MDI 12	114.68 (11.16)	98.73 (18.56)**	110.58 (7.65)
MDI 24	98.82 (11.22)	99.00 (15.85)	106.00 (6.69)
PDI12	102.73 (9.4)	91.55 (20.07)*	102.10 (13.07)
PDI24	108.09 (15.33)	99.14 (12.73)	100.17 (13.04)

* p< .05 level
** p< .001 level

The replication of the program in Franklin County was evaluated in a similar fashion as the Durham program, with the addition of subjective assessments for staff participants. Thirty-seven women were recruited into the project in Franklin County during the 18 month service delivery (which continues). The sample was essentially similar to the Duke sample, with the exception of a higher percent of Caucasian women (20%). Franklin County also had a much higher success than Durham with women obtaining and maintaining jobs. The extensive chart reviews necessary for a full evaluation of the replication, including birth outcomes, is continuing and should be available by Fall, 1997. The evaluation of the program by professional participants is summarized in Figure 1 below. Although, many essentials of the program continue after funding, it is evident that the missing essential role of coordinator (primarily between the health department and mental health) has taken a toll on the overall effectiveness of ICP there. This group in Franklin County is very active currently in writing grant applications to re-create fully the ICP in their setting.

Figure 1. Franklin County replication: Evaluation results

Franklin County evaluation participants completed questionnaires designed to elicit their opinions regarding the essential components of the ICP replication as well as comments about the program. The results are summarized below.

1. The first section asked program staff to evaluate and rank order the importance of specific program components. Scores were averaged in the following table.

Evaluate and rank program components in order of importance to women and children

1 = absolutely essential
2 = very important
3 = important but not essential
4 = not important

1.0 Prenatal screening, interviewing, identification
1.3 Blended one-stop approach to care
1.6 Assessment of maternal substance abuse/mental health needs
1.1 Prenatal support group
1.1 Postnatal support group
1.6 Child care component of support group
2.0 Coordination with Child Services Coordination (CSC) follow up
2.0 Community liaison and case management
1.3 Other Coordination of program as a whole (4 participants identified this item)
2.0 Other Staff education on drug abuse (1 participant identified this item)
3.0 Other Natural support of family and community (1 participant identified this item)

There was clear consensus among the evaluation participants that prenatal screening, interviewing, and identification were absolutely essential followed by the pre- and postnatal support groups. A blended one-stop approach to care tied with coordination of program as a whole. It is interesting to note that 4 evaluation participants independently identified coordination of the program as whole as being a very important component. Assessment of maternal substance abuse/mental health needs and the child care component of group are followed by coordination with CSC and case management in order of importance. Under the "other" category, one participant identified staff education on drug abuse as being very important. During a recent meeting with the ICP replication staff, concern was voiced over health and mental health department staff insensitivity to substance using pregnant women. Finally, one participant identified natural supports of family and community as being important but not essential.

The next section used open ended questions to gather information on feedback from clients/staff, barriers to implementation, essential components to be included in the next perinatal grant, and other general comments. Answers to these questions are a combination of direct quotes and summary.

What did you lose when federal funding ended?

The overall consensus of the evaluation participants was that coordination of services was the primary component lost when the federal funding ended. "The money to fund a position that worked exclusively with ICP [*was lost. We*] had to create staff positions but they could not be dedicated just to ICP." Having a staff person solely dedicated to coordinating the ICP was important, and is no longer available. Another evaluator commented "ICP was very helpful for pregnant participants, but few continue to come. The majority of the participants presently coming have been with the group since it started. New participants don't continue to come."

Specific feedback from participants.

Positive- ICP participants were overwhelmingly positive about their experience with the program. "Most participants expressed great satisfaction with the program. The group developed a bond that continued after pregnancy. Participants were willing to have fund raisers to continue the program when funds were cut". Another theme that emerged was how the group helped women attain goals. "Most clients' lives have been changed--got their GED's/job. . . some have more than 2 years drug free".

Negative- Some negative feedback that staff received regarding the program included the need for "more education in a variety of subjects". There were also interpersonal difficulties among group members surrounding the sharing of food as well as "one or two participants talked predominantly during the class sometimes". "Problems with transportation" were also a noted challenge for some participants.

Specific feedback from other health/mental health staff.

The feedback from other health/mental health staff was varied. Some was focused on the positive effects the ICP had on clients. Staff noticed "the difference that the program made for their hard clients". For example there was an "increase in OB health checks for clients". Other staff felt the "program was instrumental in educating substance abusing women on the dangers of drug abuse and effects on their children. It also provided them an opportunity to bond with others who were facing the same problem and to be able to openly admit they had a problem and not be ridiculed for it".

Finally, one evaluator stressed the need for "increased liaison between agencies regarding the patient's care/needs". She felt that "100% support was needed: money, staff, and commitment to goals. Lip service ain't enough!".

Major barrier(s) to implementation.

The primary barrier identified with great energy was lack of "communication among the big people--Health Department/Mental Health". Another individual mentioned the difficulty in "getting the administrative staff from the two agencies together". This, coupled with the loss of the coordinator when federal funds ended, resulted in a core group of people eager to serve substance abusing pregnant women but without much administrative support. The overall tone of the Franklin County ICP replication team in reference to the current status of the program was one of frustration but perseverance. They are presently writing a grant for submission to the Kate B. Reynolds foundation in order to refund lost positions.

When you write your perinatal funding grant, what will be the essential components?

All participants who answered this question identified a program coordinator as the most important component. "Having a program coordinator is essential. It is important that someone closely follow the participants and encourage their continued participation. Constant contact with participants either through letter, phone, or home visits assures greater continuity of care".

Other comments.

Most participants left this area blank but one comment, in particular, is worth noting. "To Karen/Jeff and the rest of the Duke staff who have given us the support and funds for ICP: It works. It changes the lives of hurting people".

In summary, ICP was well received in the Franklin County Health Department. The prenatal screening and support groups were a very important part of the ICP. The lack of a coordinator has made it difficult to provide the same level of care as when funded. This position was identified as key to the success of the program. ICP continues to exist in a lesser form following the end of federal funds and staff find this frustrating but they are actively pursuing alternative funding mechanisms.

IX. PROJECT IMPACT

"This program has helped me realize that I can be a good parent and take care of myself as well as my family."

"This program has been a great help to me. It has shown me that all of the fears and insecurities that I felt were normal and I was not the first to feel them. I am more confident as a first time mother now that I can be good to my baby. Thanks! P.S. My baby gives thanks also."

Products. Two products are in development as a result of the model demonstration of the Infant Care Project. First, a video has been made and is now being edited to describe the essential components of a mother-child integrated treatment program as developed by ICP. Participants in the video are actual mothers and children from ICP who have given consent. From another funding source, a filmmaker has already been engaged to edit and produce the ICP videotape for dissemination purposes.

Second, a monograph is being developed to describe in detail the essential components of an integrated program. Funding for publication is being sought from substance abuse services sources federally.

Dissemination activities. To date, intensive dissemination of the model has been accomplished by training, primarily by O'Donnell and Georgi, locally, state-wide, and nationally. One- and two-day curricula have been developed, and the training includes extensive use of videotapes from both mother and child treatment. The ICP, now FCP, is recognized as a model program that attracts visitors from other developing programs nationally.

Publications. To date, the publications from the ICP have been limited to published abstracts from pediatric, substance abuse, and child development professional meetings. Planned journal articles include:

Topic	Journal type
Effects of intervention on prenatal care utilization and improved birth outcomes	Ob/Gyn
Integrating early intervention into a substance abuse treatment program for women	Special education
A model for integrating maternal substance abuse treatment with child services	Substance abuse
The pre-decision support group model	Substance abuse

State funding/programs. The impact of the ICP in Durham and Franklin Counties has been felt at the state level. The ICP, now FCP, is acknowledged as a model program for women and children and one that is being replicated state-wide. The issue of the separate adult and child funding streams as a barrier to integrated programs has been a state-government policy issue to be address by an interagency forum at the state level.

Program development. An important impact of the ICP demonstration is the resulting collaboration with the state's Substance Abuse Services and Durham Mental Health Center in the development of a residential program for women and their children. The now-funded program will be unique in the state in provision of long term care for women that includes her children and has specific intervention for children and for the mother-child relationship built into the program format. The ICP model is the model to be used, requiring further development of the model to be suitable for residential care. This too has become a model for state implementation and funding.

Implications for the field. The ICP model demonstration and its evaluation is instructive to the fields of substance abuse services and early intervention in its innovative **integration of** these heretofore fragmented and underutilized **services for women with substance abuse disorders and their high risk children.** The underlying assumptions of the model are gender specific (the importance of a woman's children to her recovery) and child-oriented (intervention with child and mother is simultaneous). An important specific implication to the field of early intervention is **that "early" may mean "prenatal",** suggesting that the involvement of early intervention personnel in High Risk Obstetrics Clinics may be appropriate, even critical, for optimizing child outcomes. Further, the data on the effects of the caregiving environment by the child's second year strongly indicate that perinatal programs, although they should begin prenatally, **should be extended to early childhood** and address caregiving risk and resiliency as well as the biological risk of the initial exposure to drugs and alcohol.

X. FUTURE ACTIVITIES

The best indicator of future activities for the model demonstration lies in our funding history and plan. The ICP is now funded as the Family Care Program by the state's Perinatal Substance Abuse Programs. This funding is adequate to address the mother's substance abuse and (to some extent) family needs; but, this funding source does not address the postnatal child's specific needs for assessment, intervention, and case management to access community resources. The two pending grant applications listed below address the child specific programming and model development for fully integrated substance abuse and early intervention programs.

ICP/FCP Related Grants Received

Pilot project:

O'Donnell, K. (1989-1992) A demonstration project for women who use cocaine during pregnancy. North Carolina Council for Developmental Disabilities. $150,000.

DOE model demonstration:

O'Donnell, K. (P.I.) (1991-1996). The Infant Care Project. A mother-child intervention model directed at cocaine use during pregnancy. Office of Special Education and Rehabilitative Services, U.S. Department of Education. $554,960.

Subsequent support for the project:

O'Donnell, K. (1992-1993). Treatment and support integrated with prenatal care: Substance abuse in pregnancy. North Carolina Department of Environment, Health, and Natural Resources. $15,000.

Auer, C. (P.I.) and O'Donnell, K. (Faculty, P.I.) (1991-1992). Caregiving antecedents of developmental outcome in cocaine exposed infants. Student initiated research project, Office of Special Education and Rehabilitative Services, U.S. Department of Education. $9,385. *Student initiated grant.*

Baran, J. (P.I.) and O'Donnell, K. (Faculty, P.I.) 1992-1993). The impact of prenatal cocaine exposure on infant attention and developmental outcome. Student initiated research project, Office of Special Education and Rehabilitative Services, U.S. Department of Education. $15,054. *Student initiated grant.*

O'Donnell, KJ (1994-1995). Enhanced Prenatal Support for Substance Abusing Women. North Carolina Healthy Start Foundation. $7,200.

O'Donnell, KJ and Georgi, G (Co-Principal Investigators) (1994-present). The Family Care Program for women with substance abuse disorders and their children. N.C. Perinatal Programs, Substance Abuse Services, subcontract with Durham Mental Health Center, $215,000 annually/funding ongoing.

O'Donnell, KJ and Georgi, G. (Co-Principal Investigators) (1996-present). Expansion of the Family Care Program for women with substance abuse disorders and their children. N.C. Perinatal Programs, Substance Abuse Services, subcontract with Durham Mental Health Center, $140,000 annually/funding ongoing.

O'Donnell, KJ (1997). Competition for additional support for transportation and respite care for Family Care Program clients. $24,000.

O'Donnell, KJ (1997-8). Peer Outreach Support for the Family Care Program. Healthy Start Foundation. $25,000.

Ramsey, J. and O'Donnell, KJ (Co-Principal Investigators) (funding to begin Fall, 1997). The New Leaf Therapeutic Family Residence for Women with Substance Abuse Disorders and their Children. North Carolina Division of Mental Health, Developmental Disabilities, and Substance Abuse Services, $333,000 annually/ongoing.

Applications pending:

O'Donnell, KJ (P.I.) (1997-2001). Child Services Integration Project. U. S. Department of Education. $560,000. (Anticipation notification 7/1/97)

O'Donnell, KJ (P.I.; submitted with the North Carolina Division of Mental Health, Developmental Disabilities, and Substance Abuse Services (1997-2001). Durham Starting Early Starting Smart: The Early Start Program. SAMSA and The Casey Family Foundation. $2,160,000 (Anticipated notification 9/1/97). North Carolina Division of Mental Health, Developmental Disabilities, and Substance Abuse Services

XI. ASSURANCES

The full final report has been sent to ERIC and copies of the title page and abstract/executive summary have been sent to the other addressees on the attached sheet.

XII. COMMENTS

These investigators and the Durham community are deeply grateful to the U.S. Department of Education for the opportunity provided by the funding for this model demonstration. The Infant Care Program and the expansion programs its fostered have dramatically and permanently changed the nature of service delivery to women with substance abuse disorders and their children in Durham, N.C. The growth and expansion continues in both outpatient and residential services; in addition, a recent Early Head Start (birth to 3) application was submitted by Durham's existing Head Start Program (Operation Breakthrough); influence by the presence and assumptions of ICP/FCP in the community, the proposed program is to be located across the street from the community health center (Lincoln Community Health Center) and will include as one of its three components of care The Family Care Program, that is, fully integrated substance abuse treatment and early childhood intervention. In addition, the ICP model has become the accepted model for women's outpatient and residential substance abuse treatment in the state. This assumption of a woman's children involved in her substance abuse treatment and having their own high developmental risk status addressed in that setting is not trivial in its implications for service delivery. Nor is it currently a common assumption for programs around the country.

Respectfully submitted,

Karen J. O'Donnell, Ph.D.
Project Director, The Infant Care Project

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