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RWC/PPW PROGRAM AND CROSS-SITE OVERVIEW

The RWC/PPW National Cross-Site Demonstration Programs

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children.

As demonstration grants, RWC/PPW projects focused on the special needs and circumstances of pregnant and parenting women, for whom few specialized treatment programs then existed. Because CSAT expected these projects to contribute to the body of knowledge about the effectiveness of different substance abuse treatment approaches with different population groups, CSAT required that each grantee conduct an independent project evaluation, including documentation of treatment outcomes for clients and their children.

Goals and Objectives of the Program

Under the terms of the demonstration grant (GFA No. TI95-01 and No. TI95-02), projects pursued four primary goals:

- Demonstrate that alcohol and other drug abuse treatment services delivered in a residential setting and coupled with primary health, mental health, and social services for women and children, can improve overall treatment outcomes for women, children, and the family unit as a whole;
- Demonstrate the effectiveness of 6-month or 12-month stays in a comprehensive residential treatment program;
- Develop models of effective comprehensive service delivery for women and their children that can replicated in similar communities; and
- Provide services to promote safe and healthy pregnancies and perinatal outcomes.

As part of their efforts to achieve overall goals for the program, projects were required to fulfill the following CSAT objectives:

- Provide outreach and identification services that promote treatment entry and retention;
- Provide comprehensive, standardized screening/assessment/evaluation for women, infants, and children;
- Provide medical testing for substance abuse related diseases/conditions;
- Provide medical care services for substance-abusing women and their children;
- Provide individual/group therapy/counseling services for women and children;
- Provide educational/vocational services for women;
- Provide other support services for women, infants, and children;
- Provide a full range of other therapeutic interventions for infants and children;
- Encourage family member involvement in children=s treatment;
- Provide individualized effective case management/care coordination;
- Provide treatment services that are gender, culture, and age appropriate for the targeted population;
- Document project development and implementation;
- Provide a continuum of care; that is, the long-term provision of services, in a residential setting; and
- Encourage active involvement of women in the treatment process.

The RWC/PPW Cross-Site Evaluation

In late 1995, CSAT contracted Caliber Associates to design and develop a cross-site evaluation of the RWC/PPW program. The principal challenge of the cross-site study was to develop consensus among grantees and CSAT on a common set of core data elements that would be collected by each grantee at specified points in each client's (and child's) treatment, along with a data collection system (software) that could be used by local project staff to encode these data and periodically transmit them for cross-site pooling and analysis. All cases admitted on or after October 1, 1996 were included in the cross-site study. All data were collected between October 1996 and April 2001.

The data reported in this series were submitted by local project staff and evaluators using a standardized cross-site data system that provided for collection of specified data elements at several points in each client's (and child's) treatment: at admission to treatment, quarterly throughout treatment, at

treatment discharge, and 6-months following discharge.
Many projects struggled with the requirement to conduct 6-month follow-up interviews with all former clients. Ultimately, 18 of the 50 projects failed to achieve a minimal follow-up response rate of at least 50% and were excluded from analyses of post-discharge client outcomes.

The remaining 32 projects submitted usable follow-up data for a total of 1,181 clients, constituting 66% of the 1,798 follow-up-eligible former clients from these projects. All cross-site analyses of client outcomes are based on this respondent sample of 1,181 clients, statistically adjusted to represent all follow-up-eligible clients at each of the 32 projects (for additional information about nonresponse analyses and adjustments, see Fact Sheet #16A).

When follow-up data are not required, a second client dataset is available that contains all other study information for a total of 5,141 clients who were admitted to the 50 study projects. This file includes discharge and length of stay information for a subset of 3,776 clients. It also includes information about pregnancy outcomes for 739 clients who delivered while in treatment, as well as information about outcomes of over 10,000 previous client pregnancies. Information about 5,729 client children who were admitted into RWC/PPW projects is also available in a third dataset. Extensive information about project characteristics, obtained from on-site interviews with administrative and clinical staff, is included in all client and child datasets.

The fact sheets that follow in this series highlight key findings from the RWC/PPW Cross-Site on various topics. Topics include:

RWC/PPW Cross Site Evaluation Fact Sheets in This Series

Fact Sheet No.	Subject
1	RWC/PPW Program and Cross-Site Overview
2	Client Characteristics
3	Child Characteristics
4	Project Characteristics
5	Services Provided
6	Client Retention/Completion
7	Treatment Cost
8	Client Pregnancy Outcomes
9	Client Outcomes
10	Family Preservation
11	Program Sustainability
12	Prevalence and Consequences of Sexual Victimization
13	Program Cost-Benefit Analysis
14	Understanding Relapse
15	Factors Affecting Post-Treatment Abstinence
16	Methodological Issues in Follow-Up Data Collection
16A	Methodological Implications of Follow-Up Nonresponse
17	Methodology: Censored Data Analysis

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RWC/PPW Cross-Site Evaluation

Client Characteristics

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children.

This fact sheet presents an overview of client characteristics at admission to treatment. The sample on which these numbers are based consists of 5,110 clients who entered treatment between October 1, 1996 and March 31, 2001. From these baseline characteristics, it is evident that the clients who entered the 50 substance abuse treatment programs in the cross-site presented with a number of problems beyond substance dependence. Presenting problems also included abuse, criminal justice system involvement, child protective services involvement, employment, physical health, mental health, and homelessness, just to name a few.

Baseline Client Characteristics: Substance Abuse

A number of client baseline characteristics are presented in Table 1. It is apparent from these numbers that the cross-site clients entered treatment with acute substance abuse problems. Of the clients who identified a primary drug of abuse at admission, over half of the clients identified either crack or cocaine as their primary. Smaller numbers of clients identified alcohol (14.2%), heroin (11.0%), and methamphetamine (10.6%) as their primary drug. The clients entering treatment also had a long history of substance abuse, with 86.1% of clients receiving prior treatment for their addictions. Clients had, on average, been using alcohol or other drugs for over half their lives.

Table 1. RWC/PPW Client Baseline Characteristics: Substance Abuse

Characteristic	% of Clients
Primary Drug of Abuse (admission)	
Crack	44.1%
Cocaine	11.8%
Alcohol	14.2%
Heroin	11.0%
Methamphetamine	10.6%
Other	8.3%
Client Received Prior Substance Abuse Treatment	86.1%
Avg. Age at Admission	30.4 Years
Avg. Number of Years of AOD Use	15.3 Years

Baseline Client Characteristics: Demographics

The RWC/PPW demonstration grants targeted areas that were traditionally underserved by treatment programs, especially in areas with large minority populations. Accordingly, the client population was quite diverse (Table 2), with 45% African-Americans, 2% Alaskan Natives, 12% Hispanics/Latinas, 7% Native American, and 31% Caucasians.

Clients entering treatment had, on average, just over 3 children; however, because of project limitations or because of CPS custody cases, many clients came in to treatment with only one or two children. Therefore, some children remained outside the care of the mother during treatment, and reunification became a major treatment goal in many cases.

Just over a quarter of the clients were pregnant at admission, and one in ten (10.1% of clients) were employed in the 30 days prior to admission.

Baseline Client Characteristics: Other Presenting Problems

Table 3 lists other presenting problems reported at admission. Sixty percent of clients reported having a mental health problem (i.e., they were dually diagnosed) in the 12 months prior to admission. Mental health treatment, then, became an essential component of the cross-site projects' treatment regimen. Just over half (51%) of clients entering treatment reported being involved with the criminal justice system (CJS), and almost half of clients (49.6%) reported having a child removed from their custody by Child Protective Services (CPS) at any time in the past. Many of these CPS- and CJS-

involved clients were in treatment either as an alternative to incarceration, or as a condition of regaining custody of their children. In other words, many cross-site clients were required to complete treatment in order to fulfill a goal or requirement.

Over a third of cross-site clients reported being homeless in the two years prior to admission, and well over half (59%) of clients reported being a victim of abuse (e.g., emotional, physical, or sexual) at any time in the past.

Table 2. RWC/PPW Client Baseline Characteristics: Demographics

Characteristic	% of Clients
Race/Ethnicity	
African-American	44.7%
Alaskan Native	1.5%
Hispanic/Latina	11.5%
Native American	6.7%
White (not Hispanic)	30.6%
Number of Children	
0	3.0%
1	20.9%
2	24.9%
3-11	51.2%
Number of Children in Treatment	
0	28.5%
1	44.2%
2	18.5%
3-7	8.8%
Client Pregnant at Admission	25.9%
Client Employed at Admission	10.1%

Given this multitude of problems, it is evident that clients entering substance abuse treatment were in need of services beyond the treatment itself. These other presenting problems had to be addressed by project staff, which complicated service delivery, but also resulted in a generally higher quality of care.

The RWC/PPW cross-site projects treated clients who were chronic substance abusers, most of whom tried unsuccessfully in the past to cure their addictions. (Furthermore, the clients had, on average, been AOD-abusers for over half their lives.) Given this treatment population, it appears that a holistic treatment modality is needed to address issues that go beyond a client's substance abuse, and as we will show in this series, those efforts were both appropriate and successful.

Table 3. RWC/PPW Client Baseline Characteristics: Other Presenting Problems at Admission

Characteristic	% of Clients
Client Had a Mental Health Problem (Dually Diagnosed)	60.0%
Client was Criminal Justice System (CJS) Involved	50.7%
Client Reported Children Removed by Child Protective Services (CPS), Any Time in the Past	49.6%
Client was Homeless in the 2 Years Prior to Admission	34.3%
Client was a Victim of Abuse Prior to Admission	59.2%

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CHILD CHARACTERISTICS

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

The basis for the information presented in this factsheet is an analysis by Nikki Conners *et al.*, (2003) of RWC/PPW mothers and children. The analysis employs data collected on 4,084 children and their 2,746 mothers who were served by RWC/PPW programs between 1996 and 2000. For physical and developmental problems, the sample was limited to ages for which it is reasonably likely that a diagnosis of the problem would be made (e.g., some conditions such as learning delays would likely go undiagnosed until school entry).

Child Demographics

Table 1 provides information on the characteristics of children at the time of entry into the RWC/PPW program. The children ranged in age from newborn to 17 years with a mean of 3.8 years. Most children were in the legal custody of their mother (67.1%) or mother and father (12.8%) at entry into treatment. For many children, there was a discrepancy between the person(s) holding legal custody of the child, and the person(s) who actually cared for the child prior to entry. As an example, while few grandparents or other relatives had legal custody of children, 19.3% of clients' children lived with either their grandparent(s) or other relatives in the 30 days prior to entry. Mothers, however, remained the primary caregivers for RWC/PPW, either alone (45.8%) or with the child's father (9.0%).

Table 1: RWC/PPW Child Demographics
n = 4,084

Female	51%	
Mean Age	3.8 years (SD = 3.4)	
Child Placement	**Legal Custody**	**Living Situation**
Mother	67.1%	45.8%
Father	0.9%	4.1%
Mother/Father	12.8%	9.0%
Grandparent	2.1%	13.3%
Other Relative	0.8%	6.0%
State	13.8%	15.9%
Other	2.5%	5.7%

Child Physical and Developmental Problems

Table 2 compares the occurrence of various physical problems and developmental delays in this sample (as reported by mothers at child entry into treatment) to children nationally. As stated previously, RWC/PPW samples for each condition were limited to ages for which it was reasonably likely that a diagnosis of the problem could be made. For many conditions, there was very little difference between the two groups of children. However, compared to children nationally, children in this sample were more than twice as likely to have asthma, three times as likely to have hearing problems, and seven times as likely to have vision problems.

Table 2:
Percentage of RWC/PPW Children in Treatment with Physical Health/Developmental Conditions Compared to National Rates

Condition (Age Cutoff)	**RWC/PPW %**	**National %**
Asthma (min. 6 mo.)	14.8	6.2
Fetal Alcohol Syndrome (min. 3 yrs.)	0.3	0.03-0.22
Hearing Problem (min. 3 yrs.)	2.4	0.7
Vision Problem (min. 3 yrs.)	5.2	0.7
Mental Retardation (min. 6 yrs.)	0.8	0.9
Learning Disorder (min. 7 yrs.)	7.1	5.2
Motor Skills Disorder (min. 7 yrs.)	1.4	2.1
Communication Disorder (min. 3 yrs.)	3.8	2.1
Attention Deficit Disorder (min. 7 yrs.)	8.4	4-12

Child Risk Factors

In addition to experiencing physical and developmental problems during their youth, data collected on RWC/PPW children indicate a greater risk for negative outcomes later in life. Table 3 displays the comparison of an 11-item risk index with available national estimates. The risk index comprises factors that prior research has shown to be associated with poor physical, academic, or socio-economic outcomes for children. Of the eleven factors, nine were present for at least half the RWC/PPW children. The exceptions were homelessness and placement in a neonatal intensive care unit (NICU) at birth. Family low-income status and not living in a two-parent home were the most common risk factors. Children in this sample on average had 6.5 risk factors. For risk factors with comparable national data available, the frequency reported in the RWC/PPW sample was at least twice that in all comparisons. The results from this analysis indicate that children affected by maternal addiction may face throughout their lives an increased likelihood of physical, developmental, and socio-economic difficulties.

Table 3:
Percentage of RWC/PPW Children in Treatment with Risk Factors Compared to National Rates (n = 3,529)

Risk Factor	RWC/PPW Children	National
Homeless in Past 2 Years	28.2	NA
Poor Quality Father Relationship	49.0	NA
Non-Two-Parent Household	90.9	31
Maternal Use of AOD while Pregnant	61.6	5.5 (alcohol) 18.8 (drugs)
Maternal Use of Cigarettes while Pregnant	69.8	20.4
Placed in NICU at Birth	18.6	NA
Low Income Status	91.3	17
Mother Involved with Child Protective Services	56.6	NA
Maternal Mental Illness	58.3	21
Low Maternal Education	52.2	18
Minority Status	77.2	30.9
Mean No. Risk Factors/Child	6.5 SD = 1.7	

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RWC/PPW Cross-Site Evaluation

Project Characteristics

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

The core focus of the RWC/PPW Cross-Site evaluation was to identify relationships among client characteristics, program characteristics, and treatment outcomes for women and their children. Although client-level data collection was the initial focus of the Cross-Site data collection efforts, project-level data collection was planned shortly thereafter, and was seen as a key component in understanding the effectiveness of substance abuse treatment. By combining project-level and client-level data, it is possible to separate the incremental effects of project-level factors (e.g., treatment model, staff characteristics) and client-level factors (e.g., demographics, treatment histories) in the assessment of client outcomes.

Project-level data collection began in the summer of 1997, and continued until the end of 1998. As part of this data collection effort, staff conducted site visits to all 50 RWC/PPW grantees to conduct in-depth, structured interviews with project directors, clinical directors, case managers, and local evaluators. Follow-up questions were also asked of the projects to develop a comprehensive database of project characteristics.

The 50 projects that participated in the RWC/PPW Cross-Site evaluation provided a very specific type of treatment: long-term residential treatment for pregnant or parenting women. Despite this similarity in treatment modality and treatment population, the Cross-Site projects proved to be diverse in many ways. Such project-level differences can be compartmentalized into two broad categories: structural characteristics and treatment characteristics.

Structural Characteristics

Structural characteristics of the projects differed considerably, as shown in Table 1. The 50 Cross-Site projects, located in 27 states and the U.S. Virgin Islands, differed not only in geographic location, but also in size, in treatment approach, and in treatment population. Projects were nearly evenly divided between treating women with children over one year of age (RWC) and treating pregnant or postpartum women (PPW). The intended duration of treatment was also roughly split in half, with 46 percent of projects indicating that they were 6-months long and 54 percent reporting to be 12-month projects.

Table 1. Structural Characteristics of RWC/PPW Projects

Attribute	Number of Projects	Percent of All Projects
RWC/PPW		
RWC Projects	26	52%
PPW Projects	24	48%
LENGTH OF STAY		
6 Months	23	46%
12 Months	27	54%
NUMBER OF BEDS		
10-12	18	36%
14-16	12	24%
18-20	6	12%
21-50	14	28%
THERAPEUTIC APPROACH		
Modified Therapeutic Community	14	28%
12-Step	16	32%
Cognitive/Behavioral	16	32%
Individualized	4	8%
TREATMENT SETTING		
Project Located in Urban Area	29	58%
Project Located in Suburban/Fringe Area	12	24%
Project Located in Rural Area	9	18%

Over a third (36%) of the projects were relatively small, with 10 to 12 beds, while slightly less than a third (28%) were relatively large projects, with 21 to 50 beds. Projects were split between their therapeutic approach, with 28% of projects considering themselves modified therapeutic communities, 32% employing the 12-step model, and another 32% employing a cognitive/behavioral model. Eight percent of projects considered their therapeutic approach individualized. These categories for therapeutic approach are not necessarily mutually exclusive: a multi-pronged approach to treatment was common among the projects.

Projects were located in a variety of treatment settings, with 58% located in urban areas, 24% in suburban/fringe areas, and 18% located in rural areas.

Table 2. Treatment Characteristics of RWC/PPW Projects

Attribute	Number of Projects	Percent of All Projects
COUNSELOR QUALIFICATIONS		
College Degree	45	90%
Certified	33[a]	72%
Recovering Substance Abuser	30[b]	63%
Culturally Representative	33[a]	72%
TARGET POPULATION		
African-Americans	15	30%
Hispanic/Latinas	11	22%
Native Americans	7	14%
HIV-Positive Women	8	16%
Homeless Women	18	36%
Dual Diagnosis	15	30%
Criminal Justice System Involved	14	28%
EXCLUSION CRITERIA		
Age (Over 18)	28	56%
Violent/Suicidal Clients	21	42%
Organic Brain Disorders	31	62%
Acute Medical Conditions	29	58%
RELAPSE POLICY		
Flexible/ Individualized	35	70%
One and Out	9	18%
2nd and Out	3	6%
No Policy	2	4%
Not Discharged	1	2%

[a] *n* = 46
[b] *n* = 48

Treatment Characteristics

Treatment characteristics also differed considerably among projects (Table 2). Counselors in the RWC/PPW projects were well-qualified, with 90 percent of projects having college-educated counselors, 72% of projects having certified counselors, and 72% of projects having culturally representative counselors. Further, over half of projects (63%) had counselors on staff who were recovering.

Many projects targeted specific underserved populations. About a third of the RWC/PPW projects each targeted African-Americans, homeless women, and dually-diagnosed women. Other targeted populations include Latinas (22%), Native-Americans (14%), HIV-positive women (16%), and CJS-involved women (28%).

In addition to target populations, most projects also had exclusion criteria. Most often, these criteria were in place to identify clients whose problems were beyond the capabilities of the project. Many projects excluded clients who were too young, who had organic brain disorders, or who had acute medical conditions that predominated over the client's need for substance abuse treatment.

Projects had differing policies concerning in-treatment relapse. A majority (70%) had individualized relapse policies. About a quarter of the projects expelled clients who relapsed while in treatment, either for one or two violations of sobriety requirements.

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As part of their grants, cross-site projects were required to provide:

- gender-specific and culturally appropriate treatment services;
- on-site residential care for clients' infants or young children, to enable clients to maintain supervised parenting relationships throughout their treatment; and
- comprehensive services for both clients and their infants/children--substance abuse treatment, prenatal care, pediatric care, medical care, mental health services, vocational services, parenting education, legal services, nursery/preschool, transportation, etc.

This fact sheet details the client services provided by the RWC/PPW projects. Service data, collected quarterly during treatment, were aggregated across 5,141 clients in 50 projects.

Services Provided

A list of services provided, along with the percentage of clients receiving each service and the percentage of projects offering each service, is presented in Tables 1-3. Services are separated into three main categories: counseling treatment services, health care services, and ancillary services. Many services were provided on-site; however, some services such as primary health care were often arranged for off-site. Both on-site and off-site services are reflected in Tables 1-3.

Counseling Treatment Services

The percentage of clients who received various counseling treatment services is presented in Table 1, as well as an accounting of the percentage of projects offering each service. Individual counseling, group counseling, and 12-step or other self-help programs were the most commonly provided treatment services. Over ninety percent of the clients received these services during their stay in treatment. Half of the clients received family group counseling and psychological/emotional abuse therapy, and nearly forty percent of the clients received therapy for sexual or physical abuse experienced prior to admission to treatment. In addition, one third of the clients received smoking cessation services and over three-quarters of the clients participated in recreational groups.

Column 2 of Table 1 indicates that each counseling service, although not received by every client, was offered by every project, or at least by the vast majority of projects. The discrepancy between the first and second column in Table 1 is attributable to the fact that some clients dropped out of treatment after a very short period of time, or because some services were not needed by every client.

Table 1:
Counseling Treatment Services Provided by RWC/PPW Cross-Site Demonstration Projects

Service	% of Clients Receiving Service	% of Projects Offering Service
Individual Counseling	98%	100%
Group Counseling -- Planned Structure	96%	100%
Group Counseling -- Open Discussion	95%	100%
Family Group Counseling	52%	98%
Sexual Abuse Therapy	37%	98%
Psychological/Emotional Abuse Therapy	47%	98%
Physical Abuse Therapy	38%	96%
Smoking Cessation	32%	82%
Recreational Groups	79%	100%
12-Step, Self-Help Programs (AOD related)	91%	100%

Health Care Services

Table 2 contains a listing of health care services offered by projects and received by clients. Commonly received health care services include primary health care (75%) and gynecological services (51%). Approximately one-third of the clients each received nutritional therapy, dental care, and family planning services.

SERVICES PROVIDED

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Psychological/Emotional Abuse Therapy	47%	98%
Physical Abuse Therapy	38%	96%
Smoking Cessation	32%	82%
Recreational Groups	79%	100%
12-Step, Self-Help Programs (AOD related)	91%	100%

Health Care Services

Table 2 contains a listing of health care services offered by projects and received by clients. Commonly received health care services include primary health care (75%) and gynecological services (51%). Approximately one-third of the clients each received nutritional therapy, dental care, and family planning services.

Of the 1,051 pregnant clients in the database, over three-quarters received prenatal care. Sixty-four percent of the 835 postpartum clients received postnatal care. Although the percentage of clients who received prenatal care and postnatal care is high, given the focus of the projects, we would expect those numbers to be even higher. Because some clients leave treatment early, and because some postnatal women enter treatment well after giving birth, these numbers are somewhat lower than initially expected.

Table 2:
Health Care Services Provided by RWC/PPW Cross-Site Demonstration Projects

Service	% of Clients Receiving Service	% of Projects Offering Service
Acupuncture	9%	48%
Dental Care	35%	100%
Vision/Eye Care	19%	100%
Family Planning	31%	100%
Primary Health Care	75%	100%
Gynecological Care	51%	100%
Prenatal Care (only for pregnant clients)	78%*	94%
Postnatal Care (only for postpartum clients)	64%*	98%
Nutritional Therapy	34%	100%

* We would expect a very high percentage of women to receive such care right before or right after delivery.

With the exception of acupuncture, health care services were offered by the overwhelming majority of cross-site projects. All projects offered – through either direct care or linkages in the community – primary health, dental, vision, family planning, nutritional therapy, and gynecological care.

Ancillary Services

A variety of ancillary services were included in the clients' treatment regimen. About ninety percent of the clients received parenting training, life skills training, and transportation services. Three quarters of the clients received spirituality services, and about 40% of the clients received vocational rehabilitation training and legal services. Health and nutrition education was provided to 85% of the clients, and 61% of clients received help in arranging public assistance.

All projects offered parenting education, vocational training, life skills training, health/nutrition education, spirituality groups, GED/postsecondary education, help in arranging public assistance, transportation services, and self-help groups for non-substance-related disorders. All but one of the projects offered legal services, and 88% of the projects offered respite care.

Table 3:
Ancillary Services Provided by RWC/PPW Cross-Site Demonstration Projects

Service	% of Clients Receiving Service	% of Projects Offering Service
Parenting Training/ Education	93%	100%
Vocational Training	41%	100%
Life Skills Training	87%	100%
Health/Nutrition Education	83%	100%
Spirituality Groups	74%	100%
GED/Postsecondary Education	29%	100%
Arranging Public Assistance	61%	100%
Legal Services	37%	98%
Transportation	89%	100%
Respite Care	16%	88%
Self-Help Groups for non-Substance Abuse Related Conditions (e.g., Overeaters Anonymous)	36%	100%

Clearly, the cross-site projects offered much more than substance abuse treatment services. These projects offered holistic care to improve the client's functioning, both within her family and in the community at large.

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RWC/PPW Cross-Site Evaluation
Client Retention

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

This fact sheet, based on an analysis by Xiaowu Chen *et al.*, describes clients' length of stay (LOS) in treatment and factors affecting LOS. This analysis employs data collected on 3,265 clients who were admitted into and discharged from treatment between January 1, 1995 and March 31, 2001. Statistical significance for these analyses was ascertained using analysis of covariance (ANCOVA).

By design, RWC/PPW projects provided treatment of either 6 or 12 months planned duration. Clients' average LOS differed based on the project's treatment regimen: the average LOS was 128 days for 6-month projects and 172 days for 12-month projects. Because of these fundamental differences in treatment programs, we will present correlates of client retention separately for 6-month and 12-month projects.

Six-Month Projects

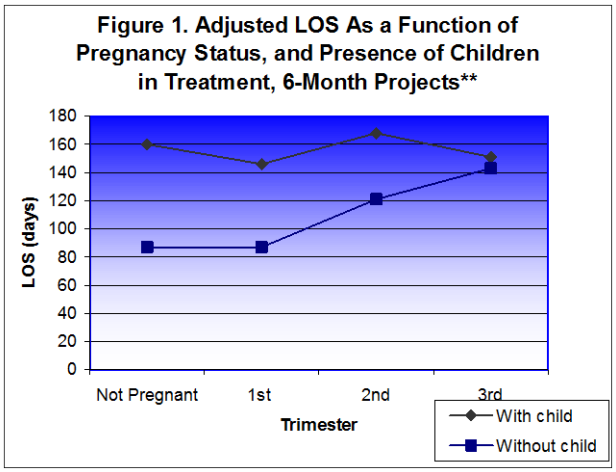
Table 1 shows client retention results for the six-month RWC/PPW programs. A longer length of stay in treatment was statistically associated with dual diagnosis at treatment admission, family members engaging in drug activities, and pretreatment CPS or CJS involvement.

A significant interaction effect was discovered in this analysis: Clients stayed in treatment longer if they entered treatment with children (Figure 1). Among clients who entered treatment without children, non-pregnant clients and pregnant clients in the first trimester of pregnancy had the same adjusted mean LOS (87 days), significantly lower than pregnant clients who entered treatment during their second or third trimester of pregnancy (121 days and 143 days, respectively). Among clients who entered treatment with children, there were no significant differences in mean LOS (which ranged from 146 days to 168 days) across pregnancy status categories.

Table 1. Results of ANCOVA for 6-Month Projects

Variable	Comparison	Mean LOS (days)
Dual Diagnosis**	yes vs. no	144 vs. 121
Family Drug Use**	yes vs. no	141 vs. 125
CPS Involved**	yes vs. no	139 vs. 126
CJS Involved*	yes vs. no	138 vs. 128

* p<.05; ** p<.01



** p<.01

Twelve-Month Projects

Table 2 shows results for the twelve-month programs. On average, pregnant clients stayed in treatment 40 days longer than non-pregnant clients. In addition, longer LOS was significantly associated with not having a spouse or domestic partner, dual diagnosis, and pretreatment CJS involvement. An interaction was also found between CPS involvement and whether or not clients brought children with them into treatment (Figure 2). Bringing children into treatment was significantly associated with a longer LOS, particularly among clients with previous CPS involvement.

Summary

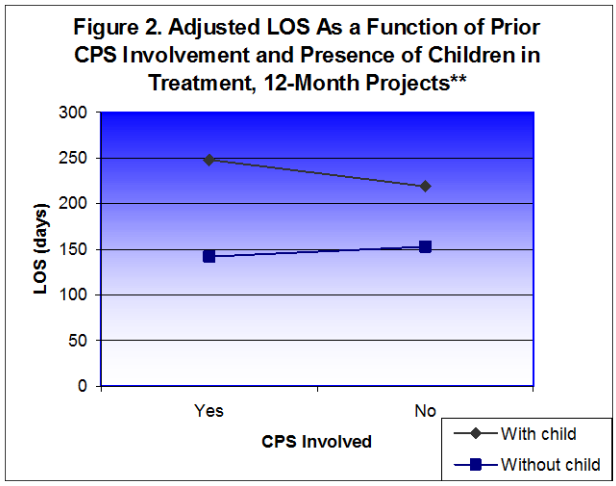
There is a substantial literature, confirmed by RWC/PPW outcome analyses described in other fact sheets, that retention is an important key to success of residential substance abuse treatment programs. Many features of the RWC/PPW program were specifically designed to facilitate client retention, including provisions for on-site care of clients' children and collaboration with involved CJS and CPS agencies. Consistent with these underlying premises, this analysis indicates that women who

entered treatment with children or late in their pregnancy, and women who were under CJS or CPS supervision at treatment admission, tended to remain in treatment close to the planned LOS that applied to their treatment program. Retention was most problematic for women whose children were not admitted into treatment, especially if the woman was not under CJS or CPS supervision.

Table 2. Results of ANCOVA for 12-Month Projects

Variable	Comparison	Mean LOS (days)
Pregnancy Status**		
	not pregnant	167
	1st trimester	204
	2nd trimester	191
	3rd trimester	200
Spouse AOD Use**		
	yes	193
	no	176
	no spouse	203
Dual Diagnosis**	yes vs. no	203 vs. 178
CJS Involvement*	yes vs. no	199 vs. 182

* p<.05; ** p<.01



***** p <.01***

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RWC/PPW Cross-Site Evaluation

Treatment Cost

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for their infants and/or young children.

This fact sheet summarizes information about the economic costs of the treatment provided at RWC/PPW projects. Cost information was obtained using CSAT's Substance Abuse Treatment Cost Analysis and Allocation Template (SATCAAT), a cost accounting methodology that represents the full economic (or 'opportunity') cost of all treatment resources and services used during a specified fiscal year (FY1997, in this case), including donated facilities and services not fully represented in expenditure records. The template allocates costs across 18 service categories that, in aggregate, encompass the full range of project services. For this application, the template was modified to assemble cost data separately for clients and their in-treatment children.

Cost data were collected separately from other cross-site information. The two sets of data were available, in comparable form, for a total of 39 projects. In this analysis, the cost data were simplified to exclude costs of CSAT-mandated evaluations, which are not part of normal clinical operations, and to examine three broad cost components: housing, services to clients, and services to clients' children. The analysis focuses on three unit cost statistics: annual cost per project, daily cost per client, and cost per client treatment episode. Denominators for calculation of daily and episode costs were obtained from cross-site data concerning each project's total number of client in-patient days during the cost year and average client length of stay (LOS) in treatment.

Unit Costs and Cost Components

The average annual cost of the services RWC/PPW projects provided to clients and their children was $928,190 per project (Table 1). Given the numbers of clients treated and their average LOS, this translates into overall unit costs of $159 per client day and $25,744 per client treatment episode. Housing, assessed at full market value, accounted for about 1/3 of RWC/PPW costs (32%). Day care and other services for clients' infants and children also represented a substantial component of the overall cost of this treatment model (30%). Diagnostic and clinical services for clients accounted for the remaining 38 percent. The aggregate cost for all of these client services averaged $60/client-day.

Table 1. RWC/PPW Unit Costs and Cost Components

Index	Value
UNIT COST (AND BASE)	
Project Cost per Year (39 Projects)	$928,190
Daily Cost per Client (5,837 Client Days/Project)	$159
Episode Cost per Client (161.9 Days/Client)	$25,744
COST COMPONENT	100%
Housing	32%
Client Services	38%
Intake Assessments	2%
Clinical Services	36%
Child Services	30%
Intake Assessments	1%
Clinical Services	13%
Child Care, General	16%

Service Intensity and Length of Stay

An analysis of client services data showed that service intensity (i.e., the average weekly number of sessions of clinical services such as individual counseling, group counseling, etc.) was higher during the first few months of treatment than during later stabilization phases. For example, the estimated intensity of clinical services received by clients who received 30 days of treatment was 2.65 times higher than that for clients with an average LOS (162 days). These relative service intensity findings were combined with component unit cost data to develop synthetic estimates of the per-day and per-episode costs for various LOS. The projection treats client and child intake as fixed costs per client episode; housing and child care are treated as fixed costs per day; and clinical services are treated as variable costs per day. On the assumption that the cost of clinical services is proportionate to its relative intensity, the daily cost of clinical services for clients who leave treatment after a given LOS is calculated as the overall average daily cost for client and child clinical services ($76.88) times the relative service intensity index for that LOS. Unit cost estimates derived from this approach are shown in Table 2 for selected LOS

benchmarks. As shown, daily costs decline markedly during the first three months of treatment; episode costs increase with increasing LOS, but not at a constant rate. For example, the episode cost for a six-month treatment stay is roughly the half as great as the cost of six one-month stays.

Table 2. Length of Stay and RWC/PPW Unit Costs

Length of Stay	Intensity Index	Daily Cost	Episode Cost
1 Month (30 Days)	2.65	$309	$9,255
3 Months (90 Days)	1.35	$190	$17,103
6 Months (180 Days)	1.00	$158	$28,529
12 Months (365 Days)	1.00	$156	$56,993

Project Characteristics

The 39 projects varied considerably in measured costs (e.g., the standard deviation for project average episode cost was $13,440, about half the mean for this statistic). Project differences in average episode cost were strongly correlated with the project's average LOS ($r=.58$, $p<.001$) and (negatively) with bed utilization rate ($r= -.33$, $p<.05$). Daily costs were strongly correlated (negatively) both with project size (average daily client census) ($r= -.59$, $p<.001$) and with bed utilization rate ($r= -.47$, $p<.01$). Controlling for these differences in size, utilization, and average LOS, project differences in location, clientele, or treatment approach were not significantly associated with any cost indices.

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RWC/PPW Cross-Site Evaluation
Pregnancy Outcomes

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

For pregnant clients, one important program objective was to provide prenatal care and other services aimed at reducing the high prevalence of premature deliveries and related birth complications that occurs among drug-abusing women. This fact sheet highlights cross-site study findings on this topic. Pregnancy outcome data were obtained for 739 clients who delivered during treatment. As part of the client admission questionnaire, comparison information was also obtained about the rate of adverse outcomes (specifically, infant deaths) from 10,816 previous live births.

Pregnancy Outcome Findings

Rates of adverse pregnancy outcomes for clients who delivered in treatment were measured in 3 areas: low birthweight (LBW) deliveries, premature deliveries, and infant deaths. These client outcomes were compared to outcomes for women in the general population (from US vital statistics data), and to the best available estimates of the rates of adverse outcomes that would have been likely had clients continued abusing drugs throughout their pregnancies. The infant mortality rate for clients' previous (pre-treatment) live births was used as the comparison for that indicator. Average rates of LBW and premature delivery among women who test positive for cocaine, from previous hospital studies, were used as the comparisons for those two indicators (rationale: cocaine was the most common problem drug in the RWC/PPW population, used by 68% of clients in the 6 months before treatment entry, and it is also the substance whose connection to adverse pregnancy outcomes has been most thoroughly studied in the literature).

The findings (Table 1) were strikingly positive on all three major pregnancy outcome measures. Relative to available estimates for user comparisons:

- The rate of premature delivery among clients in treatment was 7.3%, representing a 73% risk reduction from the comparison figure of 27.0% premature delivery for cocaine-positive women;
- The rate of LBW delivery among clients in treatment was 5.8%, representing an 84% risk reduction from the comparison figure of 34.0% LBW for cocaine-positive women; and
- The infant mortality rate for clients in treatment was 0.4%, representing a 56% risk reduction from the comparison figure of 1.2% infant mortality for previous client pregnancies.

These rates of adverse pregnancy outcomes are not only much lower than would be expected for substance-abusing women, all three are also lower than the rates reported for all American women in US vital statistics (Table 1 [also see Ventura, Martin, Curtin, and Mathews, 1999]).

Table 1: RWC/PPW Pregnancy Outcomes

	Outcome per 100 Live Births		
Outcome Measure	**Substance Abuser Comparison (n varies)**	**All U.S. Women (n = 3.8 million)**	**RWC/PPW Client In-Tx Deliveries (n = 739)**
Premature Delivery	27.0*	11.4	7.3
Low Birth Weight	34.0**	7.5	5.8
Infant Death	1.2***	0.7	0.4

* *n* = 4,095 from 18 recent hospital-based studies of outcomes for cocaine-using women

** *n* =11,561 from 18 recent hospital-based studies of outcomes for cocaine-using women

*** *n* = 10,816 previous pregnancies of RWC/PPW clients, as reported at treatment admission

The greatest RWC/PPW risk reduction was found for African-American women, who are at elevated risk of adverse outcomes in the general population. For example, African Americans in the general population have a 17.6% premature delivery rate, as compared to 9.9% for whites, but African-American clients' in-treatment premature delivery rate was essentially the same as that for white clients (8.0%

vs. 8.1%).

These findings suggest that residential treatment for pregnant women can have a substantial, positive effect in reducing risks of premature delivery and other adverse pregnancy outcomes. Although the cross-site study was not designed to identify the specific treatment factors that produce these results, beneficial treatment factors such as supervised alcohol and drug abstinence, improved prenatal care, improved nutrition, and reduced stress are likely causes.

References

Ventura, S., Martin, J., Curtin, S., and Mathews, T., 1999. "Births: Final Data for 1997." *National Vital Statistics Report*, vol. 47(18).

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RWC/PPW Cross-Site Evaluation

Client Outcomes

Introduction

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This fact sheet presents the main outcomes of the RWC/PPW cross-site evaluation. As we have shown in Fact Sheet #2 (Client Characteristics), cross-site clients entered treatment with a large number of problems beyond substance dependence, including histories of abuse, criminal justice involvement, child protective services involvement, low employment, physical health, mental health, and homelessness, just to name a few. Since the cross-site projects provided a holistic treatment regimen, designed to address a number of problems beyond substance abuse, it would stand to reason that benefits from treatment would accrue to the client in areas beyond reduced substance abuse.

We present client outcomes in two parts. First, we will look at outcomes related to substance abuse. Then, we will look at a number of other outcome measures that go beyond substance abuse.

Client Outcomes: Substance Abuse Related

The cross-site projects are first and foremost substance abuse treatment programs, so naturally, we are primarily interested in the change in substance use from the 6-months prior to admission to the 6-months post-treatment. The RWC/PPW projects reported a 39.4% relapse rate across all substances, compared to 87.3% at baseline (Table 1), and there were significant reductions in AOD use across each individual substance as well.

At first glance it may seem odd that 13 percent of the clients who entered treatment reported using no alcohol or other drugs in the 6 months prior to admission. One would probably think that this percentage should be closer to 100, especially given the relatively drastic and costly intervention involved in residential treatment. However, upon closer inspection we found that most of the clients in this group were in controlled situations before treatment where AOD use, though not an impossibility, would be very difficult (e.g., in hospitals, other treatment programs, or jail). These 13% might actually be exactly the people with the most acute problems since they had to be put in a controlled environment. In short, we are confident that everyone admitted to treatment did have a substance abuse problem.

These reductions in use are impressive. Most remarkable, however, is the fact that more than 60 percent of women in the cross-site reported remaining completely clean and sober 6 months after discharge. Considering that the vast majority of these women were chronic substance abusers who had tried unsuccessfully in the past to cure their severe addictions (see Fact Sheet #2), these numbers are quite encouraging.

Table 1. Client AOD Use, Pre-Post Change*

Substance	% Clients Used Pre-Tx	% Clients Used Post-Tx
Any	87.3%	39.4%
Alcohol	65.4%	26.8%
Crack	51.7%	20.4%
Powder Cocaine	34.3%	8.5%
Heroin/Speedball	18.0%	6.4%
Marijuana	48.2%	14.9%
Methamphetamine	21.1%	6.0%
Other Illegal Drugs/Substances	22.5%	5.5%
Over-the-Counter	13.6%	2.9%

* All differences significant to p < .0001 level.

Client Outcomes: Non-Substance-Abuse Related

The cross-site projects provided a number of interventions beyond substance abuse treatment. This multitude of interventions could be expected to produce a multitude of benefits to the client. Table 2 contains a summary of indicators that are associated with in-treatment interventions, and on all these indicators, with the exception of one, significant improvements are evident between pre-treatment and post-treatment.

Arrests dropped quite dramatically between the 12 months prior to admission and the 6 months following discharge: 56% of clients reported being arrested at least once pre-treatment vs. only 13% of clients post-treatment.

We also saw improvements on a number of economic and social outcomes, even though the percentage of clients who reported that their main source of financial support was public assistance remained relatively static between pre-treatment and post-treatment. Two competing forces served to work against each other: clients who were connected into public assistance by the projects and clients who became economically self-sufficient and got off public assistance. These two groups largely canceled each other out, but we can also see from the third row of Table 2 that since employment rose quite dramatically -- from 7% to 37% -- we can assume that a lot of clients were connected into public services by virtue of their time in treatment. There were also substantial increases in the percentage of clients in vocational or educational programs, from 2 percent pre-treatment to 19% post-treatment.

One particularly promising finding was the substantial reduction in clients who lived with AOD-involved spouses or partners. From a lot of anecdotal evidence from the projects, and from the literature as well, we have found that unhealthy relationships with partners is a key factor perpetuating substance abuse among women. Without these relationships, clients are almost certainly much better off. Substantial reductions were also found in the percentage of clients who had children in foster care. For many clients, regaining custody of children was contingent upon successful completion of treatment. So, this decline in foster care appears to be indicative of some women successfully completing treatment.

Clients also emerged from treatment healthier than when they came in. It would only stand to reason that if clients were not healthy, it would complicate the treatment process quite dramatically. Ensuring a healthy client population then -- at least to the extent possible -- is a major goal of treatment providers.

All projects provided health care, either through direct services or more often through linkages in the community. Indications are that these investments paid off: the percentage of clients who reported any physical health problem declined from 70% pre-treatment to 46% post-treatment, and likewise, the percentage of clients who reported a mental health problem also declined significantly, from 57% to 40%.

Table 2. Non-AOD Related Outcome Indicators: Pre-Post Change*

Indicator	% Clients Pre-Tx	% Clients Post-Tx
Client Arrested	56%	13%
Main Source of Support: Public Assistance	46%	45%
Employed in the Past 30 Days	7%	37%
Client in Vocational/ Educational Training	2%	19%
Client Lived with AOD-Involved Spouse/Partner	45%	12%
Client Had at Least One Child in Foster Care	28%	20%
Client Had Physical Health Problem	70%	46%
Client Had Mental Health Problem	53%	40%

* All differences significant at the p<.01 level, except for Main Source of Support: Public Assistance.

These results indicate that treatment accrues substantial benefits to clients including – but not limited to – substance abuse. Treatment also results in reduced crime, higher employment, healthier relationships, family reunification, and better physical and mental health. We can only understand the true benefits of a holistic model when we investigate the holistic benefits that result from it.

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FAMILY PRESERVATION

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

This fact sheet summarizes RWC/PPW clients' overall success in retaining or regaining custody of their children over the six months following discharge from treatment. It also examines the extent to which such success was affected by the clients' pre-treatment involvement with child protective services (CPS), completion of the treatment program, and post-treatment abstinence from alcohol and other drugs (AOD).

Sample and Method

The sample consists of the 888 RWC/PPW clients in the post-discharge sample who brought at least one child into treatment. These clients brought a total of 1,186 children into treatment. To determine whether clients who relapsed after treatment discharge were more likely to have a child removed by CPS, we compared responses from the relapsed clients to abstinent clients, and responses from the clients who completed treatment to those who did not. Similar comparisons were performed to determine whether clients who completed treatment and remained AOD abstinent were more likely to live with one or more children in the six months following discharge from treatment.

Custody of In-Treatment Children

For many of the women who entered RWC/PPW projects, their ability to maintain or regain custody of their children was in question when they entered treatment. Many (44%) of the children who were (provisionally) reunited with their mothers during treatment had not been in the mother's custody shortly before treatment, and many of the remaining 56% also were presumably at risk of being removed if treatment proved unsuccessful. One indication of the overall success of the program is that, six months after their mothers' discharge from treatment, 88% of the children treated at RWC/PPW projects were still living with their mothers (Figure 1).

Figure 1: Change in Physical Custody of Children, Pre- vs. Post-Tx

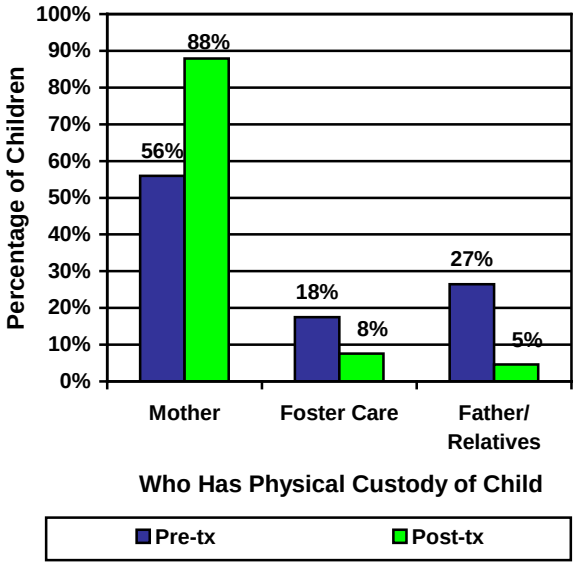
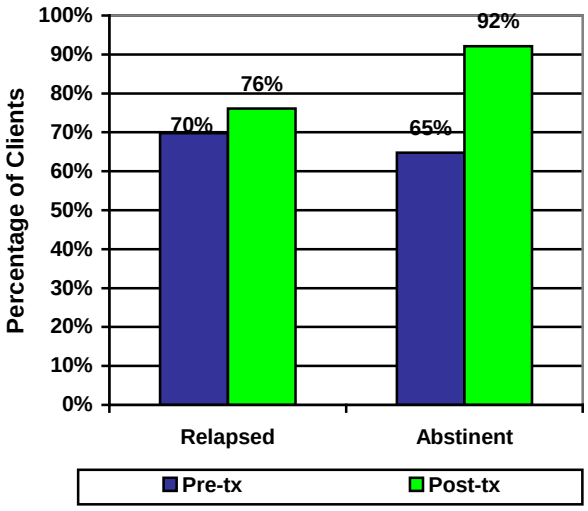


Figure 2: Change in Clients Living with One or More Children, Pre- vs. Post-Tx



Post-Treatment Drug Abstinence

Overall, 60% of the women who entered RWC/PPW projects later reported in follow-up interviews 6 months after discharge that they had successfully remained completely drug and alcohol free since treatment. The remaining 40% acknowledged some amount of relapse since their discharge. This difference in post-treatment abstinence was strongly predictive of the mother's success in maintaining or regaining custody of her children. Thus, 92% of the abstinent women had custody of at least one of their children 6 months after discharge, up from 65% before treatment, while only 76% of relapsing women had custody of any children 6 months after discharge, barely higher than the 70% pre-treatment figure for this group (Figure 2).

Correlates of Custody Loss

Overall, 12% of clients reported that Child Protective Service (CPS) agencies removed children from their custody in the 6 months since they left treatment. A logistic regression analysis of this outcome revealed a strong interaction between whether the mother was under CPS supervision before treatment (i.e., whether any of her children were in foster care shortly before treatment) and whether she relapsed after treatment. For women not previously under CPS supervision, those who relapsed after discharge were 5.2 times more likely to lose custody of children than those who remained abstinent. For CPS-monitored women, those who relapsed were 21.1 times more likely to have children removed than those who remained abstinent. Other variables significantly associated with increased odds of removal, all else being equal, were age of child (infants were more likely to be removed than older children), treatment completion status (drop-outs were more likely to lose custody than completers), mental health disorders (clients with such problems were more likely than others to lose custody), and race/ethnicity (whites were less likely than minorities to lose custody).

Conclusion

In this study, we found a net post-treatment vs. pre-treatment increase in the percentage of clients having physical custody of any children, and a corresponding decrease in the number of clients' children in foster care. Such family reunification changes were contingent on the mother's response to treatment, with women who successfully completed treatment and those who remained alcohol- and drug-free after treatment being much more likely than treatment drop-outs or women who relapsed to regain/maintain custody of their children. Such treatment-completion and post-treatment abstinence contingencies were more pronounced among clients who were under CPS supervision at treatment onset than among other clients.

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RWC/PPW CROSS-SITE EVALUATION

PROGRAM SUSTAINABILITY

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children.

One of CSAT's original goals for the RWC/PPW Cross-Site Demonstration was to provide "seed money" to the projects: funding that would allow substance abuse treatment programs to flourish (especially in areas of high need of such services), with the eventual goal that the projects would become self-sustaining after their 5-year grant periods ended. Insofar as there was a need in the community, it was hoped that the need would be recognized, developed, and sustained for the long run. Sustainability, then, can be considered an important outcome of the RWC/PPW Cross-Site Demonstration. This type of outcome concerns not only the individual client, but the entire community as well, and is viewed as a major indicator of the perceived value and effectiveness of the treatment program's services.

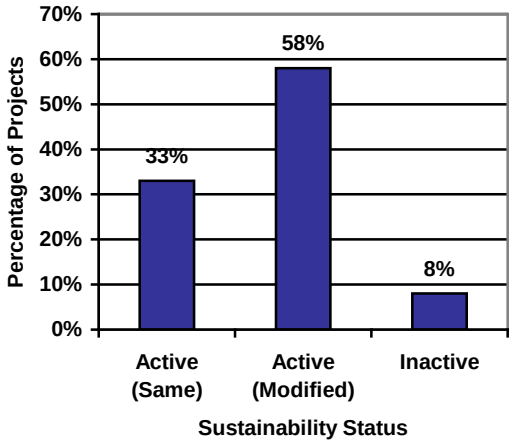
The RWC/PPW Sustainability Study

As part of the cross-site evaluation process, a separate study on sustainability was conducted (Dowell, Burgdorf, and Herrell, 2000). The purpose of this study, on the most basic level, was to find out what projects were doing to sustain themselves, and what worked. As the study began in 1998 (two years before the grant period for the second cohort of 12 projects ended), 38 of the 50 projects were asked to take part in the study. All but two (36) of the projects who were asked to be in the study agreed to participate.

Sustainability Outcomes

We found that the vast majority of RWC/PPW projects were able to sustain themselves in one form or another (Figure 1). Of the 36 projects that participated in the sustainability study, all but three projects (33) obtained the necessary funding to sustain themselves, and one-third (12) of the projects were able to maintain, or even expand, treatment services following their CSAT grant periods. This outcome was particularly encouraging to cross-site staff because it fulfilled one of the original goals of the Cross-Site Demonstration: to expand treatment capacity in the community.

Figure 1: Sustainability Status of RWC/PPW Projects at the End of the CSAT Grant (n=36)



Almost all projects that were successful in sustaining themselves did so primarily with help from the state government. All projects directly lobbied their state legislatures, and almost half (44%) were successful in those efforts (Table 1). More often, projects received additional funding through their single-state agencies. State agencies that often served as pass-throughs for the federal RWC/PPW grants often became the funding agencies themselves. Through their close cooperation with the RWC/PPW grantees, states and treatment programs became aware of each others' activities, and these close relationships paid off in the form of continued funding. Ostensibly, these sustained projects were also funded because the states, in their close cooperation with the projects, understood the needs that were being fulfilled in the community through the project's activities.

The cross-site projects did not limit their sustainability efforts to their respective states (Table 1). Additional funding was sought from a number of sources, including private grants (89%), in-kind contributions (86%), fundraising (78%), TANF (72%), and local government (61%). Projects were proportionally more likely to receive funding from in-kind contributions, fundraising, and private grants,

and less likely to receive funding from TANF and local government.

Table 1. Sources of Funding After the End of the CSAT Grant Period (n=36 projects)		
Source	**% That Sought Funding**	**% That Received Funding**
State Legislature	100%	44%
Single-State Agency	89%	72%
Private Grants	89%	78%
In-Kind Contributions	86%	81%
Fundraising	78%	72%
TANF	72%	42%
Local Government	61%	42%

Factors Associated with a Successful Sustainability Effort

The sustainability study identified some commonalties in the elements of a successful sustainability effort. First, early and careful planning was needed. Most successful projects started planning for sustainability in the first year of their grant periods. Second, effective relationships must be developed with key single state agency (SSA) officials. These relationships oftentimes were the key element to sustainability, because they allowed the state officials to become knowledgeable about and involved in the project's activities and successes. This knowledge, in turn, was passed on to key decision-makers in the form of SSA advocacy within the state government. Next, strong project leadership, especially from the project director, was needed in order to launch an effective sustainability effort. The use of evaluation data was also particularly helpful in project efforts to obtain funding, as 92% of projects reported using evaluation data in their sustainability efforts. Without a demonstration of the project's treatment effectiveness, projects might not have had the same level of success in obtaining continuation funding. Finally, effective marketing was needed in order to get the proper attention focused on the project's needs. This oftentimes involved bringing clients to meetings with the state or legislature to show first-hand how much difference treatment could make on a family's life.

Sustainability was a natural outgrowth of the RWC/PPW projects' success in treating their clients. By providing quality treatment – and through efforts in getting that quality recognized by key funding agencies – the RWC/PPW projects were largely able to maintain treatment capacity in their communities, thus fulfilling one of the key goals of the cross-site demonstration.

References

Dowell, K., Burgdorf, K., and Herrell, J.M., 2000. "Center for Substance Abuse Treatment's Residential Women and Children (RWC) & Pregnant & Postpartum Women (PPW) Demonstration Programs: Sustainability Study Final Report." Report prepared for the Center for Substance Abuse Treatment. Fairfax, VA: Caliber Associates.

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RWC/PPW CROSS-SITE EVALUATION

PREVALENCE AND CONSEQUENCES OF SEXUAL VICTIMIZATION

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for their infants and/or young children.

This fact sheet summarizes cross-site findings concerning the pre-treatment prevalence of sexual abuse victimization among RWC/PPW clients, the association between victimization history and other indicators of pre-treatment abuse and dysfunction, and associations between victimization history and treatment retention and outcome. Analyses are based on two client cohorts: a discharge cohort of 3,482 women for whom admission, in-treatment, and discharge information are available, and a subset of 1,546 women who were time-eligible for 6-month post-discharge follow-up interviews.

Findings

Prevalence: Nearly half (48%) of RWC/PPW clients acknowledged histories of sexual abuse victimization in their admission interviews. Of the women who reported such problems, 24% reported having been sexually abused by their father (or step father); an additional 37% reported abuse by another relative; and the remaining 38% reported being sexually abused only by non-relatives. Anecdotally, project clinical staff reported many instances where women denied abuse at treatment admission but later acknowledged having problems in this area, leading us to regard reported prevalence figures as underestimates.

Correlates: Clients who reported a history of sexual abuse victimization at admission were more likely than other clients also to report histories of other forms of maltreatment (physical and emotional abuse, abandonment), widespread family problems, mental health disorders, and other indicators of psychological dysfunction. Admitted victims of father-perpetrated sexual abuse were especially likely to report such problems. For example, 52% of father-abused clients reported having attempted suicide one or more times, as compared to 21% of non-sexually-abused women and to 35-47% of women who were sexually abused by perpetrators other than their fathers. Sexual victimization was also associated with early onset of drug and alcohol use and with high rates of prior substance abuse treatment.

Prognostic significance: Whether and by whom clients were sexually abused prior to treatment were unrelated to RWC/PPW retention (length of stay), completion, or post-treatment outcomes. Treatment retention and post-treatment outcomes were generally impressive for clients with histories of sexual victimization, but no more so than for other clients.

Discussion

The association between sexual abuse and substance abuse among women has been well documented and widely studied. This study's findings, while based on an unusually large client sample drawn from an unusually large number of treatment sites, are not substantively unusual. They replicate previously reported findings on all topics examined. The principal conclusion is that, while debilitating sexual victimization was a common correlate of chronic substance abuse in the RWC/PPW client population, it appears not to have been a significant barrier to a successful treatment experience.

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RWC/PPW Cross-Site Evaluation
Understanding Relapse

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

The analysis summarized in this fact sheet begins with the observation that, while post-treatment relapse is uncommon among clients who remain in treatment for a reasonable period and who satisfactorily complete their treatment plans, it does occur. In some cases, such relapse may reflect the influence of addiction disease processes rooted in biological or biochemical factors not measured in this study. In other cases, relapse may be attributable to post-discharge situational, circumstantial, or personal factors that are within the purview of the study. This analysis explores whether study data may be able to account for some of the differences in relapse among clients who left treatment under seemingly favorable circumstances.

Methods

The analysis sample consisted of 529 women who appeared well-prepared to maintain post-treatment drug abstinence in an environment where relapse was possible; they: (1) received at least 90 days of RWC/PPW treatment; (2) were discharged because they satisfactorily completed treatment; and (3) were not institutionalized for 5 or more months during the 6-month post-treatment period.

The dependent variable, relapse, was defined as any reported use of alcohol or other drugs (AOD) at any time during the 6 months following discharge. Independent variables were selected from among items in the follow-up questionnaire asking about other aspects of the client's experiences since leaving treatment. The selection was limited to items that could plausibly have a causal connection to relapse. They included variables in 4 areas: (1) social supports/stresses; (2) mental and physical health problems, especially if untreated medically; (3) aftercare; and (4) education/training/employment.

Candidate independent variables were initially screened using chi square tests of association with the relapse criterion. Next, variables individually linked to relapse were combined in a regression analysis aimed at assessing their overall predictive strength in accounting for client differences in relapse status.

Factors Associated with Relapse

Overall, 106 (20%) of 526 women in this sample relapsed within the 6 months following discharge from RWC/PPW projects. Table 1 lists the independent variables that were significantly linked to relapse in the chi square tests. They include:

- Several measures of what might be called negative social supports for abstinence, especially living or associating with active AOD users after discharge;
- Untreated physical or mental health problems after discharge, possibly leading to self-medication through drugs or alcohol;
- Being employed for an extended period following discharge, a potential protective factor; and
- Receiving aftercare in the form of individual or group counseling. These last associations are in a negative direction, however, suggesting that such post-discharge treatment was more of a consequence of relapse than a preventer of it.

All variables in Table 1 were included in a logistic regression model; only those that proved to be significant predictors of relapse are shown in Table 2. The logistic regression analysis indicates that, during the post-discharge period, clients were:

- 2.75 times more likely to relapse if their live in spouse/partner used alcohol or other drugs
- 3.09 times more likely to relapse if a roommate other than a spouse or partner used AOD
- 3.32 times more likely to relapse if the client's friends used AOD in the post-discharge period
- 2.63 times more likely to relapse if the client suffered from untreated mental health problems during the post-discharge period
- 1.84 times more likely to relapse if the client suffered from depression during the post-discharge period
- 1.94 times more likely to relapse if the client received group counseling during the post-discharge period.

Table 1. Relapse Rates Associated with Post-Treatment Risk Factors		
	Relapse Rate	
Variable	No	Yes
SOCIAL INTERACTION		
Live-In Spouse/ Partner Used AOD*	17.8%	43.5%
Other Live-In Person Used AOD*	18.8%	41.4%
Friends (Not Live In) Used AOD*	17.2%	40.0%
Interpersonal Conflicts with Family*	17.6%	34.2%
HEALTH PROBLEMS		
Untreated Mental Health Problems*	17.5%	42.6%
Untreated Physical Health Problems*	18.4%	32.8%
Client Suffers from Depression*	14.5%	32.5%
AFTERCARE		
Client Received Individual Counseling*	16.6%	24.6%
Client Received Group Counseling*	16.8%	25.7%
EMPLOYMENT		
Client Worked 20+ Hours/Week for 4+ Months*	22.5%	13.7%

* p<.05; ** p<.01

Table 2. Logistic Regression Results: Post-Treatment Risk Factors Associated with Relapse		
Variable	Odds Ratio	95% C.I.
Live-In Spouse/ Partner Used AOD	2.75*	1.25-6.09
Other Live-In Person Used AOD	3.09*	1.12-8.57
Friends (Not Live In) Used AOD	3.32**	1.71-6.44
Untreated Mental Health Problems	2.63*	1.22-5.66
Client Suffers from Depression	1.84*	1.02-3.33
Client Received Group Counseling*	1.94*	1.01-3.71

* p<.05; ** p<.01

Conclusions

Many of the RWC/PPW clients who relapsed following discharge from treatment had not completed their treatment programs and, for that reason, might have been expected to have problems maintaining long-term abstinence from further drug and alcohol use. Relapse among clients who did satisfactorily complete their long-term, comprehensive RWC/PPW treatment plans was infrequent (i.e., 20%), but it is not so easily explained. One possibility, from a disease model perspective, is that these clients' addictions created powerful urges that proved irresistible to them, consistent with the view of addiction as a chronic, recurring disorder. An alternative, social model perspective might postulate that clients' life circumstances and experiences after discharge were the factors that most importantly influenced whether or not relapse occurred.

This analysis of experiential correlates of post-discharge relapse among clients who appeared to do well in treatment explored, and provided some support for, the social model hypothesis. The findings suggest that identifiable social pressures, physical and mental health problems, and other stresses and supports that clients encountered after their discharge from treatment were correlated with, and may help explain, whether or not they were able to maintain continued abstinence from further drug and alcohol abuse. These findings are far from definitive, however. A major limitation of this analysis is that, from the available data, we cannot determine the chronological sequence or causal direction of correlated post-discharge events. For example, we do not know whether living with an AOD-abusing spouse or partner was an important contributing cause of a particular client's relapse (the other person drew the client back into AOD use); or whether the relapse preceded the living arrangement. Further research is needed to provide a more precise differentiation between causes and effects.

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RWC/PPW CROSS-SITE EVALUATION

FACTORS AFFECTING POST-TREATMENT ABSTINENCE

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children.

This fact sheet describes factors associated with treatment success, defined as no alcohol or other drug use in the 6 months following discharge. The RWC/PPW outcome database of 1,181 clients from 32 projects is used in this analysis.

Cross-Site Evaluations and the Need for Mixed Models

Naturally, in the study of substance abuse treatment programs, our primary focus is on how to reduce – or eliminate altogether – drug use by way of treatment. This begs the following question: What client characteristics and treatment factors were associated with post-treatment abstinence? This question is complicated by the fact that we are looking for both project-level differences and client-level differences that are contributing to client-level outcomes. With 50 treatment projects in the cross-site evaluation – providing 50 different treatments to 50 different client populations – it can be a daunting task to tease out the incremental contributions of project-level and client-level factors in the client's treatment success.

Luckily, the field of statistics has provided a method for concurrently analyzing client-level and project-level variables in one model: hierarchical linear models (HLMs). HLMs were first developed in 1986 by Liang and Zeger, and they have provided researchers with an invaluable tool in the field of evaluation. We have employed an HLM analysis in this study of predictors of post-treatment abstinence.

Client and Project Characteristics Associated with Client Abstinence: HLM Analysis

After investigating bivariate relationships between a number of factors and post-treatment abstinence, we took those factors that proved to be significant and used them in a hierarchical linear model (HLM) to simultaneously control for project- and client-level differences. The results are presented in Table 1.

Table 1. HLM Results: Project- and Client-Level Characteristics Associated with Post-Treatment Abstinence

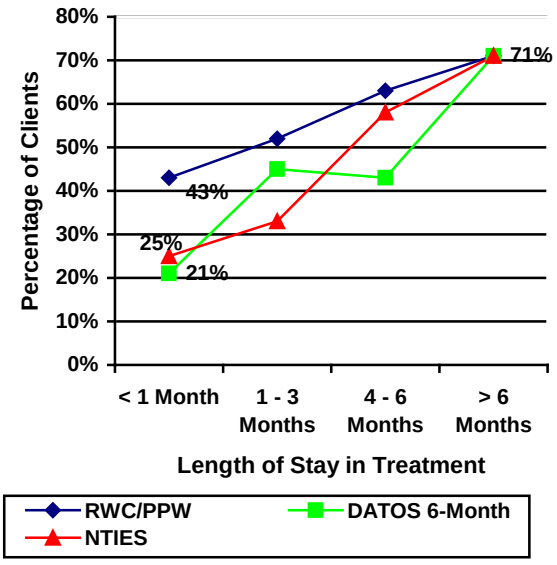
Variable	Odds Ratio	*p*
Client-Counselor Ratio, 0-8 (8+, reference group)	1.87	0.03
Methamphetamine Primary Drug Admission (alcohol, reference group)	2.22	0.01
Involved with CPS (no involvement, reference group)	0.71	0.03
Self-help groups, post-discharge (no self-help groups, reference group)	1.80	0.0001
Length of Stay in Treatment (10-day increments)	1.04	<.0001

Because the dependent variable (i.e., post-treatment abstinence) was dichotomous, we are able to develop odds ratios from our HLM model. Put simply, odds ratios describe the increased (or decreased) odds of abstinence compared to a reference group. For example, in Table 1, it is shown that clients who identified methamphetamine as their primary drug at admission were 2.22 times more likely to be abstinent than those who identified alcohol as their primary drug. In other words, methamphetamine users were more successful in their treatment than persons whose primary drug was alcohol.

It was also found that clients in projects with a low client-counselor ratio (0-8) were 1.87 times more likely to be abstinent 6-months post-discharge than clients in projects with a higher client-counselor ratio (8+). Clients who were involved with child protective services (CPS) were 29% less likely to be abstinent, and clients who were involved with self-help groups in the post-discharge period were almost two times as likely to be completely clean and sober than those who were not part of such groups.

Length of stay in treatment has consistently overshadowed all else in its predictive value of treatment success. In our HLM, we found that each 10-day increment of stay in treatment resulted in a 4% better chance of abstinence post-discharge. This may not seem like much, but considering that we are studying the effects of 6- and 12-month treatment stays, these 4% incremental differences can compound quite a few times to produce remarkably different chances of treatment success. For example, staying in treatment for an extra two months would result in a 24% increase in a client's chance of staying clean and sober, and those two months are still only a small part of the entire treatment regimen. And when clients stay for the entire planned length of stay in treatment, their chances at staying clean and sober are quite high.

Figure 1: Percentage of Clients Abstinent 6-Months Post-Tx, by Study



The cross-site programs were able to provide quite a comprehensive stabilization process especially at the beginning of treatment, but it appears that the benefits from staying in treatment also continue to accrue throughout the entire length of stay (Figure 1).

In Figure 1, we included, for reference, outcomes for women in long-term residential treatment from two other national-level studies: DATOS (Drug Abuse Treatment Outcomes Study) and NTIES (National Treatment Improvement Evaluation Study). Data from DATOS were collected on clients entering treatment between 1991 and 1993 and NTIES collected data on treatment admissions between 1993 and 1994. When broken out by length of stay, we see quite a remarkable convergence of results between the three studies. Clients in all three studies showed a significant increase in abstinence rates the longer they stayed in treatment, and all three studies had a 71% abstinence rate for clients who stayed more than 6 months in treatment

It may seem odd that only a handful of factors were predictive of treatment success. Frankly, we found this odd as well. However, we have hypothesized that a couple different factors may be working against the successful identification of predictors. First, the contribution of length of stay may be overpowering all other factors in its predictive value. Even though we have data on a large number of client background characteristics, they seem to wash out once length of stay is brought into the model. Put another way, the HLM model is piecing together the relative importance of project characteristics, client background characteristics, and client treatment experiences. It is possible that treatment experience (in terms of length of stay) simply overshadows the relative importance of the other factors. Second, the treatment model we are studying is very unique and very specific (i.e., gender-specific, long-term residential treatment), and it may be that there is simply not enough variance in the treatment experiences of both the clients and the projects to tease out significant findings.

At the most basic level, it is evident that length of stay is the single most important predictor of remaining AOD-free after treatment. Other factors may be predictive of post-treatment outcomes, but they do not nearly carry the same predictive value. More study is needed in this important area of research to fully understand the dynamics of treatment, which often cannot be easily described in a number of standardized research variables.

References

Liang, K.Y. and Zeger, S.L., 1986. "Longitudinal Data Analysis Using Generalized Linear Models." *Biometrika*, vol. 73, pp. 13-22.

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RWC/PPW CROSS-SITE EVALUATION

METHODOLOGICAL ISSUES IN FOLLOW-UP DATA COLLECTION

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for their infants and/or young children.

In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW projects. The cross-site evaluation was designed to assemble, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge. These data were collected by project staff and their local evaluators.

The 6-month follow-up was especially important to the evaluation, since it provided key evidence of the effectiveness of the program in assisting clients to overcome their drug dependencies and to achieve other positive outcomes. The follow-up also proved to be especially challenging for local project staff, particularly those at 1993 projects that had not originally planned to do such post-discharge interviewing. Ultimately, 9 projects (all from the 1993 cohort) achieved follow-up rates below 30 percent, and the overall follow-up rate was only 56 percent.

This fact sheet summarizes methodological findings and conclusions on several follow-up-related topics: whether follow-up respondents differ systematically from nonrespondents, what project procedures were associated with especially successful or unsuccessful follow-up efforts, and lessons learned for future follow-up efforts.

Client Factors Associated with Follow-up Response

From data collected at treatment admission, during treatment, and at discharge, much information was available about the characteristics of both follow-up respondents and nonrespondents. Nonresponse analyses showed that many client variables were statistically associated with likelihood of appearing in the follow-up database. Two that had especially strong associations with follow-up representation were age and discharge status (Table 1). As shown, older clients and treatment completers were most likely to be represented in the follow-up data. Length of stay in treatment was another important factor (Table 2). Clients who left treatment within the first month had the lowest response rate (37%), those who stayed 1-5 months had intermediate response rates (48-54%), and those who stayed 6 or more months had the highest response rates (64-79%). Insofar as outcome prognoses are associated with such factors, as seems likely, these findings suggest that outcomes for follow-up respondents may not be typical of those for clients in general.

Table 1. Differential Response Rates, By Client Characteristic (n=2946)

Characteristic	Follow-Up Rate
Age	
≤20	52%
21-35	56%
36-45	64%
46+	70%
Treatment Discharge Status	
Completed	74%
Transferred	54%
Quit	45%
Terminated	47%
Other	42%

Project Factors Associated with Follow-up Response

Projects were queried about their follow-up plans and procedures. As compared to projects with low follow-up rates, those with comparatively successful follow-up efforts more often:

- Routinely collected locator information from clients at admission;
- Used mail contacts to initiate follow-up;
- Had tenacious interviewers (e.g., made multiple contacts, left messages with family/friends, used secondary [arrest, credit] records, used known agency contacts such as CPS caseworkers or probation officers, etc.);
- Used financial or other incentives;
- Initially attempted face-to-face interviews at clients' homes;
- Used professional evaluators for follow-ups, rather than project staff.

Using telephone interviewers to contact and interview former clients who could not be reached in person also proved effective. The cross-site offered

such help to projects that were having especially great difficulties with their follow-up interviews. Of 197 hard-to-reach cases that were referred for this service, 105 (53%) were contacted by professional telephone interviewers, and all of them completed the follow-up interview. Incomplete or non-current locating information was the main problem encountered in this effort.

Table 2. Post-Discharge Follow-Up Rate as a Function of Client Length of Stay in Treatment

Length of Stay (Months)	Follow-Up Rate
1 and Less	37%
2	48%
3	51%
4	54%
5	50%
6	64%
7	72%
8	69%
9	67%
10	72%
11	64%
12	79%
More than 12	76%

Lessons Learned

The cross-site study nonresponse analysis reiterated the importance of obtaining a high follow-up response rate in studies where treatment effectiveness is judged from clients' post-treatment outcomes. With a low response rate, serious questions arise as to whether outcomes for respondents are meaningfully reflective of outcomes for clients in general. The following suggestions are offered to agencies responsible for funding or implementing post-discharge follow-up studies in the substance abuse treatment arena:

- *Establish follow-up design parameters and resource requirements early*. Follow-up studies are particularly resource intensive. To make adequate provision for such work, project planners would benefit from early determination of the number, timing, method, and minimal acceptable response rate for needed follow-up studies.
- *Determine central vs. local follow-up responsibilities.* For evaluations of multi-site programs, we recommend that design responsibility for follow-up studies reside centrally, with planned logistical support from individual projects in the field.
- *Focus early on follow-up instruments, authorizations, and consents.* Even though follow-up is the last thing to be done in the data collection sequence, it is one of the first things that needs to be planned.
- *Collect tracking data early and often.* This is key. Between making contact and obtaining cooperation, contact was by far the greater problem in this study.
- *Use financial incentives.* At least $20, preferably in cash, is recommended. Such incentives facilitate contact, as well as cooperation.
- *Consider sampling*. Concentrating follow-up data collection resources intensively on a comparatively small sample can generate improved data quality at reduced cost.
- *Address nonresponse in analysis.* Even with a high follow-up response rate, we recommend conducting a nonresponse analysis to identify any differences between respondents and nonrespondents. When differences are found, appropriate adjustments should be made. In this study, outcome analyses were restricted to projects that met a minimal response rate threshold, and within projects, follow-up respondents were statistically weighted to reflect the length of stay distribution of all follow-up-eligible clients (see Fact Sheet #16A for additional information).

Acknowledgments

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RWC/PPW CROSS-SITE EVALUATION

METHODOLOGICAL IMPLICATIONS OF FOLLOW-UP NONRESPONSE

Introduction

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for their infants and/or young children.

The 6-month follow-up data are crucial in that they provide the study's only basis for evaluating treatment effectiveness. When the follow-up response rate is low, however, questions arise as to whether the respondents accurately represent the post-discharge experiences of program clients as a whole. This fact sheet summarizes study efforts to assess and address this concern.

Nonresponse Analysis

Late in the cross-site data collection period, follow-up response rates were calculated separately for a number of client-level variables. Several statistically significant differences were found, using data from all 50 projects:

- **Age**: the response rate was lowest for clients under 21 (36%) and highest for those over 45 (62%);
- **Education:** clients who did not complete high school had a lower response rate (40%) than those who did finish high school (45%);
- **Number of children:** clients with no children when they entered treatment had a lower response rate (32%) than those with one or more children (42%);
- **In-treatment relapse**: clients who used drugs or alcohol while in treatment had a lower response rate (28%) than other clients (46%);
- **Completion status:** clients who completed treatment had a much higher response rate (61%) than those who left for other reasons (33%); and
- **Length of stay (LOS):** clients who left treatment within the first 30 days had a much lower response rate (24%) than those who stayed for 6 months or more (57%).

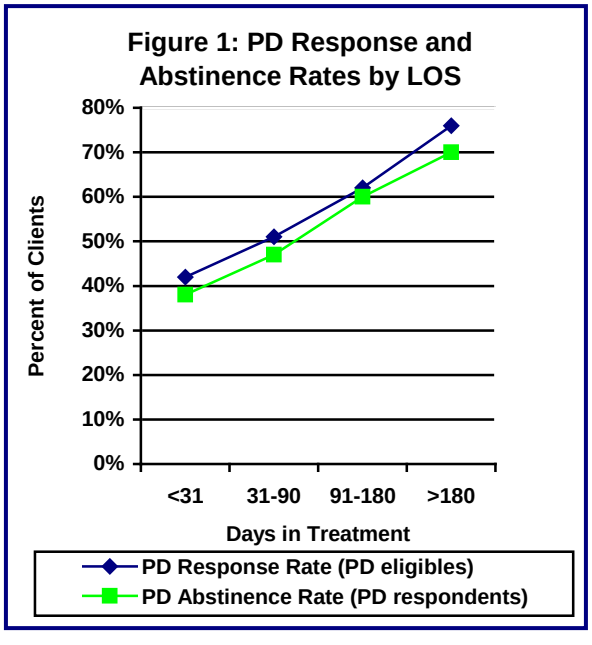
Unfortunately, among follow-up respondents, these are the same variables that are also most strongly associated with treatment success, as measured by post-discharge abstinence from drugs or alcohol. The findings suggest that follow-up respondents are not statistically representative of program clients as a whole, and that clients with the best chances for successful outcomes are most likely to be represented in the follow-up data.

Project Implications

There was great project-to-project variation in follow-up response rates, for reasons discussed elsewhere (see fact sheet #16). Eight had response rates of 80% or more, but 9 had response rates under 30%, and another 9 had response rates of 30-49%. Projects with low overall response rates consistently had extremely poor follow-up representation of their short stay clients. Ultimately, it was decided to limit all outcome analyses to the 32 projects that were able to mount a follow-up effort that produced a final response rate of at least 50% among time-eligible former clients.

Client Implications

Even among the 32 projects with comparatively high follow-up response rates, follow-up response was strongly correlated with variables that predict post-discharge abstinence. Figure 1 shows, for example, that follow-up response rate has the same strong relationship to LOS as post-discharge abstinence rate.



In an effort to compensate for the disproportionate underrepresentation of short-stay clients in the follow-up data base, nonresponse adjustment weights were created. For each project, the follow-up response rate, R, was calculated for the project as a whole [R(*T*)] and separately for each of the 4 LOS groups shown in Figure 1. For project respondents from a given LOS group, *i*, a simple nonresponse weight, W1(*i*), was defined as: 1/R(*i*). An alternative weight, W2(*i*), was defined as: R(*T*) x 1/R(*i*). Both weights have the effect of representing each project's LOS group as heavily in the follow-up data as in the project itself. With the first weight, W1, the weighted number of cases is the number of former clients who were time-eligible for follow-up. W2, the 'unitized' weight, has the same relative representation of LOS groups, but adjusts totals back to each project's actual follow-up sample size – which is important in tests of statistical significance. All outcome analyses are statistically weighted using one or the other of these nonresponse adjustment weights.

Analysis Implications

These restrictions and adjustments are useful in reducing the adverse effects of differential nonresponse in the follow-up component of the study. There are two areas of lingering concern, however:

Short-stay clients: We know that short-stay clients who responded to the follow-up study had significantly poorer outcomes than the longer-stay clients who responded to the follow-up. It also seems likely that, within LOS groups, clients who did not respond to the follow-up had poorer outcomes, on average, than the ones who responded. The nonresponse adjustment weights compensate for the first of these effects, but not for the second. The extent of the residual response bias would be expected to be most pronounced among groups with the lowest follow-up rates, i.e., those with the shortest LOS. We believe the study outcome findings for short-stay clients may substantially overstate the frequency and magnitude of positive outcomes because of systematic follow-up response bias within this group. An important consequence is that analyses that use outcomes for short-stay clients as a minimal treatment baseline against which to evaluate outcomes for longer-stay clients will understate the magnitude of the added benefit achieved from longer treatment.

Project effects: An unexpected analytic finding is that, as a group of variables, project characteristics are consistently unrelated to client outcomes. It is possible, and perhaps even plausible, that the features all RWC/PPW projects have in common are the ones that most strongly affect client outcomes, with the result that other project differences in staffing, approach, etc. are inconsequential. There are two other potential explanations, however. First, the exclusion of the 18 projects with low follow-up rates may have reduced between-project variance on important outcome-related dimensions. This would be expected insofar as there was any association between the kinds of projects that had unsuccessful follow-up efforts and those that had unsuccessful client outcomes. Second, among the projects with overall follow-up rates over 50%, all had good representation of their long-stay clients; the main difference was in how fully they represented their short-stay clients, the ones with the poorest outcomes. Projects with the poorest follow-up rates presumably benefited most from their underrepresentation of poor-outcome clients. Insofar as follow-up effectiveness was correlated with treatment effectiveness, this response bias effect may have tended to cancel out the treatment effect.

Conclusion

We end where we began, with serious concerns about the extent to which follow-up nonresponse may have introduced bias (systematic distortion) in the outcome data, compromising our ability to document treatment effectiveness or to understand factors affecting client or project differences in outcomes. The bottom-line, inescapable lesson is that follow-up nonresponse is a real problem in treatment effectiveness research, one that cannot be solved after the fact by clever analysis. The only effective way to avoid the problem is to design and conduct follow-up studies using methods that assure high response rates.

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ANALYSIS OF CENSORED OUTCOME DATA

Background

Between 1993 and 1995, the Center for Substance Abuse Treatment (CSAT) awarded a series of 5-year grants under the Residential Women and Children (RWC) and Pregnant and Postpartum Women (PPW) Demonstration Program. Twenty-six RWC projects targeted women with young children over one year of age, and 24 PPW projects targeted pregnant women and women with infants under one year of age. The distinctive feature of both programs was that they offered comprehensive, gender-specific, culturally appropriate residential treatment for women and concurrent residential care for infants and/or young children. In October 1996, CSAT initiated a national cross-site evaluation of the 50 RWC/PPW grantees. The cross-site evaluation was designed to collect, pool, and evaluate client and child data across four major time points: at treatment admission, quarterly during treatment, at client discharge, and at 6-months post-discharge.

The study questionnaires included a number of continuous variables, such as number of days using specific drugs or alcohol, where the most common response was zero. These are referred to as "censored" observations, because the dependent variable represents a limited post-discharge time period. How best to analyze such heavily censored response distributions is not entirely obvious, especially in multivariate analyses.

Ordinary least squares estimates such as analysis of covariance (ANCOVA) are often used with such data in the substance abuse literature, although they are of doubtful accuracy when applied to highly skewed distributions (biased intercepts and slopes). Logistic regression analyses of dichotomized versions of continuous variables are also frequently used; they are unbiased, but inefficient due to loss of information about extent of drug use among users.

Tobit models represent a third approach. Such models, rarely seen in the substance abuse literature, are widely used in economic research to analyze continuous variables with large percentages of cases at the upper or lower limit. Tobit models are designed to account simultaneously for (1) the probability of being censored; and (2) variability among different levels of the outcome.

This study compares results obtained using these three analytic approaches to examine factors associated with three continuous substance abuse treatment outcome measures of varying skewness: days of employment in the month before the follow-up interview (censored), days of drug use in the month before follow-up (censored), and length of stay in treatment (not censored). The sample for these analyses consists of 1,181 RWC/PPW clients from 32 projects.

Results

For the employment outcomes measure shown in Table 1, the three methods identified almost the same set of predictive variables, including child protective services (CPS) involvement, prior substance abuse treatment (SAT), therapeutic approach, length of stay (LOS), and pre-treatment employment. The Tobit model was slightly more powerful than the ANCOVA model, yielding smaller *p* values for most of the significance tests as well as larger parameter estimates.

Table 1. Factors Associated with Employment in the 30 Days Prior to the Follow-Up Interview

Variable	Tobit β*	Logistic OR	ANCOVA Δ days
Pregnant	-1.97*	0.74	-1.90*
Crack is primary drug[a]	-2.07*	0.56**	-1.85
CPS involved	-3.05**	0.62**	-2.87**
Prior SAT	3.97**	2.06*	2.81*
Therapeutic-12 step tx model[b]	-2.83**	0.49**	-2.68**
Dual diagnosis	-1.05	0.73*	0.77
LOS	0.15**	1.03**	0.13**
Pre-tx employment	3.09**	2.06**	2.76*

** p<0.01 * p<0.05

[a] Reference category for logistic regression is Other

[b] Reference category for logistic regression is Therapeutic Community

Table 2 summarizes results for the drug use outcome measure, which is also highly censored. Again, the findings for the Tobit and logistic models are in good agreement with one another. The ANCOVA results show less power than the other techniques (fewer significant associations, lower *p* values), and the pattern of associations is different. Two of the four significant predictors in the ANCOVA are not significant in the other models, and six predictors that are significant in either or both of the other models are not significant in the ANCOVA results.

LOS is not a censored variable, so only Tobit analysis and ANCOVA are performed on this dependent variable. As shown in Table 3, both models detect an identical set of significant variables with only slight differences in the magnitude of coefficient estimates and *p* values for the significance tests.

Implications of this Study

This study suggests that Tobit analysis and logistic regression are superior to ANCOVA for data with a high proportion of censored cases, since Tobit and logistic analyses generate consistent results while ANCOVA appears to lack statistical power. Moreover, the assumptions of ANCOVA tend to be violated for data with large amount of censored cases, which compromises the statistical validity of the conclusions. For dependent variables without a censoring problem such as LOS, Tobit analysis performs as well as ANCOVA with respect to the detection of significant predictors.

Table 2. Factors Associated with Drug Use in the 30 Days before the Follow-Up Interview

Variable	Tobit β*	Logistic OR	ANCOVA Δ days
African-American[a]	-1.05**	0.53*	-0.94
Native American[a]	-0.51	1.24	-1.76*
Cocaine[b]	0.70	2.05*	0.33
Crack[b]	1.12**	2.15**	0.87
Alcohol[b]	0.90	1.92*	0.90
Transitional housing	-1.14**	0.44**	-0.91
Self-help groups	-1.33**	0.40**	-1.97**
Family visited	-0.95**	0.58**	-1.53**
LOS	-0.02	1.00	-0.05*
No. of children with mother	-0.35**	0.83	-0.33

** p<0.01 * p<0.05

[a] Reference category for logistic regression is White

[b] Reference category for logistic regression is Other

Table 3. Factors Associated with Length of Stay

Variable	Tobit β*	ANCOVA Δ days
Pregnant	30.92**	36.00**
Dual diagnosis	23.59**	24.14**
Therapeutic-12 step	-52.30**	-67.12**
Therapeutic-individualized	-67.80**	-72.31*
Therapeutic-cognitive	-26.49**	-35.68**
Neighborhood	-42.83**	44.39**
RWC/PPW	16.87*	29.80**
Age	2.37**	3.27**
With children	63.22**	77.54**

** p<0.01 * p<0.05

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