Project Purpose

The intent of the project, entitled “Cooperative Agreements for the Development of Comprehensive Drug and Alcohol Treatment Systems for Homeless Persons,” was to increase the effectiveness of services for homeless consumers with co-occurring disorders through a modified assertive community treatment (ACT) model utilizing key components of integrated treatment in combination with a stagewise approach. Foundations Associates (FA) proposed using a multidisciplinary team of members with MH/SA experience, in addition to expertise in housing, both vocational and rehabilitation, outreach, and peer support, to improve program efficacy for the Davidson County homeless, dually diagnosed population. The project assessed efficacy in reducing societal costs, such as emergent care and incarcerations, as well as project impact in reducing decompensation/relapse cycles and improving quality of life.
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Background/Project Implementation

Foundations Associates, the project site and a premier specialist in integrated dual diagnosis treatment with an emphasis on intensive case management, proposed creating a team with a unique blend of specialized expertise that could be utilized to seamlessly provide services for this grossly underserved population of homeless dually diagnosed consumers. The core intervention was built around an assertive community treatment (ACT) model, modified to provide tailored integrated services to individuals with co-occurring disorders. The modified ACT model adopted major characteristics of integrated treatment including assertive outreach, motivational enhancement, stagewise/readiness to change approach, counseling and support, and long-term and comprehensive interventions. The evaluation utilized an experimental design with sequential assignment to describe treatment processes, and selected clinical outcomes associated with “Dual ACT” (DACT) model versus case management (CM) services that were previously administered in the community with little accommodation for co-occurring disorders.

The project was implemented on March 11, 2002 at Foundations Associates. FA created additional IOP groups, individual therapy sessions, and after care support groups to meet the needs of the population. Foundations also established an agreement with Maxwell Pharmacy to provide free medication on an interim basis for indigent consumers until they enrolled with TennCare (Medicaid). In addition, FA’s Marketing and Community Relations Coordinator developed and implemented an on-going community outreach program to promote FA’s programs to private insurance companies, private and state facilities, and local faith based agencies.

The grant approval process required by the Nashville Metro government, the hiring of experienced staff, and facility relocation all acted as significant implementation barriers. Additional implementation barriers were created by the sheer number of participants entering the program (larger than expected participation) as well as facilitating their subsequent six-month follow-up interviews.
Operational Phase – Year One

A summary of key events occurring during implementation and year one were as follows:

Staffing

- All project positions were filled within 4 months of program implementation, including: an Outpatient Program Clinical Director, Case Manager Supervisors, two Outpatient Therapists, two Case Managers, and a Research Associate (John Seiters). Additional staff hired in the first year included: Medical Records personnel, additional Case Managers (7 total), a Research Associate, a Family Therapist (Clinical Psychologist), a Nurse Practitioner, a Vocational Services Coordinator, and a Community Relations Coordinator.
- FA increased the utilization of student interns and trainees to expand capacity for low cost services.

Administrative

- Program implementation began with the first GPRA baseline assessments completed on March 11, 2002.
- FA relocated to Metro Center. In addition to providing expanded physical space, the agency site is strategically located within 3 miles of two large community behavioral health centers and offers increased access specifically to key agencies serving homeless populations.
- Project exceeded capacity goal set in the grant proposal.
- Intake GPRA data was collected on all 243 consumers admitted to TCE services. Sixteen (16) follow-up assessments were completed on 19 consumers who had completed their follow-up window, for an overall 6-month follow-up percentage of 84%. No 12-month assessments were due.
- Case management facilities were renovated to expand from 12 to 16 cubicles to accommodate staffing growth.

Treatment

- Intensive Outpatient Services (IOP) filled 4 groups to capacity, with an average daily attendance of 10-14 consumers (per group). In order to meet additional demand, a new IOP group was added.
- Case management services were expanded beyond the original scope of the grant. Seven (7) case managers were employed during year one. 135 consumers enrolled in case management services in the first year of the project.
- Foundations started additional Level I outpatient groups, meeting one time per week. Topical groups included anger management and gender issues in recovery (men’s & women’s groups).
- Additional expansion efforts included limited individual therapy services and two aftercare groups. A weekly Medication Management group for consumers was implemented by the new Nurse Practitioner.

Education & Training

- Foundations Associates hosted a series of statewide forums on the status of dual diagnosis services and needs in the state. The “Task Force on Co-occurring Disorders” was facilitated
by Foundations Associates’ Dual Diagnosis Recovery Network division to evaluate service and treatment barriers for people with co-occurring conditions in various regions of the state.

- Tom Doub, Pamela Clark, and Robert Walker, CSAT evaluators from TN, OR, and KY, respectively, and members of the COFD cluster group, presented preliminary cluster data findings at the 2002 MISA conference in Lancaster, PA in April of 2002.
- John Seiters, Research Associate, attended ACS/B&D training on follow-up tracking and methods in Silver Spring, MD on 3/20/02.
- Foundations Associates hosted a National Conference on Co-Occurring Disorders “Building The Bridge” in San Antonio, TX in March of 2002. Speakers at the conference included project staff Michael Cartwright and Tom Doub, as well as national leaders such as Lewis Gallant, Kenneth Minkoff, Norman Hoffman, and Scott Miller. Foundations produced similar conferences in Atlanta, GA (May), Baltimore, MD (August), and Las Vegas, NV (September).
- Frances Clark, Director of Mental Health and Substance Abuse Services from Nashville’s Metropolitan Health Department, and Dr. Thomas Doub, Project Evaluator, gave a collaborative presentation at Foundations’ National “Building the Bridge” Conference in Las Vegas, NV on September 18, 2002. They reviewed clinical strategies for assessment of co-occurring disorders in a presentation entitled, “Assessing for Success: Real-World Strategies for Integrated Assessment.”
- All project staff participated in a comprehensive structured orientation program that included education on agency philosophical tenants, DiClemente’s stages of change transtheoretical model, crisis intervention, supportive therapy, substance abuse, counseling skills, medication monitoring, and family outreach.
- Ongoing training sessions were scheduled for all project staff, including training by national experts such as Scott Miller and Kim Mueser, as well as local experts and FA’s staff. Training topics included motivational interviewing, basic counseling skills, dual disorders, ASAM, and research outcomes.
- A comprehensive training program was developed to provide ongoing (weekly) professional development opportunities for all staff.

**Evaluation**

- Evaluation staff developed an auditing process with program intake staff to ensure timely and accurate GPRA data collection. Research assistants began to generate intake numbers and report any incomplete or inconsistent research data collection in an effort to troubleshoot potential problems.
- In response to formative evaluation findings showing a loss of some consumers between intake assessment and treatment services, intake department staff intensified their efforts to facilitate engagement and seamless transition into services. Intake staff followed-up on all new consumers referred for services and contacted consumers who failed to show for services.

**Marketing/Sustainability**

- There was regular attendance at community based events such as the monthly behavioral health consortium, alcohol and drug council meetings, and related events.
- Jami Grich, Ph.D. and Jessica Samford, Vocational Rehabilitation Specialist, submitted a grant to the TN Department of Human Services to expand/enhance VR services for Foundations’ consumers.
- Drs. Doub and Grich wrote a CMHS Jail Diversion grant to expand Foundations’ Memphis operations.
- Paul Citro, Marketing and Community Relations Coordinator, expanded Foundations’ partnerships with private insurance vendors. Mr. Citro increased community awareness of FA’s services for dually diagnosed consumers. He continued to build FA’s referral base, identifying consumers in the community who needed Foundations’ services, and generating new contractual relationships.
- Foundations established an agreement with Maxwell Pharmacy to provide free medication on an interim basis for indigent consumers until they were connected with TennCare (Medicaid).

**Challenges**
- The most significant challenges included: completing the grant approval process required by Metro government, completing the contract approval process, hiring of new staff, and facility relocation.
- Given our March initial enrollment date, a substantial number of consumers entered their six-month follow-up window in August and September. Due to the larger-than-anticipated number of consumers served, FA struggled to keep up with the large numbers of consumers requiring research follow-up. FA was able to sustain an 80% follow-up criterion throughout the first year.
- FA experienced difficulty getting timely reimbursement from TennCare (Medicaid) for services provided.

At the end of year one, various marketing efforts were made to expand the project’s capacity to serve the target population. Senior management staff: (1) applied for a vocational rehabilitation grant from the TN Department of Justice to expand and enhance FA’s vocational rehabilitation services, (2) applied for a CMHS Jail Diversion grant to expand Foundations’ Memphis operations, and (3) developed partnerships with private insurance vendors to further diversify and strengthen Foundations’ funding streams. Foundations expanded outpatient services by partnering with the University of Tennessee, School of Social Work in utilizing LCSW student interns to increase capacity for low cost service provision and to meet the growing demand for additional staff. Foundations set into motion an on-going “in staff” training program to develop, maintain, and raise the bar on staff competencies in regard to integrated care.

Community education and marketing endeavors were heavily emphasized in the first year of the project to broaden community awareness of the impact of co-morbidity and the importance of local partnerships in treating the homeless co-morbid population. Foundations Associates, through its Dual Diagnosis Recovery Network, continued to produce national and statewide
conferences, publications and an anti-stigma campaign to increase local and national awareness of the underserved dually diagnosed population.

**Operational Phase – Year Two**

Community awareness of the project was building, program participation exceeded expectations, and additional specialty outpatient focus groups were created to address unmet community service needs. In year two, the program was fully operational with a staff including multidisciplinary clinical professionals such as psychiatrists, psychologists, clinical social workers, alcohol and drug abuse counselors, and cross-trained mental health professionals.

Agency efforts continuously strived to develop a culture that reinforced the strengths of multiple disciplines and encouraged “out of the box” treatment paradigms. Foundations remained committed to quality by creating an agency wide Quality Assurance Committee, responsible for overseeing the AdvoCare audit, and by designing and implementing a new management tracking system for vocational rehabilitation referrals as well as job placement contracts used to determine program efficacy.

Key activities occurring during the second year of operations were as follows:

**Staffing**
- Additional staff hired in year two of the grant included the following: a Medical Records Co-coordinator, four Case Managers, a Vocational Rehabilitation Assistant, a Research Assistant, and a Nurse Practitioner.
- Tom Doub, Evaluator for this grant, resigned from his role with Dual Diagnosis Management. His protégé, John Seaters, assumed responsibilities for coordinating evaluation follow up activities. Mr. Seaters had worked directly for Dr. Doub as an evaluator and had experience supervising grant evaluation staff.
- Dr. Lisa Webb-Robins was hired as the Director of Research and Development for Dual Diagnosis Management effective September 15th, 2003.

**Administrative**
- Intake GPRA data was collected on all 699 consumers admitted to TCE service.
- Case management services were added beyond the original scope of the grant. At year end, 11 case managers were employed with 833 consumers enrolled in case management services.
- Foundations Associates implemented an agency wide Quality Assurance Committee to meet on a monthly basis, whose primarily focus was to prepare for the upcoming AdvoCare SSOC Audit.
- FA obtained credentialing approval for all case managers from AdvoCare, the behavioral health care organization.
- FA implemented a monitoring tool for closer tracking of vocational rehabilitation referrals and job placement contracts to improve financial sustainability of vocational services.
- As a result of Foundations’ cultural competency meetings, program and agency literature were made available in Spanish. The agency-wide cultural competency and readiness survey helped in the development and implementation of a plan to enhance Foundations’ responsiveness to diverse cultures.

**Treatment**
- FA continued to operate 5 IOP groups throughout the day. Two of these met at 9:00, one at 12:30, one at 2:30, and one at 5:30. TCE grant-funded consumers were free to attend the group most convenient for them. This more than doubled capacity projections outlined in the original TCE application (which proposed a total of two groups).
- FA implemented Specialty Outpatient Groups that were created through a series of focus groups with both consumers and providers who identified unmet community service needs.
- Dual Recovery Network continued to provide the community with self-supported, self-run educational services.
- FA’s Vocational Rehabilitation services expanded to accommodate over 50 enrolled consumers, by adding an extra staff member.

**Education & Training**
- FA sponsored conferences in Orlando, FL (August 5th-7th), and in Arlington, VA (June 10th-12th), on co-occurring disorders.
- Key clinical staff conducted training entitled, “Improving Compliance with Case Management” at Ridgeview Mental Health Center on July 10th, 2003.
- Key clinical staff conducted a series of focus groups with both consumers and providers to identify unmet community service needs.
- In keeping with proposed grant objectives, FA completed and published eight modules to be used in the IOP groups and circulated nationally.
- Evaluator Dr. Doub was invited to present at a luncheon meeting of Tennessee State University’s Psychology Club to discuss careers in research, and the importance of community-based research.
- Foundations held its 4th Tennessee Conference on Co-Occurring Disorders at the Opryland Hotel in Nashville, TN, from March 17-19th.
- FA continued to provide a wide variety of training seminars to all staff and offer specialized training to other agencies.

**Evaluation**
- FA continued to maintain an 85%-95% follow-up percentage despite the dramatic increase in the number of participants projected (already exceeded our three-year program target enrollment in year two).
- An outpatient audit was completed by AdvoCare reflecting positive outcomes.
- 387 six-month follow-up assessments were completed on 442 consumers for an overall 6-month follow-up percentage of 88%.
210 twelve-month follow-up assessments were completed on 229 consumers for an overall 12-month follow-up percentage of 92%.

**Marketing/Sustainability**
- FA received a contract for vocational services from the Department of Rehabilitation with the intent to provide job placement services for individuals receiving treatment for SA/MH. In addition, vocational rehabilitation services became billable under the case management contracts, expanding capacity to provide job placement and supported employment services.
- The Clinical Director and Intake Staff Supervisor introduced FA’s expanded outpatient service programs to local service community agencies.
- Agency representatives attended the National Coalition of Black Churches Summit meeting held in Memphis and participated in planning to enhance Faith Based Initiatives in the Memphis community.
- FA collaborated with over 50 statewide alcohol and drug (A&D) providers and mental health providers, along with the DMHDD and the Bureau of Alcohol and Drugs on the COSIG proposal. Foundations prepared the proposal on behalf of the statewide plan developed through this collaboration.
- Agency representatives appeared on a local cable network (Channel 5) broadcast called Urban Outlook to discuss co-occurring disorders and resources for services.
- Case management collaborated with NARA and the A&D council helpline to establish strategic alliances with other local agencies.

**Challenges**
- FA’s greatest challenge continued to be transitioning TCE funded services to other funding sources, such as Medicaid funds, to provide the same level of services for Nashville’s indigent populations after the project ended on September 30th, 2004.
- TennCare in the second year of the grant remained in a precarious state due to economic concerns.
- Difficulties were encountered with the records department due to rapid growth. New policies were established and implemented.

At the close of year two, the most significant achievement of the project was Foundations’ ability to obtain and retain program participation, despite the challenging nature of the population. Foundations Associates was able to complete 6-month follow-up interviews at an 88% ratio, and 12-month follow-up interviews at a 92% ratio. With the higher than expected program participation, increased staff size, and the complexity of services, Foundations remained committed to offering regular staff training on motivational enhancement techniques, DiClimente’s *stage-wise* approach, psychopharmacologic treatments, and other cross training techniques and topics necessary to appropriately treat the homeless dually diagnosed population.
Operational Phase – Year Three

The third year of services focused on program sustainability by exploring various venues of new funding to serve consumers unable to pay for services. Preliminary outcome data was suggestive of strong positive long-range outcomes for program participants, as well as an increased awareness, both locally and nationally, of the societal issues and barriers faced by the homeless and dually diagnosed population.

Foundations successfully completed the CARF audit with an outcome of three-year CARF accreditation. FA expanded efforts to serve the target population by finding ways to minimize drop-out rates and increase consistent attendance at IOP groups. In addition to the motivational techniques already mentioned, FA also submitted a formal Robert Wood Johnson Foundation full proposal after being selected from a pool of potential applicants. The purpose of the grant "Paths to Recovery: Changing the Process of Care for Substance Abuse Treatment" is to increase retention of consumers through reducing no-shows and length of time from first contact to first treatment, and by increasing treatment continuation and admissions.

Key activities occurring during the third year of operations were as follows:

Staffing
- Positions hired in year three are as follows: a Research Associate, two Outpatient Therapists, a Medical Records Assistant, a Vocational Case Manager, an Outpatient Program Clinical Director, and a part-time Data Collector.

Administrative
- All new outpatient staff members were successfully credentialed and underwent significant training.
- Foundations Associates successfully completed a Commission for Accredited Rehabilitation Facilities (CARF) audit and was awarded three-year CARF accreditation during year three of the project.
- Foundations Associates continued to have Quality Assurance Committee meetings on a monthly basis.
- Chart review completed the final preparation to transition out of grant funded services by September 30, 2004.
- FA implemented an agency-wide database to capture all service utilization, including dates of service, type of service, enrollment/discharge dates, and reason for discharge.
- New discharge, treatment plan, and progress notes policies and forms were implemented.
- Report formats were standardized across all agency programs.

Treatment
- FA began utilizing motivational incentives to increase regular IOP attendance.
- FA continued to operate 5 IOP groups throughout the day.
- FA continued to employ 11 case managers.
- Newly implemented policies, that closely monitored program attendance, increased the consistency of group census.

**Education & Training**
- All outpatient staff continued to benefit from a well-planned, comprehensive training plan developed in collaboration with DDRN.
- Michael Cartwright, FA Executive Director, attended the February grantee meeting in Washington, D.C. to present experiences gained/lessons learned through our “Expansion of Integrated Dual Diagnosis Outpatient Services” collaborative project with Metro Health Department and Foundations Associates.

**Evaluation**
- Six hundred forty six (646) six-month follow-up assessments were completed on 740 consumers for an overall 6-month follow-up percentage of 87%.
- Four hundred sixty one (461) twelve-month follow-up assessments were completed on 513 consumers for an overall 12-month follow-up percentage of 90%.
- Outpatient staff implemented FA’s Integrated Treatment modules and provided real-time, ongoing feedback for future module development.
- Preliminary data indicated success of project services across all domains. In terms of specific program outcomes, further detailed analysis was needed (Final Grant Report).
- FA implemented new policies that closely monitored program attendance and greatly increased consistency of group census.

**Marketing/Sustainability**
- FA continued to explore venues for new funding sources that would allow the agency to continue serving a large number of consumers unable to pay for services.
- FA’s Director of Marketing continued to present program services to area service providers, hospitals, jails, and other area agencies.
- Program staff continued to promote national sales and distribution of FA’s IOP Modules.

**Challenges**
- The greatest challenge continued to be transitioning TCE funded services to other funding sources, such as Medicaid funds, to provide the same level of services for Nashville’s indigent populations after the project ends September 30th, 2004.
- As FA enrolled more unduplicated consumers than originally projected, it became difficult to keep consumers engaged in IOP groups through graduation. New policy and procedures were implemented to improve retention.
Program Description

The core intervention was built around an assertive community treatment (ACT) model, modified to provide tailored integrated services to individuals with co-occurring disorders (a specialty of Foundations Associates). The program proposed specific, theory based adjustments to the ACT model intended to increase effectiveness of services for homeless consumers with co-occurring disorders. The experimental model adopted major characteristics of the ACT framework including the following program elements.

ASSESSMENT

Assessment constituted the core of early intervention. Ongoing accurate assessment guided treatment decisions, monitored changes over time, revealed new and additional service needs, and allowed for program evaluation and research. Assessment domains and procedures were routinely examined in sufficient detail to allow clinicians and FA’s evaluation team to determine program efficacy.

One key aspect of FA’s assessment model is that primary assessment responsibility lies in the hands of a clinician as opposed to alternative models that distribute intake assessment responsibility across several staff. The consolidated approach serves to maintain a high level of consistency across assessment and ensures that intake assessments are conducted by a clinician with experience assessing both the severity of substance use and the extent and nature of co-morbid mental health conditions. The intake responsibility was centralized to two admissions’ counselors who administered all core assessment materials used for clinical evaluation (and research), generated summary reports, and made appropriate referrals for other needed clinical assessments (e.g., psychiatrist, psychologist, or other specialist).

A group of assessments were selected with established reliability and validity in populations similar to that served by Foundations Associates, i.e., predominantly individuals with substance dependency conditions and serious mood or thought disorders. The complete protocol included elements of both clinician-report and self-reports, in order to minimize the impact of biases on the part of the clinician or the consumer. Accommodations were made as needed to the basic assessment package, depending on the presenting needs of the consumer and with particular sensitivity to diagnostic severity, reading level, special needs or disabilities, and cultural considerations.
Non-standardized protocols were developed to achieve two ends:

- **Operationalize ASAM PPC-IIR measures to facilitate decision-making regarding placement.** This included application of the ASAM crosswalk and development of specific criteria that defined medical necessity standards for each level of the Foundations’ continuum of care, and;

- **Provide depth to the psychiatric portion of the evaluation to offer a platform for integrating treatment elements.** This included an in-depth interview regarding the consumer’s family of origin, behavioral health and substance dependency treatment history, prior traumas, behavioral trends, psychiatric symptomatology, and psychopharmacologic treatment history.

Assessment components included:

1) **Prescreening** (completed by referring agency or administrative staff)
   - Brief Referral Form with succinct diagnostic and treatment history
   - Consumer completed ASI, BSA, LSI-R, Urine Toxicology, GPRA, and URICA.

2) **Intake Assessment**
   - Comprehensive Psychosocial Interview: treatment history; multiaxial DSM-IV diagnostic assessment; mental status examination; assessment of contributing factors, including: social/family/peer concerns, legal, cultural, spiritual, vocational, housing, abuse, and other consumer-specific issues; information from collateral informants; Release of Information; eligibility for public assistance.

   - Standardized assessment battery: Addiction Severity Index (ASI), Brief Symptom Inventory (BSI), Treatment Services Review (TSR), Co-Occurring Functional and Disorders (COFD) Assessment Scale, Triage Assessment for Addictive Disorders (TAAD), Quality of Life Questionnaire (CA-QOL), URICA Change Assessment Scale, and SF-12 Health Survey.

   - American Society of Addiction Medicine (ASAM) PPC-IIR Multidimensional Assessment

   - Initial Treatment Planning Recommendations
3) Psychiatrist Assessment

- Psychiatric interview and review of previous assessment materials
- Diagnostic Impressions (multiaxial DSM-IV)
- Need for pharmacotherapy
- Assessment of acute intoxication/withdrawal risk
- Evaluation of comorbid medical conditions
- Review of Treatment Planning Recommendations

4) Psychologist or other Specialized Assessment (as needed)

- Objective or Projective Psychological Testing
- Laboratory Tests (Serum or Urine Toxicology)
- Vocational Assessment
- Nursing Assessment
- Case Management Assessment; need for collaborative services
- Referrals for additional assessment as needed

The assessment process was used to determine the consumer’s appropriateness for Foundations’ integrated Dual ACT (DACT) program. If a consumer was deemed a poor match for Foundations’ DACT or case management (due to housing status, a single diagnosis, poor fit with individual treatment needs, or recommendation for another level of care), the appropriate referral was expedited.

Staff training emphasized that assessment is frequently the first opportunity for an agency to effectively engage the consumer and begin a positive therapeutic relationship. Intake assessment personnel were encouraged to build immediate positive rapport with the consumer and, as a representative of the program, work toward an empathetic bond of trust and empathy.

The intake assessment is only the first step in an ongoing assessment process, in which clinicians continually collect information about the consumer in order to tailor treatment more effectively to individual needs. It is understandably difficult to elicit a comprehensive diagnostic description and problem summary during a brief intake assessment session in which initial rapport must also be established.
PROGRAM ELEMENTS

Prior to the project, Foundations Associates provided intensive case management (ICM) services to the homeless, dually diagnosed population. The case management services were loosely based upon an ACT framework. Foundations made modifications to their intensive case management program to specifically meet the various needs of the subpopulation. The newly modified DACT program provided several distinct categories, including (1) crisis stabilization, (2) integrated case management, (3) staff specialization, (4) reduced caseloads, (5) continuum of care, and (6) adoption of integrated care philosophies.

Crisis Stabilization

Admissions to crisis stabilization typically result in a 72-hour stay to stabilize psychiatric or substance abuse symptoms and/or medication adjustments for individuals at acute risk for inpatient psychiatric care. The goal of this program was to provide interim crisis services until the individual was stabilized and the level of services could be reduced through structured residential and aggressive pharmacologic treatments. Once stabilization occurred, the consumer was linked to community services or placement, or as appropriate, enrolled in Foundations’ continuum of services. Crisis services included 24-hour staff supervision, regular monitoring by a psychiatric nurse specialist, and ongoing evaluations by a psychiatrist, with on-call 24-hour response by medical and clinical staff.

Integrated Case Management (Traditional)

Case management plans were established at admission to evaluate the life domains of mental health, physical health, vocational/educational, financial, and housing/life skills. Each consumer was assigned a primary therapist to coordinate care planning. Service matching was determined through the assessment process, and the individual was directed either to ICM or DACT. FA’s case management program provides individualized support focusing on improved self-sufficiency, supportive counseling, and crisis intervention. Consumers not participating in the DACT program were assigned to Foundations’ ICM.

Staff Specialization (DACT Program)

ACT research has shown that specialists within a multidisciplinary team provide an effective model for peer-education and exchange of knowledge. FA’s traditional ICM framework utility of
generalist case managers was replaced in the DACT program with a community-based multidisciplinary team with varying areas of specialization (addictions, mental illness, housing, vocational, advocacy outreach). All team members were expected to maintain caseloads and address consumer needs across clinical domains. DACT staffing included: a psychiatrist, a psychiatric nurse, a DACT Team Supervisor, two licensed Alcohol and Drug Counselors, a Vocational Rehabilitation Specialist, a Housing Specialist, a Homeless Outreach Specialist, and a Consumer Paraprofessional.

Reduced Caseloads (DACT Program)

Traditional intensive case management caseloads are often as high as 40:1. The DACT program sustained a caseload of approximately 15:1. The rationale behind the reduced case load was to enhance FA’s ability to address the complex and varying needs of the homeless, dually diagnosed population.

Continuum of Care (DACT Program)

To address the varied needs of homeless consumers, Foundations created a comprehensive system of services to help homeless individuals reach their personalized goals by offering a three-tier treatment model. This system and philosophy strove to fulfill those requirements with three fundamental components: (1) DACT + Residential, (2) DACT + Outpatient, and (3) DACT only. Foundations offered fully integrated residential and outpatient services as clinically indicated by ASAM while the consumer remained linked to the DACT team in order to maintain a seamless continuum of care. The continuum of care approach met the integrated philosophies of stage-appropriate care and comprehensiveness of care required in the principles of integrated treatment.

“DACT” Team Approach

A primary program goal of Foundations was to provide substance abuse and mental health ACT within a single team to enhance the effectiveness of typical arrangements in which services were delivered by a variety of agencies without close coordination. Foundations developed a dedicated multidisciplinary team of members with a history of working with adults with mental illness and addictions, including those with additional specialties related to vocational rehabilitation, housing, and psychopharmacology. Recruitment emphasized members who were racially and culturally diverse and experienced in treating both disorders, with a least one
member in either/both psychiatric and substance abuse recovery to function as the peer specialist on the team.

**Adoption of “Integrated” Principles**

In conjunctions with the ACT model, Foundations adopted specific principles of integrated care outlined by Drake et al. They are as follows:

**Assertive Outreach – Engagement and retention of consumers**
Assertive engagement and provision of intensive case management was needed to first address basic needs of consumers and to develop trusting relationships prior to engagement in formal treatment. Ongoing and assertive outreach in community and home settings helped to engage and retain consumers in FA’s program.

**Stagewise Models – Tailored interventions to a consumer’s stage of treatment**
Intensive and ongoing team education regarding stages of change and recognition of a nonlinear model driven by the consumer’s readiness to change, allowed FA staff to tailor interventions to a consumer’s stage of treatment. FA staff were also trained in the application of the techniques of engagement, persuasion, active treatment, and relapse prevention.

**Motivational Interventions -Based on readiness to engage**
The incorporation of motivational interventions was designed to promote the consumer’s readiness for more definitive interventions.

**Counseling – Support in either an individual, group, and/or family format**
The matching of counseling needs with the appropriate forms and formats for consumers was another principle adopted by Foundations. The following formats and forms were available:
- Group, family, and individual counseling applying motivational interviewing techniques;
- Service clusters with FA’s integrated outpatient and residential program, utilizing ASAM PPCII-R standards to match treatment with needs;
- Where consumers were using FA’s services, FA’s treatment staff was included as co-members of the DACT team.

**Social Support Interventions -Encouraged development of healthy social networks**
Foundations staff worked to strengthen the immediate social environment of consumers to facilitate modification of behavior and recognition of the role of the social network in dual diagnosis recovery. To this end, FA provided:

- Outreach efforts that include family education.
- Engagement in 12 step recovery meetings.
- Use of NAMI bridges programs (currently being facilitated).
- “Side by side” approach to goal attainment; consistent group psychoeducational programs.
- Regular DACT social outings to promote support building.

**Long-Term Perspective - Recovery often takes place over a period of months or years**

Having a long-term community based perspective that includes rehabilitation activities helped to prevent relapses and enhance gains. It included trying to:

- Maximize retention rate for participants.
- Using assertive re-engagement efforts.
- Application of non-punitive responses to psychiatric or substance related relapse.

Foundations recognized that most dually diagnosed consumers have little readiness for abstinence oriented treatment and incorporated a harm reduction model with long range abstinence goals.

**Comprehensiveness - Different levels of care combined with housing, vocational, and other collaborative services**

Attention to substance abuse and mental illness was integrated into all aspects of the program:

- Integrated assessment, treatment, and service processes.
- DACT team comprised of staff with expertise in mental health, substance abuse treatment, housing, vocational rehabilitation, and outreach, all of whom integrate efforts and share service initiatives.
- Practical community-based application of life skills by DACT members with consumers.
- Where external services were required (e.g., inpatient or community), providers were engaged as co-team members.

**Cultural Sensitivity and Competence - Engagement with diverse populations with interventions tailored to various group characteristics**

Foundations tailored services to racial, cultural, and other group characteristics:

- Initiatives were created to recruit ethnically and culturally diverse DACT members, including members in recovery as peer specialists.
- Provided gender appropriate assessment and intervention to deal with trauma and victimization issues.
- Created advisory and implementation committees that included consumers and consumers’ family members.
- Developed supports which accentuate extended kin systems and maintain valued features of client cultures.
- Attended to ethnicity and cultural complexities at admission, in evaluations, through treatment planning, and in all services.
- Incorporated family expectations, cultural themes, community ties, customs and traditions, levels of acculturation, and ethnic identity as part of the treatment process.
- Utilized non-confrontational approaches and based services upon the client’s position within his/her culture and community.
- Conducted ongoing DACT trainings/meetings with themes of sensitivity to culture, gender, age, sexual orientation, and other unique consumer issues to ensure competencies were maintained.
- Used role modeling and mentoring, for engagement with clients of various cultures who are at various levels of recovery.
EVALUATION

EVALUATION DESIGN

The overall research plan was to assess the experimental “DACT” group and compare its outcomes to a treatment-as-usual (TAU) condition, in which traditional, community-based intensive case management (CM) services were provided. The research design was structured to examine the impact of ACT and ICM services on consumer outcomes (e.g. homelessness, employment, substance use, psychiatric symptoms, criminal justice involvement, and service utilization) through the use of a nested longitudinal design. Consumers were nested within treatment and comparison groups. The design was intended to meet two objectives - first, to verify the extent to which treatment services were implemented as proposed (program fidelity), and secondly to evaluate outcomes in multiple domains while collecting descriptive/demographic information, and assessing motivational readiness to change. Data collection occurred at baseline, 6 month, and 12 month intervals. All interviews were conducted by staff experienced in clinical assessment. Based on statistical power analyses, the project sample size was set at 300 participants, which was exceeded in the second year of the project.

Table 1

<table>
<thead>
<tr>
<th><strong>KEY EVALUATION DOMAINS</strong></th>
<th><strong>DATA TYPE</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Descriptive Information</strong></td>
<td>Demographic data (age, sex, race/ethnicity)</td>
</tr>
<tr>
<td></td>
<td>Homelessness/Housing Instability</td>
</tr>
<tr>
<td></td>
<td>Substance use; Psychiatric symptomatology; contributing social or medical problems</td>
</tr>
<tr>
<td></td>
<td>Previous service utilization</td>
</tr>
<tr>
<td><strong>Process Information</strong></td>
<td>Total # of consumers served</td>
</tr>
<tr>
<td></td>
<td>Services provided (type &amp; dosage)</td>
</tr>
<tr>
<td></td>
<td>Referral source</td>
</tr>
<tr>
<td></td>
<td>Collaborative use of community agencies/resources</td>
</tr>
<tr>
<td></td>
<td>Service Gaps/Needs</td>
</tr>
<tr>
<td><strong>Key Outcomes</strong></td>
<td>Substance Use/Dependence</td>
</tr>
<tr>
<td></td>
<td>Homelessness/Housing Instability</td>
</tr>
<tr>
<td></td>
<td>Mental Health Symptomatology</td>
</tr>
<tr>
<td></td>
<td>Motivational Readiness</td>
</tr>
<tr>
<td></td>
<td>Qualitative outcomes assessment</td>
</tr>
<tr>
<td><strong>Cost/Benefit Analysis</strong></td>
<td>Funding sources, expenditures, costs</td>
</tr>
<tr>
<td></td>
<td>Service Utilization/Costs</td>
</tr>
</tbody>
</table>
Summary of Baseline Findings

Demographics

Table 2 below details the demographic characteristics of the 560 individual enrolled in either the DACT or ICM program before January 1, 2004, and were therefore eligible for at least a six month follow-up before the end of the grant cycle. The sample was evenly split between men and women. A little less than two thirds were Caucasian, and little more than one third was African-American. There were very few people of Hispanic or Latino ethnicity enrolled in the program. As expected, program participants were typically 26-45 years of age (68%), and over half were more than 35 years old (55%). Individuals older than age 45 made up 18% of the dual diagnosis population served by the program.

Table 2
Demographic Characteristics $^a$

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>278</td>
<td>50%</td>
</tr>
<tr>
<td>Female</td>
<td>277</td>
<td>49%</td>
</tr>
<tr>
<td>Missing</td>
<td>5</td>
<td>1%</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>346</td>
<td>62%</td>
</tr>
<tr>
<td>African-American</td>
<td>205</td>
<td>37%</td>
</tr>
<tr>
<td>American Indian</td>
<td>4</td>
<td>1%</td>
</tr>
<tr>
<td>Other/Unknown</td>
<td>5</td>
<td>1%</td>
</tr>
<tr>
<td>Ethnicity $^c$</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>5</td>
<td>1%</td>
</tr>
<tr>
<td>Age Groups</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 to 25</td>
<td>78</td>
<td>14%</td>
</tr>
<tr>
<td>26 to 35</td>
<td>172</td>
<td>31%</td>
</tr>
<tr>
<td>36 to 45</td>
<td>205</td>
<td>37%</td>
</tr>
<tr>
<td>45 and above</td>
<td>103</td>
<td>18%</td>
</tr>
<tr>
<td>Missing</td>
<td>2</td>
<td>&gt;1%</td>
</tr>
</tbody>
</table>

$^a$ N = 560

$^b$ Values in this column may not add up to 100% due to rounding

$^c$ Categories with null responses were excluded

Table 3 outlines the educational background and the economic situation of consumers prior to engagement into treatment. One perhaps unexpected finding stemming from this descriptive analysis is the diversity in educational attainment. Most program participants completed high
school (58%), though only 6% graduated from college. To some degree, this suggests a reasonable degree of literacy. However, given the range of educational backgrounds, FA modified its interviewing process to accommodate those needing additional assistance.

Table 3

Education/Income Demographics

<table>
<thead>
<tr>
<th>Education Levels</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not complete high school</td>
<td>236</td>
<td>42%</td>
</tr>
<tr>
<td>High school graduate</td>
<td>187</td>
<td>33%</td>
</tr>
<tr>
<td>Some college</td>
<td>99</td>
<td>18%</td>
</tr>
<tr>
<td>College graduate</td>
<td>36</td>
<td>6%</td>
</tr>
<tr>
<td>Unknown/Missing</td>
<td>3</td>
<td>1%</td>
</tr>
<tr>
<td>Income Levels</td>
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<td></td>
</tr>
<tr>
<td>$300 and below</td>
<td>312</td>
<td>56%</td>
</tr>
<tr>
<td>$301 - $575</td>
<td>81</td>
<td>15%</td>
</tr>
<tr>
<td>$576 - $1000</td>
<td>55</td>
<td>10%</td>
</tr>
<tr>
<td>$1001 - $1500</td>
<td>15</td>
<td>3%</td>
</tr>
<tr>
<td>$1500 and above</td>
<td>29</td>
<td>5%</td>
</tr>
<tr>
<td>Missing</td>
<td>68</td>
<td>12%</td>
</tr>
<tr>
<td>Level of Income from Wages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>$300 and below</td>
<td>468</td>
<td>84%</td>
</tr>
<tr>
<td>$301 - $575</td>
<td>21</td>
<td>4%</td>
</tr>
<tr>
<td>$576 - $1000</td>
<td>32</td>
<td>6%</td>
</tr>
<tr>
<td>$1001 - $1500</td>
<td>13</td>
<td>2%</td>
</tr>
<tr>
<td>$1500 and above</td>
<td>21</td>
<td>4%</td>
</tr>
<tr>
<td>Missing</td>
<td>4</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Employment Status</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment full time</td>
<td>116</td>
<td>21%</td>
</tr>
<tr>
<td>Employment part time</td>
<td>36</td>
<td>6%</td>
</tr>
<tr>
<td>Unemployed looking for work</td>
<td>286</td>
<td>51%</td>
</tr>
<tr>
<td>Unemployed disabled</td>
<td>76</td>
<td>14%</td>
</tr>
<tr>
<td>Unemployed volunteer, retired</td>
<td>3</td>
<td>&gt;1%</td>
</tr>
<tr>
<td>Unemployed not looking for work</td>
<td>22</td>
<td>4%</td>
</tr>
<tr>
<td>Other</td>
<td>21</td>
<td>4%</td>
</tr>
</tbody>
</table>

\(N = 560\)

\(\text{Values in this column may not add up to 100\% due to rounding}\)

\(\text{Income refers to pretax income in the last 30 days prior to assessment}\)
Table 3 also indicates overall monthly income reported for the 30 days prior to treatment. Most participants (71%) reported less than $576 in total income, and of those, 56% reported $300 or below. Monthly income represented pre-tax individual income from wages, public assistance, retirement, disability, family and/or friends’ financial assistance, as well as non-legal income. According to the Department of Health and Human Services, the poverty guideline for a family unit with one person is $8,980 (Federal Register 2003), which is approximately $748 per month. The average baseline income for program participants was considerably lower than HHS poverty guidelines. Few participants indicated full or part-time employment in the 30 days prior to intake (27%). Of those who reported full or part time employment, few indicated more than minimal earnings.

**Severity of Substance Abuse**

Baseline findings for clients entering FA consistently show substantial substance use along with a variety of symptoms typically associated with substance abuse and dependence.

Each participant was assessed for the probability of an abuse or dependence problem with alcohol or other drugs using the TAAD interview. The TAAD interview is designed to identify symptoms of a possible current DSM-IV diagnosis of abuse or of dependence for alcohol or other drugs. The TAAD assesses both dependence and abuse by establishing a pattern of behaviors or consequences rather than simply a pattern of use.

The TAAD has 16 items that address drug dependence and 19 that address alcohol dependence. According to TAAD scoring procedures (Hoffman, 2001), possible dependence is indicated if the individual endorses items from at least three of the DSM-IV categories for dependence. A more stringent dependence criterion requires positive responses on at least five different dependence items. Similarly, possible abuse is indicated if the individual endorses at least one item in any of the four DSM-IV abuse categories while the more stringent abuse criteria require at least two different indications of abuse in one or more of the categories. For our purposes, indications for abuse or dependence reflect the more stringent criteria.

As illustrated in Chart 1A on the following page, many of the participants have reported behaviors and consequences that are indicative of multiple dependence and/or abuse patterns. More consumers report behaviors and consequences of drug dependence and abuse compared to alcohol dependence and abuse.
GPRA items are included in this report to capture the frequency of substance use in the 30 days prior to treatment. The results can be seen in Chart 1B below. Illegal drug use (57.8%) was reported more often than any use of alcohol (49.4%) or alcohol use to intoxication (39.2%). In terms of specific illegal drugs reported, cocaine (42.1%) and marijuana (26.4%) use were reported more than all other illegal drugs combined. It is somewhat surprising that cocaine use was reported more frequently than alcohol use to intoxication. However, this trend is consistent with findings from previous assessments, which also indicated more drug use compared to alcohol use in this population.
Chart 2 below details the frequency of substance use and provides a more detailed indication of substance use severity. It is important to note that the average number of days reflects only those individuals reporting use for that particular category.
Four substance use categories were not included because they represented far fewer cases (5% or fewer each). Those reporting substance use typically indicate frequent use in the past 30 days, which is consistent across all categories (i.e., approximately 12-15 days out of the last 30 for each substance use category). In addition to frequent substance use in the last 30 days prior to enrollment at Foundations Associates, many consumers reported recent treatment for substance use problems. FA serves a population with extensive treatment histories, which is not unusual for a population with co-occurring disorders. Participants in the program were often referred from other treatment facilities where they were receiving treatment focusing on substance use. Of those:

- 13.1% were referred from inpatient treatment facilities where they were receiving treatment for substance use
Psychiatric Severity

Clients entering the treatment program at Foundations Associates consistently reported high levels of symptomatology across all major psychiatric domains. In this study, the Brief Symptom Inventory (BSI) was included to provide a comprehensive assessment of psychiatric symptoms. The BSI is a 53-item self-report measure that has been used widely in mental health assessment applications. One significant benefit of using the BSI is capacity to standardize scores in terms of clinical or census-based normative groups. Using the BSI, which has well-established normative data, we can compare the psychiatric severity of FA participants to typical mental health consumers in outpatient settings, as well as to the general (i.e., non-psychiatric) population (also known as the census group). Relative to BSI normative data for psychiatric outpatient consumers, program participants tend to fall around the 60th to 70th percentile in psychiatric severity (i.e., the average Foundations consumer scores higher than 60 to 70 percent of typical psychiatric outpatients). Compared to census norms, the average FA consumer reported psychiatric symptom severity in the 95th to 99th percentile range. This trend can be seen across all psychiatric domains, and although there is some fluctuation across domains, the global severity category indicates that the average FA DACT or ICM consumer reports higher symptom severity than almost 75% of psychiatric outpatients and almost 99% of the general population. Chart 3 below compares the BSI scores of FA program participants to BSI outpatient norms and BSI census norms.
Chart 3

Psychiatric Severity - Brief Symptom Inventory (N=517)

Symptoms

- Somatization
- Obsessive-Compulsive
- Interpersonal Sensitivity
- Depression
- Anxiety
- Hostility
- Phobia
- Paranoia
- Psychosis
- Global Severity

Foundations' Percentile Rank

- BSI Outpatient Norms
- BSI Census Norms
Consistent with BSI baseline scores, the Mental Component Summary from the SF-12 also suggests that participants face substantial psychiatric impairment compared to general population norms. The Mental Component score for the general population has a mean of 50 and a standard deviation of 10 points. The above graph shows that program participants have an average score more than two standard deviations lower than the norm, indicating psychiatric conditions that present a large burden on mental health status. BSI domain scores and SF-12 summary measures indicate that consumers served by Foundations Associates have greater psychiatric impairment than general psychiatric outpatient populations.
Associated Problems – Medical, Family/Social, Economic, Housing, and Legal Problems

Subjective items from the Lehman’s Quality of Life Interview offer a general description of associated problems from the consumers’ perspective as they enter treatment (See Chart 5). All major categories are somewhat consistent in showing a general level of satisfaction except reported satisfaction with finances. Participants indicated considerably less satisfaction with finances on subjective items compared to the other categories.

Chart 5

![Quality of Life (Subjective Scale) (N=548)](image)

- Health: 3.4
- Family: 3.3
- Leisure Activities: 3.2
- Finances: 2.1
- Housing: 3.5
- Legal and Safety Issues: 4.3
- Overall Life Satisfaction: 2.9
Additional baseline data helps provide further details for each of the categories listed in the above chart:

- **Medical Problems**
  - 43.8% reported a history of head trauma
  - 32.1% reported a major medical physical illness
  - 34.4% reported chronic physical pain

- **Family/Social Problems**
  - 62.4% reported moderate (18.6%), quite a bit (25.5%), or extreme difficulty (18.3%), with family relationships
  - 44.1% reported moderate (14.2%), quite a bit (16.8%), or extreme difficulty (13.1%), with relationships with friends

- **Economic Problems**
  - 56% received less than $300 from all income sources combined in the last 30 days
  - 27% reported full or part time employment
  - 51% were unemployed and looking for employment

- **Housing**

  While it appears that largest group of participants were those living in their own residence, the measure itself does not provide an adequate representation of housing status. However, the data does help illustrate that most participants were living in relatively temporary housing (70.7%) at baseline (i.e., not their own/rent apartment, room, or house).

### Baseline Housing Status (N=560)$^a$

<table>
<thead>
<tr>
<th>Housing Status</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shelter or safe haven</td>
<td>32</td>
<td>5.8%</td>
</tr>
<tr>
<td>Street/outdoors</td>
<td>27</td>
<td>4.9%</td>
</tr>
<tr>
<td>Other Institution</td>
<td>64</td>
<td>11.6%</td>
</tr>
<tr>
<td>Housed</td>
<td>23</td>
<td>4.2%</td>
</tr>
<tr>
<td>Inpatient Institution</td>
<td>9</td>
<td>1.6%</td>
</tr>
<tr>
<td>Own/rent apartment, room, or house</td>
<td>162</td>
<td>29.3%</td>
</tr>
<tr>
<td>Someone else's apartment, room, or house</td>
<td>151</td>
<td>27.3%</td>
</tr>
<tr>
<td>Halfway house</td>
<td>47</td>
<td>8.5%</td>
</tr>
<tr>
<td>Residential treatment</td>
<td>38</td>
<td>6.9%</td>
</tr>
<tr>
<td>Total</td>
<td>553</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

$^a$: Total does not add to 560 because of missing data on 7 baseline interviews
Legal Problems

- 30.1% reported moderate (11.7%), quite a bit (1.3%) or extreme difficulty (17.1%) with legal issues (e.g., being arrested or detained, having to go to trial, having to meet with probation/parole officer)
- 12.9% were incarcerated overnight in the last 30 days.

Service Utilization

Consumers served by FA typically report extensive service utilization patterns from multiple treatment systems and from providers who were unable or unwilling to accept clients with psychiatric and substance use problems. Those who are able to access treatment often become frustrated with inconsistent treatment approaches from psychiatric and substance abuse treatment providers. As a result, individuals with co-occurring disorders often fail to engage in appropriate treatment and, instead, rely on crisis-based treatment services. In addition to previous service utilization related to substance abuse problems indicated earlier in this report, FA’s consumers report a history of high cost and ineffective service utilization for psychiatric related problems. Findings show that:

- 30.3% received treatment related to mental health problems through inpatient or emergency room (ER) treatment services in the last 30 days prior to enrollment at FA.
- Of those clients reporting utilization of higher cost services for mental health problems (i.e., inpatient or ER), only 17.7% reported any outpatient treatment services in the past 30 days prior to enrollment.
- 91.7% rated the importance of treatment for mental or emotional difficulties as very important (17%) or extremely important (72%).
Program Outcomes

The evaluation of program outcomes relies on several different instruments in order to provide adequate detail of changes in clinical status over time and across multiple domains. A list of key domains and corresponding measures are listed in the following table (Table 5), and were collected at baseline, at a six-month follow-up, and at a 12-month follow-up.

Table 5

<table>
<thead>
<tr>
<th>Outcome Domain</th>
<th>Evaluation Instruments</th>
<th>Cross-Site Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substance Use</td>
<td>▪ TAAD</td>
<td>▪ GPRA</td>
</tr>
<tr>
<td>Mental/Emotional Health</td>
<td>▪ BSI</td>
<td>▪ COFD</td>
</tr>
<tr>
<td>Physical Health</td>
<td>▪ TSR</td>
<td>▪ COFD</td>
</tr>
<tr>
<td>Functioning</td>
<td>▪ Medical Outcomes Study Short Form-12 Item (SF-12)</td>
<td></td>
</tr>
<tr>
<td>Service Utilization</td>
<td>▪ TSR</td>
<td>▪ GPRA</td>
</tr>
<tr>
<td>Housing</td>
<td></td>
<td>▪ GPRA</td>
</tr>
<tr>
<td>Legal Concerns</td>
<td></td>
<td>▪ GPRA</td>
</tr>
<tr>
<td>Social/Family Relationships</td>
<td>▪ Lehman’s QOL (objective items)</td>
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</tr>
<tr>
<td>Employment/Income</td>
<td></td>
<td>▪ GPRA</td>
</tr>
<tr>
<td>Subjective Quality of Life</td>
<td>▪ Lehman’s QOL (subjective items)</td>
<td></td>
</tr>
<tr>
<td>Stage of Change</td>
<td>▪ URICA</td>
<td></td>
</tr>
</tbody>
</table>

Sample Size

It is important to note that there are differences in the sample size between the baseline, 6 month and 12 month interviews. These differences are due to issues of timing rather than to follow-up completion rates, which hovered from 85% to 95% for this study. Baseline interviews included within this report were conducted between March 2002 and January 2004. Consumers enrolled in the grant project who entered the program after October of 2003 were not yet eligible for the
12 month interview at the time the grant ended, which lessened the number of 12 month follow-ups that could be completed. At the same time, some consumers were not always able to finish the entire protocol for a variety of reasons, generally involving time constraints. Thus, the size of the sample may vary for 6 and 12 month follow-ups, as different consumers were able to complete different sections of the follow-up protocols.

**Substance Use Outcomes**

In Chart 6, substance use at follow-up is examined for consumers who reported using a given substance at baseline. The most common drugs of abuse reported by FA consumers were alcohol and any illegal drug, specifically, crack/cocaine and marijuana. Far fewer consumers reported substance use 6 and 12 months after intake in every category. Those participants reporting substance use also reported fewer days of use.

The harm reduction model presented in Chart 6 illustrates that those participants who reported frequent use in the 30 days prior to treatment significantly reduced the frequency of substance use 6 and 12 months after enrolling in FA’s DACT or ICM program. While this is an indicator of program success, it is also important to consider abstinence as a substance use outcome because even less frequent substance use behavioral patterns (e.g., binge drinking) can be particularly problematic for individuals with co-occurring disorders.
While an abstinence model has its advantages and disadvantages, it is common in addictions research and most fairly represents a consumer’s success in addressing addiction problems with problem substances. By including consumers who report no baseline use for a given substance in the follow-up outcomes, follow-up abstinent rates would be improved, but would not accurately reflect program effectiveness. The primary weakness of this method is that limitations in sample size may sometimes become a factor when analyses are restricted to a single substance with complete follow-up data. This is why abstinence rates were only calculated for the most common substances reported, as calculations for rarer substances (e.g., heroin, amphetamines, etc.) would have reduced sample size to the point where abstinence rates would be unreliable. All data
presented in the following abstinence model (Chart 7 below) were gathered using the GPRA substance use questions that are identical to ASI alcohol and drug use items (e.g., *During the past 30 days how many days have you used the following: Any Alcohol, Alcohol to Intoxication...*).

**Chart 7**

![Abstinence Rates at 6 and 12 Months](image)

One interesting result of this analysis is that FA apparently had a slightly better success in reducing alcohol-use-to-intoxication and illegal drug use (i.e., cocaine and marijuana) relative to alcohol use (not to intoxication). This suggests that alcohol use may still present a problem for dually diagnosed patients.
Along with a decrease in substance use at follow-up, FA participants also reported fewer problems related to substance use (See Chart 8). It should be noted that each of these items captured using the GPRA tool is based on a single item for each category. However, the pattern does suggest that a decrease in alcohol and/or drug use for many consumers at FA resulted in less stress, fewer days with reduced activity, and less emotional problems.

**Chart 8**

![Substance Use Related Problems (last 30 days)](image)

*Average based on 0-4 scale (0=not at all...4=extremely)*

- Stress Due to Use
- Reduce Activity Due to Use
- Emotional Problems Due to Use
Psychiatric Outcomes

Chart 9 reports substantial reductions in psychiatric symptomatology across all BSI domains following treatment in FA’s DACT or ICM treatment program. At program intake, the average FA DACT or ICM consumer indicated psychiatric symptoms in six areas that were more severe than approximately 70% of persons receiving outpatient psychiatric services. After treatment, the average FA consumer reported less psychiatric impairment than the average person receiving outpatient mental health services, doing especially well in the areas of interpersonal sensitivity, depression, and anxiety.

Chart 9

While treatment appears to improve psychiatric stability and reduce associated symptoms across the board, it is clear that FA’s consumers have ongoing mental health needs. All BSI domains indicated significant reductions from baseline to follow-up, but some of the more persistent psychiatric symptoms (e.g., somatization, phobia, paranoia, and psychosis) were not reduced much further than the average outpatient normative group. Further analysis of specific symptoms reported on the COFD assessment helps further explain this pattern (See Chart 10). There was
only a minimal reduction in the percentage of clients who reported experiencing problems with hallucinations in the last 30 days. This could suggest that consumers with more severe psychiatric impairment do not improve as dramatically over the course of a one year longitudinal study. However, we should be careful when drawing assumptions because each of the categories shown in Chart 10 are based on single questions from the COFD assessment, and indicate existence of the problem rather than severity of the problem.

Chart 10
Medical Problems

Program success is clearly indicated by the primary outcome measures already detailed within this report; however, it is also important to consider associated outcomes, such as general medical problems with individuals who often had extensive co-morbid physical disorders. Chart 11 presents physical and mental component summary scores (PCS/MCS). Lower scores indicate greater impairment with 50 equal to general population norms. As expected, the measures indicate greater initial impairment and greater improvement on the mental component summary compared to the physical component. While physical component summary outcomes remain stable at followup, relatively minimal indication of baseline physical impairment is somewhat surprising.

Chart 11
Quality of Life Outcomes

Although subjective items are often difficult to interpret, consumer perspective is particularly important with respect to quality of life outcomes. Lehman’s Quality of Life (QOL) offers subjective ratings based on several items for each category. For each item, the respondent must indicate level of satisfaction using a scale from one to seven (1 = Terrible…7 = Delighted). Each domain contains more than one item, therefore the average is calculated to determine the corresponding domain score (Table 6).

In contrast to the subjective medical outcomes reported in the previous section, subjective QOL health ratings in Table 6 indicate greater change over time. The health domain is a broader measure that combines physical and mental health ratings, but the findings below suggest that consumers generally feel better about their health after enrollment in program services.

### Table 6

<table>
<thead>
<tr>
<th></th>
<th>TYPE</th>
<th>Baseline Mean</th>
<th>Baseline Count</th>
<th>6Months Mean</th>
<th>6Months Count</th>
<th>12Months Mean</th>
<th>12Months Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Healtha</td>
<td></td>
<td>3.44</td>
<td>548</td>
<td>4.02</td>
<td>376</td>
<td>4.14</td>
<td>216</td>
</tr>
<tr>
<td>Familya</td>
<td></td>
<td>3.32</td>
<td>548</td>
<td>4.02</td>
<td>376</td>
<td>4.15</td>
<td>216</td>
</tr>
<tr>
<td>Leisure Activitiesa</td>
<td></td>
<td>3.24</td>
<td>548</td>
<td>3.97</td>
<td>376</td>
<td>4.11</td>
<td>216</td>
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<tr>
<td>Financesa</td>
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<td>2.10</td>
<td>548</td>
<td>2.72</td>
<td>376</td>
<td>2.92</td>
<td>216</td>
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<td>3.51</td>
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<td>4.09</td>
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<td>4.15</td>
<td>216</td>
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<td></td>
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<td>4.75</td>
<td>376</td>
<td>4.91</td>
<td>216</td>
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<tr>
<td>Overall Life Satisfactionb</td>
<td></td>
<td>2.93</td>
<td>548</td>
<td>3.97</td>
<td>376</td>
<td>4.26</td>
<td>216</td>
</tr>
</tbody>
</table>

* All differences statistically significant (p<.05) based on two sided tests for baseline to 6months and baseline to 12month comparison of means

Family/Social Outcomes

The QOL outcomes indicate substantial improvement in satisfaction with family relationships. Objective items from the Lehman’s QOL provide further evidence of an improvement in family functioning. The following chart, Chart 12, shows that the average amount of contact with family and friends is consistent at each data point, while Table 6 indicates that these contacts are far
more positive at followup compared to the contacts at baseline. For example, the average family contact indicated in Chart 12 is 2.7 (i.e., more than once per month but less than weekly contact with family members) at baseline and 2.6 at 12 months.

**Chart 12**

Additional analysis of family/social outcomes was done using COFD items indicating level of difficulty with family, friends, and social activities (Chart 13). COFD items provide 5 possible responses ranging from no difficulty to extreme difficulty. In order to provide a clearer indication of social relationship outcomes, positive outcomes were indicated if consumers reported *no difficulty*. Less than 20% of all participants reported *no difficulty* with family relationships at baseline. At followup, this percentage increased to approximately 50% for six
and twelve month assessments. The following chart clearly illustrates consistent improvement in family, social, and leisure activities outcomes.

Chart 13

**Positive Family Relationships/Social Activities**

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Baseline (n=556)</th>
<th>6 Months (n=482)</th>
<th>12 Months (n=338)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Indicating No Difficulty (last 30 days)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family relationships</td>
<td>15%</td>
<td>30%</td>
<td>40%</td>
</tr>
<tr>
<td>Social relationships</td>
<td>20%</td>
<td>50%</td>
<td>60%</td>
</tr>
<tr>
<td>Leisure time</td>
<td>25%</td>
<td>45%</td>
<td>55%</td>
</tr>
</tbody>
</table>

**Finances**

Most consumers entering treatment at Foundations Associates earned minimal wages at most and subjective ratings of finances, though showing improvement over time, remained lower than any other category from baseline to followup. One possible explanation is apparent after further analysis of changes in employment status from baseline to followup (Table 7). A far greater
The proportion of consumers were *unemployed looking for work* at baseline (51.2%) compared to the proportion at followup (31.0% at 6 months and 21.5% at 12 months). There was a slight increase in the proportion of consumers *employed full time, employed part time, and unemployed disabled* from baseline to follow-up across all three data collection points. There was also a significant increase in the *other* category, which includes individuals returning to school or entering vocational education programs. This pattern suggests that more consumers had successfully gained access to some income, but that this income may not be enough to dramatically improve the consumer’s financial situation.

**Table 7**

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Interview Type</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Baseline 6Months 12Months</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Employed full time</td>
<td></td>
<td>116</td>
<td>20.8%</td>
<td>109</td>
</tr>
<tr>
<td>Employed part time</td>
<td></td>
<td>36</td>
<td>6.4%</td>
<td>54</td>
</tr>
<tr>
<td>Unemployed looking for work</td>
<td></td>
<td>286</td>
<td>51.2%</td>
<td>153</td>
</tr>
<tr>
<td>Unemployed disabled</td>
<td></td>
<td>76</td>
<td>13.6%</td>
<td>83</td>
</tr>
<tr>
<td>Unemployed volunteer</td>
<td></td>
<td>1</td>
<td>.2%</td>
<td>1</td>
</tr>
<tr>
<td>Unemployed retired</td>
<td></td>
<td>2</td>
<td>.4%</td>
<td>0</td>
</tr>
<tr>
<td>Unemployed not looking for work</td>
<td></td>
<td>22</td>
<td>3.9%</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td>20</td>
<td>3.6%</td>
<td>62</td>
</tr>
<tr>
<td>Subtotal</td>
<td></td>
<td>559</td>
<td>100.0%</td>
<td>494</td>
</tr>
</tbody>
</table>

In Chart 14, the impact of changes in employment status on income is made clearer. It is noteworthy that those *employed full time* reported dramatic increases in income from wages at followup. Chart 14 shows that the wages paid to those employed full time went from $750 in the last 30 days at the baseline interview to almost $1250 in the last 30 days for those employed full time at the six and 12 month follow-up interview. In addition, similar changes were apparent for those employed part-time, although on a smaller scale. In contrast, the amount of income for those receiving income from disability consistently remained below $500 over time. While self-reported income is a highly variable statistic, the stability of employment coupled with substantial increases in wages suggests that the program may have a positive financial impact on consumers at all levels of employment.
Consumers were increasingly housed in more permanent arrangements after enrollment in the program at Foundations Associates (See Chart 15). For example, almost 70% of consumers were housed in their own or someone else’s apartment room or house 12 months after enrollment.
compared to approximately 55% at baseline. Consumers living in a shelter or on the street decreased from 11% at baseline to 7% 12 months following enrollment in the program. As expected, given these improvements in housing situations, consumers reported far greater satisfaction with housing, as mentioned earlier in the QOL outcomes section of this report.

Chart 15

**Incarceration**

In the criminal justice population, rates for alcohol and drug disorders are four to seven times higher than the general population, and rates for mental health disorders are four times higher.
Few participants reported new arrests in the last 30 days prior to enrollment in the program (i.e., baseline). Of those who indicated baseline arrests (8.6%), even fewer reported new arrests in the 30 days prior to six month (6.0%) and 12 month (5.4%) followup assessments (See Chart 16). Arrests for drug related offenses also declined from 4.5% at baseline to approximately 1% at the 6 month (1.2%) and 12 month (0.6%) followup.

Chart 16

Criminal Justice Involvement - Number of Times Arrested

![Chart showing the percentage of participants reporting at least one arrest (last 30 days) and drug-related arrests across baseline, 6 months, and 12 months followup.](chart.png)
Service Utilization

Charts 17-19 on the following pages, overall service utilization trends clearly show some important differences in service utilization over time within each type of service (i.e., inpatient [Chart 17], outpatient services [Chart 18], and emergency room (ER) [Chart 19]). Particularly for services related to substance abuse and mental health problems, there was a dramatic shift from high cost, high intensity, and short term services to more sustainable and inexpensive outpatient services. As Chart 18 shows, there is a much higher utilization of outpatient services at twelve months (32.1%) compared to baseline (9.7%) for mental health services, as well as for substance abuse services (27.5% at twelve months and 7.0% at baseline). In contrast, Charts 17 and 19 show utilization of emergency room and inpatient services for mental health declined from baseline to twelve months (8.1% and 11.9% decline for each category, respectively), as well as for substance abuse (3.5% and 8.5% decline for each category, respectively). The decline in inpatient and ER services represents a consistent pattern from baseline to 6 and 12 months. This consistent pattern suggests that the program successfully transitioned participants from high-cost reactive services (i.e., ER and inpatient) to more appropriate and sustainable outpatient services.

Utilization of services related to physical medical problems remained relatively stable compared to service utilization for mental health or substance abuse problems. The percentage who reported inpatient services for physical medical problems remained approximately 3% across all three data points. Similarly, outpatient services increased from 1% at baseline to 2.6% at twelve months. Emergency room services for physical problems increased from baseline (9.3%) to 6 months (16.2%), but decreased at twelve months (12.0%) showing little change from baseline to twelve months. It is difficult to draw any meaningful comparisons based on reasons for service use (i.e., physical, substance use, or mental health problems) because services are usually related to a combination of medical/behavioral health problems - that is, many clients who indicated ER utilization for physical problems, indicated ER use for mental health problems as well.
Chart 17

Inpatient Service Utilization at Baseline, 6 Months, and 12 Months

- **Percentage Reporting Services (last 30 days)**
- **TYPE**
  - Baseline (n=559)
  - 6 Months (n=494)
  - 12 Months (n=346)

### Inpatient for Physical
- Baseline: 3.0%
- 6 Months: 2.0%
- 12 Months: 2.9%

### Inpatient for Mental Health (MH)
- Baseline: 10.1%
- 6 Months: 6.6%
- 12 Months: 18.5%

### Inpatient for Substance Abuse (SA)
- Baseline: 13.1%
- 6 Months: 7.9%
- 12 Months: 4.6%
Chart 18

Outpatient Service Utilization at Baseline, 6 Months, and 12 Months

TYPE
Baseline (n=559)
6Months(n=494)
12Months(n=348)

% Reporting Services

Outpatient for Physical
5.7%
2.6%

Outpatient for MH
50.2%
32.1%

Outpatient for SA
37.8%
27.5%
Chart 19

Emergency Room Service Utilization at Baseline, 6 Months, and 12 Months

Percentage Reporting Services (last 30 days)

<table>
<thead>
<tr>
<th>TYPE</th>
<th>Baseline (n=559)</th>
<th>6 Months(n=494)</th>
<th>12 Months(n=348)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ER for Physical</td>
<td>9.3%</td>
<td>12.0%</td>
<td>16.2%</td>
</tr>
<tr>
<td>ER for MH</td>
<td>8.7%</td>
<td>5.7%</td>
<td>7.3%</td>
</tr>
<tr>
<td>ER for SA</td>
<td>6.1%</td>
<td>2.0%</td>
<td>7.1%</td>
</tr>
</tbody>
</table>
Summary of Findings

Project goals for the treatment of individuals with co-occurring disorders who are homeless or at risk for homelessness in the Davidson County area included improved periods of sobriety and behavioral stability, as well as improved quality of life and housing stability. On all these domains, significant improvements were seen from baseline to follow-up.

At the most basic level, treatment goals were set to reduce substance abuse and dependence disorders, as well as to reduce psychiatric problems for dually diagnosed offenders. The TAAD, GPRA, and ASI outcome measures show clear improvement in the area of substance use. Program participants showed a dramatic reduction in the use of alcohol or drugs and greater abstinence rates. Similarly, the BSI, SF-12 Mental Component Score, and TSR showed that program participants made significant improvements to their mental health status.

Associated measures (Lehman’s QOL, GPRA) also indicated that program participants improved their overall quality of life. By both treating SA/MH problems and also focusing on life style changing interventions (e.g., vocational service), the program was able to help participants improve family and social relationships, financial situations, housing situations, and reduce legal/criminal problems. The result was that the overall quality of life for program participants improved, and helped provide stability to prevent relapse.

Finally, program outcomes also indicated significant societal gains as well. Two major burdens on government infrastructure posed by dually diagnosed offenders are on the criminal justice system and on the health care system. As indicated by the GPRA and COFD, program participants had fewer arrests and fewer legal problems after treatment, helping to alleviate the burden placed on the criminal justice system. TSR and GPRA items showed that the program successfully transitioned participants from high-cost reactive services (i.e., ER and inpatient) to more appropriate and sustainable outpatient services.

Most significantly, however, is that program participants were able to improve or sustain most program outcomes even twelve months after treatment, indicating that treatment protocols did indeed produce lasting change.