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ORIGINAL PAPER

Critical Time Intervention: An Empirically Supported Model for Preventing Homelessness in High Risk Groups

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Abstract Critical Time Intervention (CTI) is designed to prevent recurrent homelessness among persons with severe mental illness by enhancing continuity of care during the transition from institutional to community living. After providing the background and rationale of CTI, we describe the elements of the model and summarize the status of existing research on its effectiveness. We then briefly illustrate how the CTI model has begun to be adapted and implemented by providing a case example of a homeless woman's transition from shelter to housing. Finally, we consider plans for the further adaptation, testing and dissemination of CTI in other populations and service delivery settings.

Keywords Case management · Effective prevention strategies · Homelessness · Mental illness · Program implementation

Introduction

The past fifteen years have seen the development of a range of interventions intended to respond to the problem of homelessness among persons with mental

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illness. These interventions include outreach and engagement models (Barrow et al. 1991), adaptations of Assertive Community Treatment (Lehman et al. 1997), and a broad array of transitional and permanent housing models with varying levels of associated treatment and support (Hopper and Barrow 2003). A growing body of research has begun to document the effectiveness of a number of these approaches in meeting the complex needs of homeless persons with mental illness and the broad dissemination of these approaches is at an early stage. Despite this substantial progress, prevention models that are carefully documented and systematically evaluated remain scarce.

This article describes one such model, Critical Time Intervention (CTI), an individual-level intervention designed to reduce the risk of homelessness and other adverse outcomes in adults with mental illness following discharge from institutions to community living. The goals of CTI include both primary prevention—preventing housed individuals from becoming homeless—and secondary prevention by reducing the duration and damaging effects of long homeless episodes among persons who have lost housing. After providing the background and rationale of CTI, we describe the model and summarize the status of existing research on its effectiveness. We then briefly illustrate how the CTI model has begun to be adapted and implemented by providing a case example of a homeless woman's transition from shelter to housing. Finally, we consider plans for the further adaptation, testing, and dissemination of CTI in other populations and service delivery settings.

Origins of CTI

CTI grew out of a collaboration between mental health clinicians and researchers working at the Franklin Avenue and Fort Washington Armory men's shelters in New York City between the mid-1980s and early 1990s. These were large, city-operated shelters housing up to 1000 men per night, a considerable number of whom were severely mentally ill. Over the course of several years, onsite mental health teams at these shelters developed comprehensive treatment programs delivering outreach and case finding, psychiatric medication, rehabilitation groups, entitlement counseling, and case management. In 1990, a partnership between local and state government led to the ''New York/New York'' agreement, which produced an unprecedented expansion of new transitional and permanent housing programs for homeless persons with severe mental illness. These programs included a broad range of housing types from scattered site supportive apartments to more highly supervised congregate living settings. This expanding availability of housing options increased the ability of the shelter mental health team to place many of their homeless clients into housing following, in most cases, a significant period of shelter-based treatment. Clinical observation and research at the two shelters revealed that a large proportion of men placed into housing became homeless again within 18 months of discharge from the shelter (Caton et al. 1992; Gounis and Susser 1990). Despite having well-conceived discharge plans, the men still did not have the type of assistance they needed to overcome the natural discontinuity in support they experienced during their transition.

One reason that such transitional periods are especially challenging is that clients are typically called upon to navigate a complex and fragmented system of care (Dorwart and Hoover 1994; Olfson et al. 1998). Creating linkages in such an environment, both with formal service agencies and informal social supports, is a difficult task. Negotiating such networks requires a high level of social skills, which many mentally ill individuals may not have. Furthermore, many of these persons are struggling with other disabilities including substance abuse (Drake et al. 1997) and physical health problems (Gelberg and Linn 1989). Too often, clients and community service providers are unable to find a way to accommodate one another. The clients tend to be difficult to treat; their needs are multiple and complex, and they may miss clinic appointments, get into interpersonal conflicts, and spend their money on drugs or alcohol. Service providers, for their part, may not know how to negotiate a service plan that the client can tolerate. In some cases, providers may even be relieved when a particularly challenging client drops out of services.

Furthermore, the transition period is typically accompanied by the loss of personal relationships with key individuals on whom the client has relied during his institutional stay. This may include other residents, members of the treatment team, and institutional staff. These relationships may have provided important sources of support that end abruptly following a typical move from institution to permanent or transitional housing. The transition period can also be a difficult time in the relationship between the client and his or her family and social network. Family members and friends frequently have not received adequate psychoeducational information regarding the client's illness or guidance in problem-solving approaches (Lehman and Steinwachs 1998). Clients' needs and behaviors may therefore be poorly understood by family members and friends, leading to disruption in these critically important connections.

Thus, in the team's view, there was a clear need to augment the service delivery model to enhance continuity of care during the ''critical time'' of transition from shelter to community. Furthermore, there was a hope that a time-limited intervention provided during this key period, if effective, might have durable beneficial effects by helping to strengthen a network of community support that would endure beyond the period of the intervention itself. CTI shares with long-term Assertive Community Treatment models a focus on stabilizing clients in the community through *in vivo* development of independent living skills and by building effective support networks in the community (Lehman et al. 1997). The emphasis, however, is on maintaining continuity of care during the critical period of transition, while primary responsibility is gradually passed to the existing supports in the community. We describe below the fundamental components of the CTI model. Further details are provided in earlier publications (Valencia et al. 1996, 1997) and the CTI program manual, available by request from the first author.

The CTI Model

The principal goal of CTI is to prevent recurrent homelessness and other adverse outcomes during the period following placement into the community from shelters,

hospitals, and other institutions. It does this in two main ways: by strengthening the individual's long-term ties to services, family, and friends; and by providing emotional and practical support during the critical time of transition. An important aspect of CTI is that post-discharge services are delivered by workers who have established relationships with patients during their institutional stay. Typically these workers are bachelor's or master's level individuals operating under the supervision of an experienced clinically trained professional. The CTI workers must be flexible and creative as well as comfortable working primarily in the community. At the same time, they must be committed to following a rather focused model of care. The intervention itself is delivered in three main phases: (1) Transition to the community, (2) Try-out, and (3) Transfer of care. The phases are described below and summarized in Table 1.

Transition to the Community

The first phase focuses on providing intensive support and assessing the resources that exist for the transition of care to community providers. Ideally, the CTI worker has already begun to engage the client in a working relationship before he or she moves into housing in the community. This can be accomplished formally or informally, depending on the institutional setting and the role of the worker within the institutional system, and may consist of multiple meetings or just one or two contacts. This is important because the worker will build on this relationship to effectively support the client following discharge from the institution. During the

Table 1 Phases and activities of critical time intervention

Phase	Transition	Try-Out	Transfer of Care
Timing	Months 1–3	Months 4–6	Months 7–9
Purpose	Provide specialized support & implement transition plan	Facilitate and test client's problem-solving skills	Terminate CTI services with support network safely in place
Activities	• CTI worker makes home visits	• CTI worker observes operation of support network	• CTI worker reaffirms roles of support network members
	• Accompanies clients to community providers	• Helps to modify network as necessary	• Develops and begins to set in motion plan for long-term goals (e.g. employment, education, family reunification).
	• Meets with caregivers		• Holds party/meetings to symbolize transfer of care
	• Substitutes for caregivers when necessary		
	• Gives support and advice to client and caregivers		
	• Mediates conflicts between client and caregivers		

first few weeks following this move, the CTI worker maintains a high level of contact with the client, both through regular telephone calls and home visits. Interim psychiatric treatment (including providing access to medication as needed) can be arranged by the team until adequate community arrangements are in place. This assures that treatment will not be interrupted during this early critical period of transition. Clients are accompanied to appointments with selected community providers, such as mental health and medical clinics. The CTI worker ''introduces'' the client to his or her new providers in order to facilitate the development of a durable tie and encourages them to negotiate compromises when problems arise.

The CTI worker also meets with key figures in the client's residence. These figures are most often the primary caretaker in a family home or staff in a supervised residence, but in some cases may include a single-room occupancy hotel manager or an involved neighbor. The CTI worker offers support to these persons while making it clear that he or she is prepared, when necessary, to mediate a compromise between them and the client. They discuss potential housing crises and try to identify ways to avoid them or possible coping strategies and resources, should a crisis occur. The CTI worker also works with the client and primary caretaker on skills for crisis resolution, such as how to listen to each other, and how to speak to each other without going on the attack. Tensions tend to arise quickly as caretaker or staff and client attempt to adjust to one another. As with the community service providers, a compromise developed during this early phase of adjustment may prevent later loss of housing. This work sometimes takes the form of family psychoeducation in which the CTI worker may educate a family member about the client's mental illness; this frequently contributes to enhanced family support as relatives come to understand that problem behaviors have causes other than ''bad behavior'' or substance abuse. However, compromise is not helpful or appropriate in all situations. For instance, when the primary caretaker is a mother with a history of injection drug use who relapses after the client moves back in with her, the best plan of action may be to assist the client in locating alternative accommodations.

During these initial intensive contacts, the worker is also gathering data needed for treatment planning in the transition period. He or she works together with clients and service providers to detail proposed arrangements to ensure medication adherence, money management, or control of substance abuse. These arrangements are then tested *in vivo* and modified if necessary during the transition period. The CTI worker generally makes detailed arrangements in only the handful of areas that are seen as most critical for the community survival of that individual (i.e., medication adherence); it is important not to be overly ambitious. There is also a strong emphasis on assessing the feasibility of the support systems that are established because they are intended to persist well after the CTI worker has terminated services. During this initial period, the worker must also recognize when clients' lack of participation in some programs may indicate that the services being offered are incompatible with their needs. For example, a young man with a substance abuse problem explains that he does not regularly attend the treatment group meetings to which he has been referred because the issues discussed by the other, much older, group members do not address his concerns. In this case, rather

than attempting to help the client to adjust to the group, the CTI worker may help him identify another group composed of younger people.

Try-out

The second phase of CTI is devoted to testing and adjusting the systems of support that were developed in the first phase. By now, community providers will have assumed primary responsibility for the provision of support and services, and the CTI worker can focus on assessing the degree to which this support system is functioning as planned. During Phase Two, the worker encourages the client and members of his or her support system to handle problems on their own. The worker meets with the client less frequently, but maintains regular contact in order to observe how the plan is working and be ready to intervene when a crisis arises. In many cases, further modification of the support system is required. Such ''system adjustment'' may be accomplished via a case conference or less formal meetings between the client and those involved in the support system. The CTI worker acts as a primary resource for all parties and assists them in devising a framework for resolving potential conflicts. For some clients, this period requires a renegotiation of treatment plans and a more active role for the CTI worker in facilitating the implementation of these plans. The *in vivo* monitoring role assumed by the worker may also be helpful in identifying specific clinical treatment issues (such as medication non-adherence) that may elude even the most caring office-bound clinician.

Transfer of Care

The final phase of CTI focuses on completing the transfer of care to the community resources that will provide long-term support to the client. One of the strengths of the CTI model that differentiates it from the services typically available to clients during transitional periods is that the transfer-of-care process is not abrupt; instead, it takes place over nine months. Throughout the intervention, the CTI worker has gradually reduced his or her role in delivering services to the client in the community. By the time Phase Three begins, the worker has gradually prepared the client and linkages for his or her new role as consultant. The main function in this phase is to ensure that the most significant members of the support system meet together and, along with the client, reach a consensus about the components of the ongoing system of care. Ideally, this occurs at least one month before the end of the nine-month period of the intervention. This gradual process ensures that the termination of CTI is not perceived by the client and the members of his or her support system as a sudden, potentially traumatic, loss.

Client Choice

Although the CTI model recognizes the necessity of incorporating client input into service planning decisions, it is not an exclusively client-directed intervention. Early in their relationship, typically before placement into housing, the worker and client

collaborate to develop a mutually agreeable service plan. Together, they consider the client's wishes, his or her strengths and weaknesses, and the capacity of various sources of support in the community. This begins a process of developing the trusting relationship that is essential to the ongoing success of the intervention. After the client moves, the role of the CTI worker is to mediate on behalf of the client while helping the client develop the ability to advocate for him or herself. In planning their efforts, CTI workers consider not only the client's preferences, but also the client's history and the limits of the environment. For example, even though a client might express a desire to live alone in an unsupervised apartment, the CTI worker might determine, based on the client's past experience, that he or she requires 24 hours staffed accommodation in order to ensure residential stability. The worker would then try to persuade the client to consider residences with this level of support.

Caseload Size

In general, CTI workers should have small caseloads, consisting of approximately fifteen clients. However, since the different phases of the intervention involve dramatically different degrees of time and energy on the part of the worker, this overall total can be misleading. It is therefore more meaningful to consider the number of clients in each phase of the intervention that a given worker is responsible for. For instance, in our most recent trial (CTI in the Transition from Hospital to Community, discussed below), a typical worker carried roughly four clients in Phase One, four clients in Phase Two, and four clients in Phase Three. At the same time, the workers were also involved in outreach to potential clients who were awaiting entry into the study.

Assessing Effectiveness: Results of the Initial Trial

The effectiveness of the CTI model was tested in a NIMH-funded randomized controlled trial conducted with 96 men who were discharged between 1991 and 1993 from the Fort Washington Armory shelter to housing in New York City. After their housing placement had been selected, these men were randomly assigned to receive either CTI or the standard case management discharge services typically provided by the on-site psychiatric team. The men in the CTI group received nine months of CTI, while the men in the comparison group received usual services only, which were confined to discharge planning and limited consultation with clients and caregivers only when requested. In both conditions, these interventions were in addition to whatever treatment, rehabilitation, and case coordination services were available in the community. Complete follow-up data on homelessness—the study's primary outcome—were obtained on 98% of the sample. We summarize below the major findings of this study, the full details of which are available in other publications.

Homeless Nights

CTI was associated with a significant, lasting reduction in post-discharge homelessness (Susser et al. 1997). Over the 18-month follow-up period, the average number of homeless nights was 30 for the CTI group and 91 for the usual services group. Extended homelessness (more than 54 nights) occurred in 10 (21%) of the men in the CTI group, compared with 19 (40%) of the men in the usual services group ($\chi^2 = 4.0$, $df = 1$, $p < .05$). As illustrated in Fig. 1, it is particularly striking that the effect of CTI in reducing extended homelessness did not diminish after the intervention ended. We believe that the explanation for this finding may lie in the design of CTI; rather than making the CTI worker the primary source of care, durable ties are built between the client and his or her long-term supports. By contrast, positive effects are often lost when direct support is withdrawn in models that are designed to provide ongoing direct assistance. Subsequent work employing latent class growth analysis provided further evidence of the impact of CTI on reducing the risk of homelessness during the follow-up period (Lennon et al. 2005).

Psychiatric Symptoms

In further analyses, symptom severity at discharge from the shelter and six months afterwards were assessed using the Positive and Negative Syndrome Scale (Kay et al. 1992). Using data on 76 subjects for whom we had complete symptom data, we assessed the impact of CTI on change in symptoms. The results suggest that CTI was associated with a statistically significant decrease in negative symptoms at the 6-month follow-up, reflecting modest clinical improvement. There was no significant effect on positive or general psychopathology symptoms. Although the finding on negative symptoms requires replication, we have hypothesized that by encouraging clients to focus on planning and organizing their transition from institution to community living, CTI may contribute to cognitive remediation by

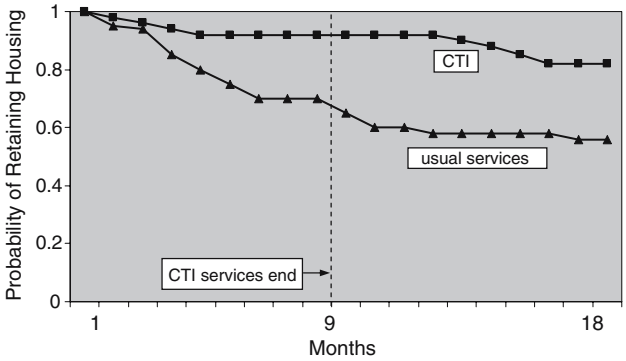

Fig. 1 Probability of retaining housing over 18 months in a randomized trial of CTI with homeless men following shelter discharge (N = 98). Source: Preventing recurrent homelessness among mentally ill men: a ''critical time'' intervention after discharge from a shelter. *American Journal of Public Health* 87:256–262. Reprinted with permission from the American Public Health Association.

helping to reactivate prefrontal cortical functions involved in these cognitive activities (Herman et al. 2000).

Cost Effectiveness

An economic analysis conducted as part of the trial found that over the 18-month follow-up period, the CTI group and the usual services group incurred mean costs of $52,374 and $51,649, respectively, for acute care services, outpatient services, housing and shelter services, criminal justice services, and transfer income. Since these essentially similar costs were associated with a significantly lower mean number of homeless nights in the CTI group, we concluded that the intervention was cost-effective in comparison with usual care (Jones et al. 2003).

The ''Second Generation'' of CTI Outcome Research

Since the initial randomized trial was completed, there have been several efforts to adapt and test the effectiveness of CTI with different populations in various service delivery settings. The following studies, which are either currently underway or recently completed, are expected to be reported in the published literature in the near future (further details and contact information for study investigators can be obtained from the first author).

CTI in the Transition from Hospital to Community

This randomized trial, funded by NIMH and the New York State Office of Mental Health, is testing the model with homeless mentally ill men and women following discharge from two state-operated psychiatric hospitals. As in the original trial, the length of the CTI intervention is nine months and the study has an 18-month follow-up period. Follow-up of the sample of approximately 150 subjects is expected to be completed in September of 2007.

CTI with Homeless Families

Investigators from the Nathan Kline Institute in Orangeburg, New York, recently completed data collection and follow-up in a SAMHSA-funded randomized trial evaluating the effectiveness of CTI with homeless families (primarily single women with young children) in which the parent has a significant mental health and/or substance abuse condition. Outcomes for families in the experimental condition, who received CTI in combination with placement into transitional housing, will be compared with families who received usual services in the Westchester County homeless services system.

US Veterans' Administration Special Needs Grant for Chronically Mentally Ill CTI Program

This multi-site research demonstration project is being implemented at seventeen locations in the US. CTI teams are working with community-based residential providers to provide services to homeless veterans with severe mental illness. Training in CTI and other evidence-based approaches is provided by the ACT Center of Indianapolis. This work follows an earlier research demonstration project with homeless adults following discharge from inpatient psychiatric care in eight VA sites.

Does CTI Improve Psychiatric Inpatient–Outpatient Outcomes?

Data collection was recently completed in a randomized trial of 166 subjects that seeks to assess the effectiveness of CTI in improving continuity of care for patients transitioning from inpatient to outpatient treatment in the Veteran's Administration psychiatric system.

CTI for Men with Mental Illness Leaving Prison

This is a new NIMH-funded randomized trial that will investigate the effectiveness of the model in preventing homelessness and other adverse outcomes in mentally ill men following discharge from state prisons in New Jersey. To strengthen the intervention's capacity to respond to co-occurring substance abuse disorders in the target population, investigators have integrated it with Dual Recovery Therapy (Ziedonis and Stern 2001).

International adaptations

Two groups are currently conducting pilot feasibility studies of CTI with different populations in Europe. In the Netherlands, a team operating in the Hague is using the model to re-integrate into the treatment system homeless persons dually diagnosed with mental illness and substance abuse disorders. In the United Kingdom, investigators in Manchester and London are adapting CTI for use with mentally ill men and women being discharged from jails into the community.

We anticipate that results of these studies will continue to refine our understanding of the model's effectiveness and applicability in a variety of service delivery contexts. These findings may in turn stimulate further modification of the model and subsequent research trials. Important questions to be addressed in these and future studies include the following: what are key mediating and moderating variables (both individual-level and contextual) that influence the impact of CTI and do these factors vary between populations?; is CTI an effective approach for helping non-homeless populations make more effective transitions between institutional and community-based treatment settings?; is nine months the optimal time period for the delivery of CTI or can the model be effectively delivered in a shorter duration?; how can CTI be most effectively applied in the context of other promising models such

as Housing First and ACT?; which specific adaptations are required to adapt CTI for use with members of specific ethnic and cultural groups?; how can CTI be adapted to incorporate promising approaches growing out of the movement toward peer support and other consumer-operated services?

Early Dissemination Efforts: Implementing CTI in a Typical Service Delivery Setting

In an ideal world, perhaps, broader dissemination of CTI into non-research settings might await one or more further round in this iterative process. In the real world, however, this is unlikely to occur. Based on the limited research completed so far by our group and our collaborators, CTI has now been cited as an effective model by both SAMHSA's National Registry of Evidence-based Programs and Practices (NREPP) and the President's New Freedom Commission on Mental Health (2003). Given this, along with the fact that CTI is one of very few carefully specified interventions specifically designed to reduce the risk of homelessness in high-risk individuals, the research team has experienced a growing number of inquiries from service providers wishing to implement the model. We describe below the preliminary experience of one such organization, the Institute for Community Living, Inc. (ICL), which is in the early stages of its efforts to use CTI with dually-diagnosed homeless women in a shelter in Brooklyn, NY. We also present a brief case study to demonstrate how CTI has been applied in this setting.

ICL is a large, not-for-profit behavioral health network delivering services to persons with mental illness, substance use and developmental disabilities in New York City. The organization provides a broad range of housing, treatment, family support, and case management services with the support of public and private sources. In 2004, ICL responded to a request for proposals from SAMHSA for expansion of services for homeless persons with co-occurring mental health and substance abuse disorders to expand evidence-based interventions to the Park Slope Women's Shelter in Brooklyn. The shelter itself is operated by CAMBA, a non-profit social services organization that assists homeless people and other low-income community members by enabling them to become economically and socially self-sufficient. The intervention models selected by ICL for this application included: CTI; Seeking Safety, an integrated approach that simultaneously addresses trauma and substance use (Najavits 2002); and Illness Management & Recovery (Mueser et al. 2002). This project is aptly titled ''Project Aspire'' for its potential to improve the success of homeless women in all areas of life. The overall goal of the project is to help clients develop the stability and skills needed to make a successful transition from shelter to living in housing in the community. Program planners included CTI in the proposed project design because of its person-centered, time-limited approach, its emphasis on creating sustained linkages with co-providers, and its compatibility with motivational change approaches. Furthermore, the project's emphasis on facilitating effective transitions from shelter to community closely resembled the objective of the original CTI implementation. The application was approved by SAMHSA for a five-year period of funding in July 2005.

Staff Training

The staff includes the Project Aspire director, a CAMBA program supervisor, three CTI workers, two masters-level clinical intervention specialists, and an evaluator. ICL & CAMBA together provide executive management and oversight. A training manual and a day of training sessions were provided by staff of the original CTI program. The first half of the training included CAMBA shelter staff, whereas the second half, which focused on the practical application of CTI, was directed only to the CTI workers. A fidelity scale, developed by Columbia researchers, is being used to guide implementation efforts.

Inter-Agency Collaboration

In the original implementation, CTI services were delivered directly by the on-site mental health team in the shelter. In the current application, the ICL team works collaboratively with the shelter staff to provide continuous care to the shelter residents, and integrate Project Aspire interventions and ICL's network of community-based services (including supportive housing and a dual-diagnosis day treatment program) into standard shelter services.

Start-up

The initial focus of the start-up process was to create a mission statement. The second focus was on staff training and the integration of the project into the shelter's services. Shelter residents and staff took part in a forum held by an ICL representative to strengthen the sense of partnership between CAMBA and ICL and to identify the concerns of prospective clients. An additional session for residents was held to provide information on the new services that would soon be introduced in the shelter. CTI supervision meetings were added to the group supervision process. A number of systemic barriers to recruitment and service implementation, such as problems with space and staffing, were identified and resolved. The third focus was on issues related to implementation, for example, specifying the intake process, determining how to document the service delivery process, and developing procedures to improve intra-agency communication.

Modifications Required

Modifications to CTI as originally implemented with homeless men were shaped in collaboration with members of the original CTI development team. In contrast to the original intervention, all participants in this project are women, although the ethnic composition (mainly African-American and Latino) and age distribution (25–60) are similar. As noted above, Project Aspire combines CTI with two other evidence-based interventions. One of the modalities, Seeking Safety, is a specialized treatment for clients with co-occurring post-traumatic stress and substance use histories. This intervention was added to respond to the extremely high prevalence of these conditions in the population of homeless women being served. The program

operates under the assumption that active participation in each treatment modality has a synergistic effect and is thus more likely to lead to improved functioning in all areas of life. Thus, skills learned in Seeking Safety can be further explored and refined in one-to-one CTI sessions. Conversely, Seeking Safety focuses on linkages with various recovery-oriented service providers and strengthens the continuity of care aspect of CTI.

CTI is offered as soon after shelter admission as possible, in contrast to the original project in which CTI was only introduced after residents were ready to be placed in housing. This modification is an attempt to prevent lengthy shelter stays. Although CTI tries to incorporate a client's own goals into the treatment plans, the limited availability of housing is often an obstacle to meeting the client's residential preferences (e.g., a Jamaican client wishes to live in a community residence in a neighborhood with other Jamaicans but no spaces become available in that residence when she needs housing). Another challenge encountered during start-up was rapid staff turnover resulting in slower than anticipated client recruitment.

Evaluation

The evaluation component of Project Aspire includes fidelity checks to measure program implementation as well as client assessments at baseline, three, six and 12 months to measure the degree to which the service enhancements are having an impact. There is further follow-up at 18 months to assess housing status. Successful housing placement for shelter residents is defined by the New York City Department of Homeless Services as six or more continuous months in non-shelter housing. The project surpassed the annual target enrollments in the first year. Each of the 41 clients with near complete participation on the short battery of assessments at intake/enrollment expressed a desire for permanent housing.

Impact of CTI Model in the Broader Agency Context

As a leader in delivering evidence-based and best practice interventions across integrated service domains, ICL is actively applying the principles and approach of CTI in a number of its other programs to further enhance client transitions to housing and linkages with co-providers. The modification and tailoring of CTI to these settings has focused on increasing client motivation to search for permanent housing while establishing lasting linkages to treatment services including day treatment, medical care and Assertive Community Treatment (ACT) teams.

Case Example

(Note: identifying details of the case have been modified to protect client confidentiality.) As the CTI workers were not on the shelter mental health team, they devoted much time during the early implementation stage to becoming a part of the culture of the shelter by attending groups, meetings, and activities with the clients and shelter staff, while also talking with the clients in recreation areas within and around the shelter. One client, Taneya, a 34-year-old African-American woman,

referred herself to the project after meeting and developing a relationship with Judy, one of the CTI workers, during shelter activities. She was considered to be at an early stage of housing-readiness at the time of her enrollment in the CTI project. She had a history of disregarding shelter rules and poor socialization skills, but the initial non-threatening contact fostered trust and the successful beginnings of the CTI relationship.

In the initial assessment with Judy, Taneya reported little about her history but stated that the reason she became homeless was that her boyfriend physically abused her when he used drugs. She seemed to be a poor historian, and Judy noticed inconsistencies in her work and educational history. Taneya's shelter chart revealed she had been diagnosed with bipolar disorder. After some amount of time and development of trust, Taneya revealed some of the reasons why she had withheld information, which included her history of troubling experiences with racism in institutional systems. Judy was empathic in her approach to fostering a relationship that took these experiences into account. Taneya felt strongly that her shelter case manager was doing little to help her, and that all she wanted was to be housed. To reduce the possibility of maladaptive 'splitting' behaviors disrupting treatment, Judy quickly arranged for a collateral meeting with both Taneya and her shelter case manager to try to foster a more productive relationship between them. The outcome of this meeting was enhanced communication between the workers and their respective agencies, which helped to solidify future service linkages. Motivational interviewing strategies, which emphasize expressing empathy, avoiding argumentation and supporting self-efficacy, were useful in these instances. They made it easier for Taneya to accept responsibility for her goals, wishes, and hopes for her life, including finding and maintaining housing.

Taneya also had a criminal history that she felt was exacerbated by her psychiatric symptoms, with a history of substance use that included marijuana and alcohol abuse. She admitted to relapsing twice during the last five years, but had been clean for almost a year, due in part to a treatment program she attended. She often reported feeling anxious about how long it might take to coordinate all of her services and expressed an urgency to move from the shelter. Taneya would clench her fists as tears ran down her face, stating, ''All I need is housing…'' Judy used motivational interviewing techniques to assuage her anxiety and help her to tolerate frustration. She encouraged Taneya to share some stories that illustrated the relationship between her criminal history and drug use. They discussed different solutions for dealing with substance use triggers, and which community linkages Taneya might turn to for help. Judy provided psycho-education in order to better inform her about her psychiatric disorder and to teach relapse prevention skills. The primary foci of Judy's community linking activities included ensuring connections with psychiatric treatment, parenting classes, GED courses, and her probation officer.

Taneya was linked with educational and vocational training, mental health and substance abuse services including the Seeking Safety group, and a motivational interviewing process with Judy. Once her housing application was completed (but before she was housed), Judy focused on developing the linkages that would otherwise have begun at discharge from the shelter. As evidenced by self-report and

the observations of Judy and shelter staff, Taneya significantly improved her socialization skills, self-efficacy, and ability to manage angry and anxious feelings during this period.

Eight weeks after her initial contact with CTI, Taneya moved into supportive housing. The CTI relationship shifted to facilitating Taneya's growing independence, while continuing to recognize and support the linkages and relationships she developed while living in the shelter. An example of a new source of community support that Judy helped Taneya establish is the neighborhood pharmacist with whom she has developed a positive and trusting relationship. Taneya, with Judy's encouragement, has also begun to use her local public library where she has done research to identify cooking classes that she may avail herself of. Taneya is currently entering Phase Two of CTI. Judy meets with her on a weekly basis to reinforce medication management, recovery strategies, and independent living skills, and participates in ongoing case conferences with housing-based case managers. She also attends the project's weekly CTI meeting and group supervision.

Lessons Learned

As we continue to learn from the experience of service providers and researchers currently working with the CTI model, we simultaneously plan to pursue a dissemination effort with the goal of making CTI more broadly available to organizations delivering services to homeless persons. We have attempted so far to respond to agency-specific requests for dissemination of CTI on an ad hoc basis via distribution of materials including a treatment manual and model fidelity measurement tools, both developed for use in our randomized trials. Our collaboration with the staff of ICL described above followed this model. We have also conducted training workshops with roughly twenty other service providers over the past five years. In some cases, we have provided these organizations with ongoing implementation support (via in-person or telephone consultation), in order to maximize the chances of successful implementation of the model.

This experience has revealed a number of important organizational and practice issues that must be addressed as providers attempt to implement CTI. At the organizational level, for instance, agencies tend to firmly divide their deployment of staff between institution-based and community-based work assignments. This can make it difficult for workers to effectively bridge this divide as CTI is intended to do. In addition, staff accountability procedures (requiring, for example, ''clocking-in'' at office locations) may discourage the types of flexible *in vivo* worker activities that are the hallmark of CTI and other similar interventions. We have also observed that several elements of CTI may initially seem to run counter to what case management and other treatment staff typically view as good clinical practice. For example, the phased, time-limited nature of CTI is unusual, particularly in work with severely mentally ill persons, for whom it has generally been assumed that open-ended, ongoing support from caseworkers is required. This tension can be particularly evident during the latter phases of the intervention when CTI workers are called upon to reduce their level of direct support in order to allow the community network to begin to assume responsibility for assisting the client.

Similarly, the CTI worker's narrow focus on identifying and attending to a relatively small number of problem areas that pose the greatest threat to successful community tenure is somewhat unusual in that staff are often expected to develop and implement comprehensive service plans spanning a broad set of domains. Finally, in contexts such as Project Aspire, in which CTI is delivered by workers operating within a host setting operated by a sister organization, significant effort may be required to overcome organizational barriers to effective collaboration (e.g., obtaining client consent to exchange information prior to placement in order to enhance continuity of care). These are all examples of issues that must be addressed at multiple levels in order to maximize the chances that CTI can be successfully implemented.

Future Plans

While we are gratified by the apparent demand for training in the model, we are also aware that our research team currently lacks the resources to mount the type of fully-developed training initiative that would be required as a first step in any broad dissemination effort. We have therefore entered into a collaboration with the Center for Urban Community Services (CUCS), a major community-based organization in New York City that provides training and technical assistance to homelessness service providers nationwide. With support from government and private sources, we are working with CUCS to develop a formal training curriculum along with a ''user-friendly'' library of written materials including manuals, case studies, case recording forms and fidelity measures. CUCS will then add CTI to its ''menu'' of training offerings that include a variety of evidence-based practices and other topics of interest to organizations providing services to people who are homeless and mentally ill.

We view this effort as an important step toward broader dissemination of CTI, but at the same time, we remain aware of the considerable challenges involved in the effective dissemination of empirically-supported interventions in health and social service settings. Future work, for example, must also include attention to the ways in which CTI is consistent with current broad policy initiatives, such as those outlined in long-term plans to end chronic homelessness that numerous localities have recently developed under the aegis of the US Interagency Council on Homelessness. Though it would seem that CTI is indeed compatible with Housing First approaches as well as efforts to improve the practice of routine discharge planning in a variety of health, social service and correctional settings, the specific means through which CTI can be used to complement such initiatives remains to be seen. Furthermore, it will also be important to investigate if and how resources including Medicaid, Medicare, and other funding streams can be used to support the delivery of CTI services in routine practice.

Such challenges have often proved difficult to surmount, even for interventions that have been widely replicated and supported by extensive research (Schoenwald and Hoagwood 2001). Emerging evidence suggests that effective dissemination efforts require a sustained, multifaceted approach incorporating strategies that

explicitly address the values, goals and priorities of multiple stakeholders (Mueser et al. 2003; Services Research and Clinical Epidemiology Workgroup 2006). We plan to pursue such an approach over the next several years through the activities of Columbia University's Center for Homelessness Prevention Studies, a new NIMH-funded national research center emphasizing a research-practice partnership strategy to develop, test, and disseminate evidence-based interventions to prevent homelessness among persons with SMI. We hope that this collaborative strategy, combined with findings emerging from the second generation of CTI research, will lead to further understanding, refinement and diffusion of what we believe is a useful model for reducing the risk of homelessness in our most vulnerable citizens.

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