

# Treatment Research Institute

## Annual Progress Report: 2007 Formula Grant

### Reporting Period

July 1, 2009 – December 31, 2009

### Formula Grant Overview

The Treatment Research Institute received \$148,376 in formula funds for the grant award period January 1, 2008 through December 31, 2009. Accomplishments for the reporting period are described below.

### Research Project 1: Project Title and Purpose

*Computer Assisted Learning in an Outpatient Setting* - The purpose of this project is to assess the feasibility of using a computerized self-learning tool as a supplement to traditional outpatient care received by patients during the course of substance abuse treatment. Several treatment approaches that have met criteria to be classified as “evidence-based” involve teaching substance-dependent patients coping skills to assist them with avoiding future substance use. Currently, skill-teaching is provided primarily in group therapy sessions. This project will assess whether urban, substance-dependent patients will interact with a computerized learning system (called the Therapeutic Education System) to help them learn these coping skills, and also provide an estimate of how strong the effect of a computerized system will be on patient skill learning and patient clinical outcomes.

### Duration of Project

1/1/2008 - 12/31/2009

### Summary of Research Completed

There is a sizable amount of research supporting the use of computerized therapy with certain populations. We wanted to examine the efficacy of a computerized therapy aid aptly named the Therapeutic Education System (TES). Our aim was to address specific questions such as; 1) how and to what extent would counselors employ computerized therapies if they were provided with minimal training in their use, 2) would clients (including those with limited education and exposure to computer technology) still benefit from these computerized therapeutic approaches, 3) finally, would patients use the systems given the typical types of reinforcement that community counselors could provide for their use?

We conducted a two-phase pilot study to explore these questions. We selected the TES (Bickel et al., 2008) as the computerized learning system to test because it is Web-based and thus easily updated and accessed from the client’s home and it covers a broad sampling of therapeutic

material and thus might be attractive to program directors. In the first study phase, we examined the effectiveness of TES plus reinforcement for completing modules; a context similar to that under which its efficacy has been demonstrated, and compared it to a treatment-as-usual control group. In the second phase we examined client and counselor utilization of the TES without reinforcement; a condition more similar to those in community-based clinics.

### **Principal Investigator**

Adam C. Brooks, PhD  
Research Scientist  
Treatment Research Institute  
600 Public Ledger Building  
150 S. Independence Mall West  
Philadelphia, PA 19106

### **Other Participating Researchers**

Kimberly C. Kirby, PhD, Deni Carise, PhD - employed by Treatment Research Institute

### **Expected Research Outcomes and Benefits**

This pilot project is a demonstration study using a computerized learning program to teach evidence-based coping skills to outpatients in abstinence-oriented substance abuse treatment programs in a community setting. It is expected that patients who use the computerized learning system (TES) during the course of their usual outpatient treatment will demonstrate that they are capable of some self-directed learning during the course of their treatment, that they will complete at least 50% of the scheduled computer sessions, and that by the end of the study they will have acquired more coping skill knowledge for dealing with high-risk situations leading to drug use than those patients who did not have access to TES. Furthermore, it is expected that patients who use the TES will also demonstrate superior clinical outcomes, such as better treatment engagement (attending more sessions) and better treatment outcome (longer retention, higher treatment graduation rates, and fewer cocaine positive urine samples during treatment). Finally, we expect to find that when financial incentives are withdrawn in a second pilot study, and brief training is provided to counselors, that clients will continue to use the TES and that counselors will integrate TES content into their drug counseling sessions.

If these outcomes are achieved, they will provide impetus for further study of the TES (and other computerized learning systems) in outpatient settings to determine just how they might be used most effectively to supplement care. Many evidence-based treatments in the substance abuse field are not used in practice; many of these treatments hinge on consistent teaching of coping skills. It is expensive and difficult to train treatment personnel to provide these treatments. If it can be demonstrated that a computerized learning system can help patients acquire these crucial skills, care for substance abuse treatment can be enhanced in a cost-effective manner. It is also likely that such tools would serve as convenient training aids for counselors not familiar with these types of evidence-based treatments. Further knowledge about how these systems might be

used would truly serve the community-based outpatient treatment providers who deliver the majority of care in the US.

### **Summary of Research Completed**

DESIGN OVERVIEW: Our initial analysis of the pilot data from previous work on this award (conducted from 1/1/2008 to 3/1/2009) indicated that patients can and will use the TES when provided with financial reinforcement to do so and made significant clinical gains, satisfying most of our aims listed above. We wondered whether patients would use the TES if they were not reinforced financially, but instead were reinforced only verbally by their counselors, similar to how the TES might be used at a standard treatment program. Our second pilot investigation (phase 2—reported on here) was not a controlled study; it was conducted only to gather preliminary information regarding counselor and client use of TES in the absence of explicit incentives or monitoring and encouragement of researchers.

Five counselors who were interested in using the TES consented to complete a brief training, complete a weekly report on counseling activities, and participate in a focus group. The counselors attended a 2-hour training which provided information on the TES and how they might want to utilize the program in their sessions. Participating counselors were instructed to refer as many clients as they wished over the course of 12 weeks. Clients had unlimited access to the TES and their work on the program was recorded by the research assistant in weekly summaries. The weekly summaries were given to the counselors to view their client's progress. Each week the research assistant also collected a weekly report completed by counselors. This weekly report tracked client referral dates, the percentage of clients referred, the topics discussed in session (if it was TES content), and whether the counselors utilized the client TES summary reports.

Five counselors and 14 patients had already been recruited into this study as of the last annual report. During this reporting period, an additional 4 patients were recruited. Following the end of weekly data collection activities on August 31, 2009, five counselors attended a paid one-hour focus group to provide their feedback on the usability of the TES in their caseloads.

Counselors generally referred only a small portion of their caseloads to work with the TES (around 0-10%). By the halfway point (Week 6), two of the counselors had begun to refer 11-20% of their caseloads. On average, counselors reported discussing TES content with clients over a mean of 1.35 sessions ( $SD = 1.36$ ), and encouraging clients to use the TES a mean of 2.06 times ( $SD = 1.60$ ). During the three-month study 18 clients provided informed consent to use their TES data. Client use of the TES was quite low; only 10 clients (55.5%) completed more than 3 modules. The average number of modules completed by clients was 11.11 ( $SD = 19.57$ ).

Counselor Focus Group Feedback. Overall, counselors reported that they could see real potential in using the TES to engage clients, but they felt in its current form it would only be appropriate for selected clients some of the time. They pointed out that the clients at this inner-city facility were particularly educationally challenged. Counselors generally thought a similar computer-assisted training program would be useful, but that changing the presentation strategy to include more culturally specific references and more “street” language would make it more effective for

their clientele. They reported being less inclined to use the TES when it provided core modules in a set order because clients might be working on something else in therapy, and indicated that the ability to choose modules would be preferable. Counselors also suggested tailoring the modules and ordering them to correspond with specific tasks that clients needed to complete at various stages of treatment would be useful.

Discussion. This two-phase pilot study offers preliminary findings showing that clients in an urban, inner-city clinic will complete a full course of computerized cognitive-behavioral therapy modules when incentives are provided, and that while they require some minimal supervision and monitoring while using the system, that they are capable of navigating the program on their own after some practice. The phase 1 study showed large effects for CBT and HIV prevention knowledge acquisition for clients who used the TES compared to those who were not exposed, moderate-to-large effects in coping skill acquisition, and small effects in frequency and severity of cocaine use. Furthermore, these gains were made with no involvement from the hosting treatment program or the clients' current counselors. Less encouragingly, when cash incentives were not provided (as in phase 2), clients showed a precipitous drop in TES utilization and brief training for counselors in the content and appropriate integration of TES materials into individual sessions yielded only a small number of client referrals to the TES lab and modest engagement between the counselors and clients over TES content.