

Is It ACT Yet? Real-World Examples of Evaluating the Degree of Implementation for Assertive Community Treatment

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Abstract

Despite growing interest in assessment of program implementation, little is known about the best way to evaluate whether a particular program has implemented the intended service to a level that is minimally acceptable to a funding source, such as a state mental health authority. Such is the case for assertive community treatment (ACT), an evidence-based practice being widely disseminated. Using an exploratory, actuarial approach to defining program standards, this study applies different statistical criteria for determining whether or not a program meets ACT standards using the 28-item Dartmouth Assertive Community Treatment Scale. The sample consists of 51 ACT programs, 25 intensive case management programs, and 11 brokered case management programs which were compared to identify levels of fidelity that discriminated between programs, but were still attainable by the majority of ACT programs. A grading system based on mean total score for a reduced set of 21 items appeared to be most attainable, but still discriminated ACT programs from other forms of case management. Implications for setting and evaluating ACT program standards are discussed.

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Fidelity, the degree to which a program model is implemented as intended, has become a subject of great interest in mental health services, from both research and policy perspectives.¹ Indeed, fidelity assessment is the natural union of scientific and practical needs of documenting and describing service provision. Policy and funding decisions increasingly are being made in which fidelity assessments are used to establish standards and to evaluate and certify programs. However, as is often the case, practical needs are moving faster than science. Thus, there is a great need to empirically address the issues of how to determine when a program is faithful enough.

First developed by Stein and Test,² ACT (assertive community treatment) is characterized by a team approach with shared caseloads and frequent staff meetings, intensive community-based services, and a focus on assistance with daily living skills. ACT is an effective treatment approach for people with severe mental illness (SMI), particularly in reducing hospitalizations and maintaining stable housing.³⁻⁵ In addition, ACT has been widely recognized as an evidence-based practice.⁶ For example, the Schizophrenia Patient Outcomes Research Team (PORT) recommended ACT for persons with schizophrenia who are either at high risk for rehospitalization or heavy service users.⁷

Recognizing the effectiveness of ACT for clients with SMI who are heavy users of psychiatric hospitals, many states have adopted ACT as a part of statewide initiatives. A 1996 survey reported 396 ACT teams in 34 states, including 11 states reporting ACT teams in 50% or more of their service areas.⁸ Several influences are expected to accelerate this growth further. In 1996, the National Alliance for the Mentally Ill (NAMI) began vigorously promoting ACT and set a goal of ensuring ACT services in all 50 states by 2002.⁹ One survey reported ACT initiatives in 41 states in 2001.¹⁰ Additionally, in 1999, President Clinton directed the Health Care Financing Administration to authorize ACT as a Medicaid-reimbursable treatment.¹¹

As ACT is being disseminated throughout the United States and abroad, state mental health authorities and other governmental entities are increasingly confronted with policy and funding decisions regarding assessing adequacy of program implementation. States have been establishing standards and accreditation procedures often using the Program of Assertive Community Treatment (PACT) start-up manual¹² and checklist as a guide. Similarly, in recognition of ACT's growing acceptance, the accrediting commission for rehabilitation facilities in the United States issued standards for ACT programs.¹³ To the authors' knowledge, however, none of these checklists have been evaluated empirically for their adequacy.

The most systematic approach to assessing fidelity, and the monitoring tool recommended by the Implementing Evidence-Based Practices Project,¹⁴ is the Dartmouth Assertive Community Treatment Scale (DACTS).¹⁵ The DACTS is a 28-item, interviewer-administered instrument that ostensibly provides a continuous measure of fidelity. The DACTS discriminates ACT from other types of case management programs,¹⁵ and high scores on 2 precursors of the DACTS were associated with improved client outcomes.^{16,17} Although these early efforts are promising for establishing the general validity of the construct of ACT fidelity, these studies have not addressed the practical question of when is adherence to the program model "good enough" from the standpoint of accreditation. In other words, no overall cutoff score or other methodology has been established for determining whether a particular program has surpassed a threshold to qualify as ACT. Indeed, many have struggled with how to define what is good or even adequate implementation.

The importance of establishing a dichotomous "pass/fail" standard for achieving ACT is evident from experiences within state systems faced with decisions regarding accreditation of programs, on which funding often hinges. Which programs are qualified to bill as an ACT service? Which ones are substandard? An overall criterion for achievement of the status of being an ACT program is not trivial, but has far-reaching financial ramifications.

Typically, there are 2 broad ways to interpret assessment results: *norm-referenced* and *criterion-referenced*.¹⁸ Norm-referenced interpretation involves comparison of a target individual (or, in this case, an individual program) to a large, representative group of individuals. For example, one might compare fidelity scores of a particular ACT program to scores from other ACT programs.

Criterion-referenced interpretation refers to comparisons between the target and standards. These comparisons may be (a) *self*-referenced, in which scores of a single target program are compared to the program's own scores over time; (b) *content*-referenced, in which a specific standard or absolute criterion is used (eg, a program's score is compared to an ideal such as 90% correct); or (c) *expectancy*-referenced, which involves the prediction of performance based on external criteria (eg, comparing a program's score to a score that has been shown to be associated with desired client outcomes).

The ability to apply these different methods of assessment interpretation to ACT programs is variable. Although there are now several published descriptions of applications of the DACTS,^{15,19-22} no published study has provided a large norm-referenced sample of ACT programs. Self-referenced criteria may be beneficial, particularly for monitoring programs over time. However, this approach does not help initial "selection," ie, determining whether or not a particular program meets requirements. Content-referenced criteria may be helpful at the current stage of ACT fidelity scale development. However, criteria are still relatively arbitrary (eg, 90% vs 80% implementation). Ultimately, expectancy-referenced criteria are ideal, in that cutoff scores can be identified on the basis of evidence of which scores predict best performance. However, studies are just beginning to look at the relationship between fidelity and outcomes.^{4,16,17} Because little guidance is available for the best way to determine how much is enough when it comes to ACT fidelity, data were pooled from several sources to evaluate the effects of applying different criteria for determining whether or not a program meets ACT standards using the DACTS.

State administrators and program planners are searching for clear criteria for what constitutes ACT. In the absence of definitive research linking specific levels of ACT standards to outcomes, the authors propose to bootstrap the process by using available data to stitch together a set of standards based on a pragmatic method of combining norm-based and criterion-based methods. Central to this notion is the concept of *attainability*, that is, that standards are set low enough so that programs can reasonably be expected to achieve the standards. At the same time, standards must be high enough to meaningfully differentiate desired practices from usual services. Up to now, standards have often been established solely by clinical judgments of experts. The current effort attempts to apply empirical methods.

Method

Sample description

Illinois State ACT sample

This sample included 10 newly established ACT teams. In January 1994, the Illinois Office of Mental Health (OMH) funded the Illinois ACT Project, a statewide initiative to develop ACT programs for frequent users of state psychiatric hospitals. The guiding principle was to establish new ACT teams in communities having the highest rates of heavy users of state hospitals, with some adjustments for geographic balance (eg, inclusion of rural sites). Twelve service providers were funded to develop new ACT teams that were intended to be permanent additions to the service array in each locality. OMH provided guidelines for program implementation that were generally consistent with ACT principles but that included 2 relaxed criteria (client-to-staff ratio not to exceed 15:1, rather than 10:1, and team meetings held at least twice a week, rather than daily) and some criteria that were not specific, eg, "a psychiatrist is part of the team" (without specifying hours of involvement) and "services are flexible in terms of hours of operation, place or settings in which services are provided" (without specifying percentage of contact in the community). A list of guidelines provided by the state is available from the first author.

Program implementation was assessed using the DACTS as part of the evaluation of the Illinois (IL) ACT Project.²³ An independent research team completed the DACTS ratings on the basis of a structured interview conducted with the clinical team leader during a site visit. The site visit also

included interviews with a case manager other than the team leader as well as observation of team functioning and examination of client charts. Two of the programs were not fully operational during the fidelity assessment; thus, only 10 programs are included in the sample.

New York State ACT sample

The New York (NY) sample consisted of 27 ACT teams, the majority of which were started in 1995. In 2000 the NY State OMH undertook a renewed statewide focus on using evidence-based treatments and practices as the foundation of the structural and clinical framework of the NY mental health system. As part of this initiative OMH expanded capacity for ACT across the state and developed program and fiscal regulations that were supported by Medicaid and that provided direction for integrating other evidence-based practices within the ACT model.

Part of this effort included an assessment of the current implementation of ACT programs in NY. The aim of this assessment was to identify teams with strong implementation of the ACT model and to identify those teams and specific areas that needed improvement so that support could be given to assist programs to fully implement the new regulations.²⁴ Prior to this fidelity assessment, OMH had provided general program implementation guidelines specifying a multidisciplinary staff composition, a low staff-to-caseload ratio (1:8), hours of operation, target population, and location and types of services.

Each program was asked to provide at least 2 key informants (the program director and one or more line staff) to be interviewed together. When disagreements between informants occurred, fidelity ratings were based on the consensus of the 2 informants. At one site, only the program director (who also provided direct services) was available for the interview. NY State OMH and NY City Department of Mental Health staff (1 interviewer per site) conducted interviews with program informants, primarily by telephone.

East Coast ACT sample

This sample included 14 ACT programs undergoing evaluation within 5 separate studies of ACT effectiveness conducted between 1989 and 1995.^{25–29} Two studies included 1 site each, 2 studies included 2 sites each, and 1 study included 7 sites. All of these programs were designed to implement as closely as possible the essential features of the ACT model as inferred from personal communication and published descriptions—at the time these programs were developed, there were no formally established program standards. Researchers closely supervised the programs, albeit with varying degrees of formal authority over program implementation. In addition, 7 sites in this group were designed to evaluate the addition of integrated treatment for co-occurring substance use disorders to the basic ACT model and were monitored using a precursor of the DACTS.^{26,30}

Intensive case management sample

The intensive case management sample consisted of 25 programs: a combination of 10 sites from the VA Intensive Psychiatric Community Care (IPCC) Program and 15 sites from the Access to Community Care and Effective Services and Supports (ACCESS) Program.^{31,32} Data from these programs were combined in the current study to form a reference group of intensive case management programs that fell on a continuum between ACT and traditional case management programs.¹⁵

The intensive psychiatric community care programs were implemented in the Department of Veteran Affairs for persons with SMI who were high users of hospital services.^{33,34} Programs were implemented and evaluated in 10 sites during the period from 1987 to 1995. The Intensive Psychiatric Community Care Model was similar to the Madison PACT Model in several respects. Intensive Psychiatric Community Care Model was explicitly designed to provide the service intensity clinically indicated for any client, program size was approximately 45 clients, and caseload ratios ranged from 1:7 to 1:15. Services were provided as much as possible in community settings and continuity of

care was assured by assertively maintaining contact with and responsibility for each client. However, there was less emphasis on a team focus than in the Madison Model, the staff members were less independent of other programs, and clients were also involved in other service programs.

The ACCESS Project evaluated the impact of increases in system integration on persons with SMI who were homeless in 18 study sites in 9 cities in the United States. Individual service programs were not intended to be replications of ACT, but they shared many features, including multidisciplinary team organization, assertive treatment approaches, and extensive service responsibility. Intentional departures from the usual ACT model included an explicit expectation of time-limited client length-of-stay and, in many cases, structural separation of outreach functions. The set of ACCESS programs was the product of separate proposals from each state. Thus, there was considerable variation in the programs, and there was no top-down mandate regarding structural specifications, although there was much implicit encouragement toward ACT-like programs.²⁰

Brokered case management sample

The traditional brokered group was composed of 11 programs that served as control sites for the East Coast ACT programs. This group used standard case management models in comprehensive community mental health treatment settings. Programs had been part of ongoing service systems for many years and reflected the normal variation across multiple service jurisdictions. Overall, case managers in these programs had individual responsibility for connecting clients with services and supports and assumed little to no responsibility for providing other services directly. Caseload ratios ranged from 28 to 60 clients per clinician.

Data collection for the East Coast ACT sample, the intensive case management sample, and the brokered sample took place between August 1995 and January 1996. The DACTS, along with a structured interview, was distributed to principal investigators in the ACT and VA IPCC research studies. Guidelines were provided to each rater, specifying data sources and potential issues in definition and interpretation. Formal study periods for the VA and some of the ACT programs had recently concluded at that time, and so ratings of these and the brokered programs were made retrospectively. However, each research team was very familiar with its programs on the basis of extensive data collection and observation of both experimental and control groups. The central research team on the basis of extensive data collection and observation as well as provisional ratings and other information made final ratings of the VA IPCC programs from site managers. Ratings for ACCESS sites were made by investigators responsible for the evaluation component within each state using preliminary ratings based on structured interviews with several selected informants from each site. Informants varied in their familiarity with the content of specific items, and so raters weighted their responses accordingly in making the final composite ratings.

Measures

The DACTS¹⁵ was used to rate fidelity of the programs in each of the samples. The DACTS is a 28-item scale that assesses the degree of fidelity to the ACT model along 3 dimensions: *human resources* (eg, small caseload, psychiatrist on staff), *organizational boundaries* (eg, explicit admission criteria), and *nature of services* (eg, in vivo services). Each item is rated on a 5-point behaviorally anchored scale, ranging from 1 = not implemented to 5 = fully implemented. The standards used for establishing the anchors for the "fully-implemented" ratings were determined through a variety of sources, including published reports from the ACT model developers, semi-structured interviews with ACT experts who rated key ingredients and specified ideal levels of ingredients,³⁵ and results from a study that correlated fidelity items with outcomes.¹⁶ Two items have been added to the original 26 to assess program staff size and role of consumers on the team. However, these items were not available for the majority of the interviews and consequently were excluded from the analyses in the current paper.

Data analysis

First, mean scores were examined at the item level for each of the samples, using analyses of variance and Tukey's post hoc analyses to detect specific differences between samples. Next, the number and percentage of programs scoring a 5, or scoring a 4 or 5, on each item were examined to identify levels of implementation that were attained but that still differentiated ACT from other forms of case management. Scores for each item were identified in which (a) 50% or more of ACT teams met the criterion (either a 4 or 5) and (b) the criterion still appeared to differentiate between ACT and brokered and also differentiated between ACT and intensive case management. The degree of differentiation was examined by computing chi-squares to test the difference between ACT and the other 2 samples on the specific criterion for that item. Finally, the impact of differential grading criteria was examined by applying different standards to the sample to identify the percentage of programs that might be considered faithful to the ACT model.

Results

Mean scores for each DACTS item for the 3 ACT samples, the intensive case management sample, and the brokered sample are shown in Table 1. Within the ACT sample, the 3 subgroups differed significantly from each other on 8 items. IL ACT programs scored significantly lower than the other 2 samples on *H3: Frequency of program meeting*, *H5: Continuity of staffing*, *H7: Psychiatrist on staff*, and *H8: Nurse on staff*. Three of these items reflect the slightly relaxed standards of the IL OMH guidelines at the time of the evaluation. Compared to other ACT programs, the NY programs reported less *O6: Responsibility for hospital discharge planning* and less *S3: Use of assertive engagement mechanisms*. East Coast ACT teams scored lower on *S1: In vivo services* and *S6: Work with support system*. None of the ACT samples was consistently lower than the other ACT samples in overall fidelity, a finding that supports analyzing the ACT samples as one group.

As expected, the 3 samples (ACT, intensive case management, and brokered) differed significantly on almost all items (exceptions were *H6: Staff capacity*, *H10: Vocational specialist*, and *S8: Dual disorder treatment groups*). Post hoc analyses indicated that together the 51 ACT teams scored significantly higher ($p < .05$) than brokered on 22 of 26 items and significantly higher than intensive case management on 17 items.

The percentage of teams reaching full implementation on individual DACTS items also clearly differentiated ACT programs from brokered, as shown in Table 2. There were only 7 items out of 26 (27%) on which *any* brokered program scored a 5. Using the standard of 4, there were 13 (50%) items on which any of the brokered programs scored at least a 4.

Because the comparison with brokered appeared too lenient to establish standards, standards were examined that would differentiate ACT from intensive case management on an item-by-item basis. Based on examination of the distribution of scores for each item, the level at which at least 50% of the ACT teams had achieved the desired score (either a 5 or a 4) as well as the level that appeared to differentiate ACT from the intensive case management sample the most were identified. For example, on item *H1: Small caseload*, 73% of the ACT teams scored a 5 and 96% of the ACT teams scored at least a 4. However, because the majority of intensive case management programs attained a 4 (92%), but relatively few attained a 5 (28%), 5 was chosen as the criterion that was attainable for ACT, but that still differentiated ACT from both other samples.

Response anchor criterion levels (either 4 or 5) for each item are shown in Table 3. Five items either did not have at least 50% of the ACT teams attaining a score of 4 or more and/or did not discriminate between ACT and the other samples. These items were *H5: Continuity of staffing*, *H6: Staff capacity*, *H10: Vocational specialist on team*, *S8: Dual disorders treatment groups*, and *S9: Dual disorders treatment model*. Each of the remaining 21 items significantly discriminated ACT from brokered, and 14 of the 21 items discriminated ACT from intensive case management.

Table 1

Comparison of DACTS 26-item means across treatment models

| Item | M (SD) | | | | | F | Post hoc |
|--|--------------------------|--------------------------|----------------------------|-----------------|-----------------|-------|----------------|
| | New York ACT (N = 27) | Illinois ACT (N = 10) | East Coast ACT (N = 14) | ICM (N = 25) | BRK (N = 11) | | |
| Human resources (H) | 3.7 (0.6) | 3.3 (0.3) | 4.0 (0.4) | 3.4 (0.5) | 2.4 (0.3) | 20.3* | ACT > ICM, BRK |
| H1: Small caseload | 4.8 (0.6) | 4.6 (0.5) | 4.6 (0.5) | 4.1 (0.8) | 2.5 (0.5) | 29.6* | ACT > ICM, BRK |
| H2: Team approach | 3.9 (1.1) | 3.8 (0.8) | 3.6 (1.2) | 2.9 (1.3) | 1.1 (0.3) | 14.9* | ACT > ICM, BRK |
| H3: Program meeting | 4.4 (0.7) | 3.9 (1.0) | 4.9 (0.3) | 3.6 (1.1) | 2.8 (0.8) | 12.5* | ACT > ICM, BRK |
| H4: Practicing team leader | 4.3 (0.7) | 4.5 (0.9) | 4.4 (0.9) | 3.9 (1.2) | 2.9 (1.5) | 4.8* | ACT > BRK |
| H5: Continuity of staffing | 3.3 (1.3) | 2.0 (1.1) | 4.1 (1.4) | 4.0 (0.8) | 3.9 (0.9) | 6.7* | |
| H6: Staff capacity | 3.7 (1.3) | 3.9 (0.9) | 4.6 (0.7) | 4.1 (0.8) | 4.2 (0.6) | 1.9 | |
| H7: Psychiatrist on staff | 3.9 (1.2) | 2.9 (1.2) | 4.4 (1.1) | 3.2 (1.3) | 1.9 (0.5) | 9.3* | ACT > ICM, BRK |
| H8: Nurse on staff | 4.5 (0.9) | 1.9 (1.7) | 4.6 (0.9) | 3.5 (1.5) | 2.2 (1.1) | 14.2* | ACT > ICM, BRK |
| H9: Substance abuse specialist | 2.9 (1.9) | 3.2 (1.9) | 3.1 (1.8) | 3.0 (1.7) | 1.2 (0.6) | 2.9† | ACT > BRK |
| H10: Vocational specialist | 1.7 (1.4) | 2.0 (1.7) | 3.1 (1.8) | 1.9 (1.4) | 1.4 (0.5) | 0.4 | |
| Organizational (O) boundaries | 4.3 (0.4) | 4.6 (0.3) | 4.3 (0.5) | 3.6 (0.5) | 2.5 (0.4) | 42.6* | ACT > ICM, BRK |
| O1: Explicit admission criteria | 4.4 (0.9) | 5.0 (0.0) | 4.4 (0.7) | 4.5 (0.5) | 1.9 (0.3) | 39.4* | ACT > BRK |
| O2: Intake rate | 4.9 (0.4) | 5.0 (0.0) | 5.0 (0.0) | 4.5 (0.7) | 3.1 (1.4) | 18.2* | ACT > ICM, BRK |
| O3: Full responsibility for treatment services | 4.3 (0.7) | 4.4 (0.7) | 4.0 (0.7) | 3.6 (1.0) | 1.6 (0.5) | 25.5* | ACT > ICM, BRK |
| O4: Responsibility for crises services | 4.1 (1.1) | 4.2 (0.8) | 3.7 (1.4) | 3.0 (1.3) | 1.7 (0.5) | 10.9* | ACT > ICM, BRK |
| O5: Responsibility for hospital admissions | 4.2 (0.8) | 4.2 (1.0) | 3.9 (0.8) | 3.7 (1.0) | 2.4 (0.7) | 8.9* | ACT > BRK |
| O6: Responsibility for hospital discharge planning | 3.8 (1.4) | 4.8 (0.4) | 4.5 (0.7) | 3.6 (1.1) | 3.2 (1.0) | 4.5* | |
| O7: Time-unlimited svcs. | 4.4 (0.8) | 4.7 (0.7) | 4.6 (0.5) | 2.5 (1.6) | 3.6 (0.8) | 15.4* | ACT > ICM, BRK |

(continues)

Table 1
(Continued)

| Item | <i>M (SD)</i> | | | | | <i>F</i> | Post hoc |
|--|----------------------------------|----------------------------------|------------------------------------|-------------------------|-------------------------|----------|----------------|
| | New York ACT (<i>N</i> = 27) | Illinois ACT (<i>N</i> = 10) | East Coast ACT (<i>N</i> = 14) | ICM (<i>N</i> = 25) | BRK (<i>N</i> = 11) | | |
| Nature of services (S) | 3.8 (0.5) | 4.1 (0.3) | 3.8 (0.4) | 2.9 (0.6) | 2.2 (0.6) | 33.6* | ACT > ICM, BRK |
| S1: In vivo services | 4.4 (0.9) | 4.2 (0.6) | 3.5 (0.9) | 3.5 (1.0) | 2.3 (0.8) | 12.9* | ACT > ICM, BRK |
| S2: No dropout policy | 4.3 (1.1) | 4.5 (0.7) | 4.2 (1.1) | 3.5 (1.2) | 3.0 (0.6) | 5.4* | ACT > ICM, BRK |
| S3: Assertive engagement | 4.1 (0.8) | 5.0 (0.0) | 4.4 (1.0) | 3.7 (1.1) | 3.0 (0.8) | 8.1* | ACT > ICM, BRK |
| S4: Intensity of service | 4.3 (1.0) | 4.6 (0.7) | 4.6 (0.5) | 3.2 (0.9) | 2.2 (1.1) | 18.3* | ACT > ICM, BRK |
| S5: Frequency of contact | 3.3 (1.1) | 3.3 (0.5) | 4.0 (0.8) | 2.5 (0.8) | 2.0 (0.9) | 10.4* | ACT > ICM, BRK |
| S6: Work with support system | 4.2 (1.0) | 4.4 (0.8) | 3.3 (1.0) | 3.4 (0.9) | 1.9 (0.3) | 15.1* | ACT > ICM, BRK |
| S7: Individualized substance abuse treatment | 3.7 (1.7) | 4.1 (1.4) | 3.7 (1.2) | 2.1 (1.5) | 1.5 (0.5) | 9.2* | ACT > ICM, BRK |
| S8: Dual disorder (DD) treatment groups | 2.7 (1.6) | 2.8 (1.7) | 3.1 (1.2) | 2.2 (1.5) | 1.5 (0.8) | 2.1 | |
| S9: DD model | 3.3 (1.0) | 3.6 (0.5) | 3.3 (0.9) | 2.2 (1.1) | 1.9 (0.9) | 9.7* | ACT > ICM, BRK |
| Total scale | 3.9 (0.4) | 3.9 (0.2) | 4.0 (0.4) | 3.3 (0.3) | 2.3 (0.4) | 48.9* | ACT > ICM, BRK |

Note: ACT indicates assertive community treatment; ICM, intensive case management; and BRK, brokered.

**p* < .001.

†*p* < .05.

Table 2

Number of programs scoring 5 and number scoring at least 4 on each DACTS item

| Item | <i>n</i> (%) scoring 5 | | | <i>n</i> (%) scoring 4 or 5 | | |
|--|-------------------------|-------------------------|-------------------------|-----------------------------|-------------------------|-------------------------|
| | ACT (<i>N</i> = 51) | ICM (<i>N</i> = 25) | BRK (<i>N</i> = 11) | ACT (<i>N</i> = 51) | ICM (<i>N</i> = 25) | BRK (<i>N</i> = 11) |
| H1: Small caseload | 37 (72.5) | 7 (28.0) | 0 | 49 (96.1) | 23 (92.0) | 0 |
| H2: Team approach | 15 (29.4) | 3 (12.0) | 0 | 31 (60.8) | 9 (36.0) | 0 |
| H3: Program meeting | 30 (58.8) | 6 (24.0) | 0 | 45 (88.2) | 14 (56.0) | 1 (9.1) |
| H4: Practicing team leader | 29 (56.9) | 10 (40.0) | 2 (18.2) | 43 (84.3) | 17 (68.0) | 5 (45.5) |
| H5: Continuity of staffing | 15 (29.4) | 6 (24.0) | 4 (36.4) | 24 (47.1) | 19 (76.0) | 6 (54.5) |
| H6: Staff capacity | 22 (43.1) | 8 (32.0) | 3 (27.3) | 35 (68.2) | 21 (84.0) | 10 (90.9) |
| H7: Psychiatrist on staff | 23 (45.1) | 5 (20.0) | 0 | 29 (56.9) | 10 (40.0) | 0 |
| H8: Nurse on staff | 31 (60.8) | 10 (40.0) | 1 (9.1) | 37 (72.5) | 14 (56.0) | 1 (9.1) |
| H9: Substance abuse specialist | 20 (39.2) | 9 (36.0) | 0 | 25 (49.0) | 11 (44.0) | 0 |
| H10: Vocational specialist | 6 (11.8) | 3 (12.0) | 0 | 8 (15.7) | 6 (24.0) | 0 |
| O1: Explicit admission criteria | 33 (64.7) | 12 (48.0) | 0 | 45 (88.2) | 25 (100) | 0 |
| O2: Intake rate | 48 (94.1) | 14 (56.0) | 1 (9.1) | 48 (94.1) | 23 (45.1) | 6 (54.5) |
| O3: Full responsibility for treatment services | 19 (37.3) | 3 (12.0) | 0 | 45 (88.2) | 16 (64.0) | 0 |
| O4: Responsibility for crises services | 23 (45.1) | 4 (16.0) | 0 | 35 (68.6) | 8 (32.0) | 0 |
| O5: Responsibility for hospital admissions | 19 (37.3) | 5 (20.0) | 0 | 41 (80.4) | 18 (72.0) | 0 |
| O6: Responsibility for hospital discharge planning | 28 (54.9) | 4 (16.0) | 1 (9.1) | 40 (78.4) | 18 (72.0) | 4 (36.4) |
| O7: Time-unlimited services | 32 (62.7) | 2 (8.0) | 1 (9.1) | 46 (90.2) | 10 (40.0) | 7 (63.6) |
| S1: In vivo services | 22 (43.1) | 4 (16.0) | 0 | 39 (76.5) | 12 (48.0) | 0 |
| S2: No dropout policy | 28 (54.9) | 4 (16.0) | 0 | 46 (90.2) | 15 (60.0) | 2 (18.2) |
| S3: Assertive engagement mechanisms | 29 (56.9) | 5 (20.0) | 0 | 41 (80.3) | 18 (72.0) | 3 (27.3) |
| S4: Intensity of service | 32 (62.7) | 3 (12.0) | 0 | 45 (88.2) | 7 (28.0) | 4 (18.2) |
| S5: Frequency of contact | 10 (19.6) | 0 | 0 | 24 (47.1) | 5 (20.0) | 1 (9.1) |
| S6: Work with support system | 22 (43.1) | 3 (12.0) | 0 | 33 (64.7) | 12 (48.0) | 0 |
| S7: Individualized substance abuse treatment | 26 (51.0) | 3 (12.0) | 0 | 34 (67.0) | 5 (20.0) | 0 |
| S8: Dual disorder (DD) treatment groups | 11 (21.6) | 4 (16.0) | 0 | 16 (31.3) | 5 (20.0) | 0 |
| S9: DD model | 5 (9.8) | 0 | 0 | 17 (33.3) | 1 (4.0) | 1 (9.1) |

Note: ACT indicates assertive community treatment; ICM, intensive case management; BRK, brokered.

Impact of different grading systems

This stage of the analysis involved a trial-and-error process to discover the “best” grading system, using different intuitively plausible schemes. The criteria used to decide among the different grading systems were (1) capacity to differentiate between ACT and non-ACT programs and (2) attainability. Five grading systems were examined.

5-Point scale grading system (26-item version)

Using mean total scores, the percentage of programs that would receive different grades on the basis of that score were identified. Thus, on the 5-point DACTS scale, an average score of 4.5

Table 3

Percentage of programs passing selected 21 DACTS items* at designated cutoff

| Item | Score | Designated cutoffs Criteria | % | | | | X | |
|--|-----------------|--|-----------------|-----------------|-----------------|-------------------|-------------------|--|
| | | | ACT (N = 51) | ICM (N = 25) | BRK (N = 11) | ACT vs ICM | ACT vs BRK | |
| H1: Small caseload | 5 | ≤10 clients/clinician | 72.5 | 28.0 | 0 | 13.7 [†] | 19.8 [†] | |
| H2: Team approach | 4 | 64%–89% clients have contact with >1 staff per week | 60.8 | 36.0 | 0 | 4.1 [†] | 13.4 [†] | |
| H3: Program meeting | 5 | Program meets at least 4 d/wk and reviews each client each time | 58.8 | 24.0 | 0 | 8.2 [§] | 12.5 [†] | |
| H4: Practicing team leaders | 5 | Supervisor provides services at least 50% of time | 56.9 | 40.0 | 18.2 | 1.9 | 5.4 [†] | |
| H7: Psychiatrist on staff | 4 | Psychiatrist at .70–.99 FTE per 100 clients | 56.9 | 40.0 | 0 | 1.9 | 11.8 [†] | |
| H8: Nurse on staff | 5 | ≥2 full-time nurses are members of a 100 client program | 60.8 | 40.0 | 9.1 | 2.9 | 9.7 [§] | |
| H9: Substance abuse specialist on staff | 4 | 1.40–1.99 FTE with 1 y S/A training or supervised S/A experience per 100 clients | 49.0 | 44.0 | 0 | 0.2 | 9.0 [§] | |
| O1: Explicit admission criteria | 5 | The program actively recruits a defined population and all cases comply with explicit admission criteria | 64.7 | 48.0 | 0 | 1.9 | 15.2 [†] | |
| O2: Intake rate | 5 | Highest monthly intake rate in the last 6 mo no greater than 6 clients/mo | 94.1 | 56.0 | 9.1 | 16.2 [†] | 39.5 [†] | |
| O3: Full responsibility for treatment services | 4 | Program offers 3 or 4 of 5 additional services and refers externally for others [†] | 88.2 | 64.0 | 0 | 6.2 [†] | 35.4 [†] | |
| O4: Responsibility for crisis services | 4 | Program provides emergency service backup; eg, program is called, makes decision about need for direct program involvement | 68.6 | 32.0 | 0 | 9.2 [§] | 17.3 [†] | |
| O5: Responsibility for hospital admissions | 4 | 65%–94% of admissions are initiated through the program | 80.4 | 72.0 | 0 | 0.7 | 26.1 [†] | |
| O6: Responsibility for hospital discharge planning | 5 | 95% or more discharges are planned jointly with the program | 54.9 | 16.0 | 9.1 | 10.4 [†] | 7.6 [§] | |

(continues)

Table 3
(Continued)

| Item | Score | Designated cutoffs Criteria | % | | | χ | |
|--|-----------------|--|-----------------|-----------------|-----------------|-------------------|-------------------|
| | | | ACT (N = 51) | ICM (N = 25) | BRK (N = 11) | ACT vs ICM | ACT vs BRK |
| O7: Time unlimited services | 5 | All clients are served on a time-unlimited basis, with fewer than 5% expected to graduate annually | 62.7 | 8.0 | 9.1 | 20.3 [†] | 10.5 [†] |
| S1: In vivo services | 4 | 60%–79% of total service time is in community | 76.5 | 48.0 | 0 | 6.2 [‡] | 22.7 [†] |
| S2: No dropout policy | 5 | 95% or more of caseload is retained over a 12-mo period | 54.9 | 16.0 | 0 | 10.4 [†] | 11.0 [†] |
| S3: Assertive engagement mechanisms | 5 | Program demonstrates consistently well-thought-out strategies and uses street outreach and legal mechanisms whenever appropriate | 56.9 | 20.0 | 0 | 9.2 [§] | 11.8 [†] |
| S4: Intensity of services | 5 | Average of ≥2 h/wk per client | 62.7 | 12.0 | 0 | 17.4 [†] | 14.3 [†] |
| S5: Frequency of contact | 4 | Average of 3–4 contacts/wk per client | 47.1 | 20.0 | 9.1 | 5.2 [‡] | 5.4 [‡] |
| S6: Work with support system | 4 | 2–3 contacts/mo per client with support system in community (ie, family, landlords, and employers) | 64.7 | 48.0 | 0 | 1.9 | 15.2 [†] |
| S7: Individualized substance abuse treatment | 5 | Clients with substance use disorders spend 24 min/wk or more in substance abuse treatment | 51.0 | 12.0 | 0 | 10.8 [†] | 9.7 [§] |

Note: ACT indicates assertive community treatment; ICM, intensive case management; and BRK, brokered.

*Items H5, H6, H10, S8, and S9 were excluded because they did not discriminate between programs.

[†] $p \leq .001$.

[‡] $p \leq .05$.

[§] $p \leq .01$.

^{||} Cutoff score set despite <50% of ACT programs passing at this level.

[¶] Other services in addition to case management and psychiatric services include counseling/psychotherapy, housing support, substance abuse treatment, employment, and rehabilitative services.

Table 4
Program fidelity report cards based on overall mean DACTS scores

| Program | <i>n</i> (%) | | | | |
|---|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|
| | A mean score 5.0–4.5 | B mean score 4.4–4.0 | C mean score 3.9–3.5 | D mean score 3.4–3.0 | F mean score 2.9–0.0 |
| Model 1: Using original 26 items | | | | | |
| ACT (<i>N</i> = 51) | 3 (5.9) | 24 (47.1) | 19 (37.3) | 5 (9.8) | 0 |
| ICM (<i>N</i> = 25) | 0 | 0 | 5 (20.0) | 18 (72.0) | 2 (8.0) |
| BRK (<i>N</i> = 11) | 0 | 0 | 0 | 1 (9.1) | 10 (90.9) |
| Model 2: Using 21 items (shown in Table 3) | | | | | |
| ACT (<i>N</i> = 51) | 7 (13.7) | 30 (58.8) | 12 (23.5) | 2 (3.9) | 0 |
| ICM (<i>N</i> = 25) | 0 | 1 (4.0) | 7 (28.0) | 16 (64.0) | 1 (4.0) |
| BRK (<i>N</i> = 11) | 0 | 0 | 0 | 1 (9.1) | 10 (90.9) |
| Model 3: Using 21 items with recalibrated* scores | | | | | |
| ACT (<i>N</i> = 51) | 14 (27.5) | 29 (56.9) | 7 (13.7) | 1 (2.0) | 0 |
| ICM (<i>N</i> = 25) | 0 | 4 (16.0) | 10 (40.0) | 10 (40.0) | 1 (4.0) |
| BRK (<i>N</i> = 11) | 0 | 0 | 0 | 1 (9.1) | 10 (90.9) |

Note: ACT indicates assertive community treatment; ICM, intensive case management; and BRK, brokered.
*Based on designated cutoff scores shown in Table 3, a score of 4 on items H2, H7, H9, O3, O4, O5, S1, S5, and S6 was considered a “5”—all other scores remained unchanged.

corresponds to an “A,” a score of 4.0 corresponds to moderately implemented (ie, a “B”), and so on. As shown in Table 4, using mean scores on the overall 26-item DACTS, 6% of ACT programs would receive an A, an additional 47% would receive a B, 37% a C, and 10% a D. None of the ACT programs failed (ie, fell below 60%) using this grading system. By contrast, 12% of intensive case management programs and 91% of brokered programs failed using this grading system. This first grading system performed well discriminating programs and relatively well on attainability.

5-Point scale grading system (21-item version)

Table 4 also displays grades using the mean of 21 items (the 21 items significantly discriminating ACT from brokered case management). This grading system resulted in a greater number of ACT and intensive case management programs achieving higher grades, yet did not alter the results of the brokered programs.

Recalibrated 5-point scale grading system (21-item version)

The third model shown in Table 4 is a recalibrated mean score in which the items that had a criterion of 4 as passing were then recoded to be a 5. In essence, the criterion of 4 became a perfect score for those 9 items. Again, the percentage of ACT and intensive case management programs with higher grades increased, but the percentages for brokered programs did not change.

Item pass-fail grading system (26-item version)

More stringent grading criteria are displayed in Table 5. In this approach, each item is scored as a pass or fail. The first example is using a 5 as the level of passing for each item. No programs “passed” at least 80% of the items when the criterion for passing was a 5. Of the ACT programs, 6% would receive a C, 10% would receive a D, and 84% would fail.

Table 5
Program fidelity report cards based on the percentage of items passed

| Program | n (%) | | | | |
|--|--------------|-------------|-------------|-------------|------------|
| | A (100%–90%) | B (89%–80%) | C (79%–70%) | D (69%–60%) | F (59%–0%) |
| Model 4: Percentage of items passed with score of 5 on 26-item DACTS | | | | | |
| ACT (N = 51) | 0 | 0 | 3 (5.9) | 5 (9.8) | 43 (84.3) |
| ICM (N = 25) | 0 | 0 | 0 | 0 | 25 (100) |
| BRK (N = 11) | 0 | 0 | 0 | 0 | 11 (100) |
| Model 5: Percentage of items passed based on designated cutoffs on 21-item DACTS | | | | | |
| ACT (N = 51) | 2 (3.9) | 7 (13.7) | 9 (17.6) | 13 (25.5) | 20 (39.2) |
| ICM (N = 25) | 0 | 0 | 1 (4.0) | 0 | 24 (96.0) |
| BRK (N = 11) | 0 | 0 | 0 | 0 | 11 (100) |

Note: ACT indicates assertive community treatment; ICM, intensive case management; and BRK, brokered.

Item pass-fail grading system (21-item version)

The second example shown in Table 5 uses the new cutoff points for the 21 items that discriminated ACT from intensive case management and brokered programs. Thus, the criteria used in Table 3 became the new level of “passing” for the items. Using this approach, 4% of ACT program passed at least 90% of the items and 14% passed at least 80% of the items. However, 39% of ACT teams would still fail. All of the brokered and 96% of the intensive case management programs also failed.

Discussion

The increasing pressure to develop methods for documenting fidelity of ACT programs comes from many sources. With the move toward Medicaid reimbursement¹⁴ and several statewide adoptions of ACT, the ability to document that a program is truly ACT is paramount.³⁶ However, the development of criterion-based methods for evaluating the fidelity of ACT and other mental health service programs is still in the early stages. In this article, item-level descriptions are provided for 51 ACT programs, a relatively large group of programs with which other programs can compare themselves using the DACTS. For example, the East Coast programs provide a context for what types of scores are possible within a context of research with funding and resources to support implementation consistent with program fidelity requirements.

The descriptive data also point to particular challenges for ACT teams. Most ACT programs had difficulty meeting criteria for maintaining staff continuity and full staff capacity. This finding is not surprising given the difficulties recruiting and retaining qualified staff in the mental health field.³⁷ Many ACT teams also did not meet specialist role criteria of having a vocational specialist on the team, providing dual disorders treatment groups, and employing an integrated dual disorders treatment model. This lack of fidelity may reflect a lack of explicit direction from state authorities to include these activities or lack of targeted funding for these positions. Although many programs in the current sample did not attain these items, the items may not be less critical. Indeed, supported employment³⁸ and integrated dual disorders treatment³⁹ have been identified as evidence-based practices. However, ACT programs may need more assistance in implementing these components. Ideally, the Implementing Evidence-Based Practices Project will help address these needs by providing tools and consultation around supported employment and integrated dual disorders treatment.⁴⁰ Consistent with this effort many states are now focusing on the implementation of these practices. For example,

in 2000 NY state initiated a campaign to integrate a set of core evidence-based practices within its mental health system.⁴¹

In addition to providing comparative data, different criterion-based methods for evaluating ACT programs were examined by applying different cutoff points to the DACTS. From this trial-and-error inquiry, the most pragmatic grading system appears to be the 5-point grading system using 21 items (Model 3 in Table 4). This grading system was attainable and also discriminated between ACT and other forms of case management. In contrast, the item pass-fail grading system appeared too strict and therefore unattainable. Even with the empirically revised individual cutoff points for items, only 9 (17%) of the ACT programs would pass at least 80% of the items with the item pass-fail grading system.

In addition to having specific cutoff points, a “provisional” level of passing may be needed in some accrediting contexts. Using the current base of program scores, the criterion may be lowered to 70% of the mean total score as the standard for provisional approval of ACT status. This would allow some programs that are newly developing or that are experiencing temporary difficulties to still achieve ACT status. However, follow-up ratings should then be conducted to ascertain whether improvement to “full” ACT status has occurred.

One potential drawback to the 5-point grading system is that it is compensatory. That is, high scores on some items may offset low scores on other items. However, some items may be more critical to ACT than are others. Research is in the early stages of sorting out which are the most critical ingredients. For example, McGrew et al¹⁶ found that having a nurse on the team, shared caseloads, daily team meetings, team leader provides services, and greater number of contacts were most predictive of hospital outcomes. Further work is needed to replicate and extend these findings of which items may be most critical. Nonetheless, when evaluating programs on fidelity and prioritizing areas for improvement, efforts should focus on the more salient features of the ACT model.

An exploratory approach to examining the impact of differential criteria for accrediting ACT teams was used to recommend a particular way of using the DACTS for this purpose at this stage of art and science. The trial-and-error approach was used because other, more established methods for determining cutoff points are not yet available. As more data accrue that can link specific levels of fidelity with outcomes, other methods for determining cutoff points will be developed. In the meantime, this data-based approach is presented to help people determine acceptable levels of fidelity. Because of the approach taken, there are some limitations that need to be made explicit.

An implicit assumption in the current methodology is that the programs identified as ACT programs were reasonable exemplars of ACT. In the case of the East Coast sample, independent program evaluations lend support to this assertion. The overall effectiveness of these programs has been reported in published reports.²⁵⁻²⁹ Although the outcomes from these studies were variable, the fact that they were part of a rigorous research design lends confidence that the programs were closely monitored to ensure adherence to ACT standards (eg,^{27,30}). In the case of the IL ACT project, no control groups were used, but a pre-post design suggested reduction in hospital use within the ACT sample.²³ With regard to the NY data, no outcome data are available.

Another implicit assumption is that these grading systems can be applied equally to a variety of settings. However, some standards may need modification based on the community or population the program serves.¹² For example, rural sites often make modifications to the ACT model.^{29,42} In addition, settings may already provide some of the services in a different context. Although ACT clearly does *not* advocate a brokered services approach, ACT teams are part of a larger continuum of services. For example, NY and Indiana have invested in statewide implementation of supported employment. Because ACT programs are working within this context, accrediting bodies may allow teams to utilize dedicated supported employment specialists who are not employed directly by the ACT team. Thus, when establishing fidelity cutoffs, one must take into account the context of the program in determining what may be acceptable.

Of course, there is a potential trade-off in using fidelity scales for the purpose of accreditation that should be made explicit. While a measure such as the DACTS can be useful, a scale itself may become reified in standard and seem to suggest upper as well as lower bounds for performance. Programs then may attempt only to meet the relatively narrow criteria of the scale without fully implementing the model behind the scale—in essence following the letter rather than the spirit of the standard. This kind of risk, endemic to the accreditation process, is noteworthy in this instance, where the score does not pretend to represent performance on certain clinically important program features. For example, items for integrated treatment for co-occurring disorders and vocational support were excluded because they did not differentiate ACT from other programs in this sample. Moreover, critical program processes, such as assessment, were not measured as part of scale in the first place. Ultimately, a single scale cannot measure all factors that contribute to program implementation, and an absolute score on a fidelity scale should consequently not be used as the sole basis for accreditation. Rather, fidelity scales can be used to structure a broader evaluation by knowledgeable assessors. Therefore, decisions about *who* conducts the evaluations, *how* such evaluations are done, and *how the data are used* are critical to the validity of any accreditation procedure.

Finally, it needs to be acknowledged that the samples used in this study are opportunity samples. Some of the differences in programs may be idiosyncratic to state regulations, geographic variations, client samples, budgeting constraints, and a host of other confounds. For these reasons it is important that these findings be augmented by future fidelity assessments. Ultimately, the development of useful accreditation standards and fidelity scales both will progress through capitalizing on real-world opportunities of assessing large samples of programs and ideally linking fidelity to outcomes to develop expectancy-referenced criteria.

Implications for Behavioral Health Services

The DACTS represents a useful tool to assist in program accreditation. In prior work, the DACTS has been useful in research for documenting the extent to which programs appear to be following ACT principles.^{15,17, 19–22} However, this research utility has not necessarily translated to pragmatic utility from a program evaluation or policy perspective. From a practical, real-world perspective, state planners, accrediting bodies, and other stakeholder groups often seek a set of cut-and-dried criteria to apply to individual program sites to ascertain whether a program “does” or “does not” meet program standards. Similarly, funding agencies want to know if a program is ACT and should be funded as ACT. A continuous measure such as the DACTS does not explicitly meet this need without the identification of a cutoff point or other method for translating a continuous measure into a dichotomous one. A trial-and-error approach to translating the DACTS for use as a tool in accreditation procedures was taken.

Of course, there are numerous issues in determining accreditation procedures for ACT programs that are not addressed by this article. For example, a critical issue is defining who completes the accreditation evaluation and how the assessment is done. Evaluators need structured training on how to administer the DACTS (or other accreditation instrument) and a standardized assessment process (including a detailed set of instructions for conducting interviews and coding data) to ensure comparability across sites and across time. Accreditation procedures should be broader than a DACTS assessment. In addition to aspects of ACT that are measured by the DACTS, there are other factors that contribute to successful implementation but are more difficult to assess in the context of program fidelity. Staff competence and attitudes, therapeutic alliance, consumer rights, team building, cultural sensitivity, and motivational and resource factors that enhance or interfere with implementation might all be important to measure.^{43,44} Ideally, a combination of methods and tools would be used to assess implementation, and ultimately a critical mass of studies linking fidelity to outcomes will be available so that expectancy-referenced criteria can be used. However, the desire for comprehensiveness and future rigor must be balanced with the need for immediate practicality. States and other stakeholders

currently need reliable and user-friendly methods to determine whether a program can qualify as ACT. At present, the DACTS is a good start for achieving this goal, and the authors have tried to explore the impact of using this tool with norm-referenced and criterion-referenced evaluation in policy decisions.

These empirically based norms for ACT standards should provide benchmarks for both state planners and providers attempting to implement ACT. The underlying assumption is that better-implemented programs will lead to better outcomes.¹ Continuous monitoring of program fidelity as well as valued outcomes (eg, increased independent living, higher quality of life) has been recommended by the Implementing Evidence-Based Practices Project as essential to successful implementation of evidence-based practices such as ACT⁴⁰ and therefore would be important in any accreditation process.

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References

1. Bond GR, Evans L, Salyers MP, et al. Measurement of fidelity in psychiatric rehabilitation. *Mental Health Services Research*. 2000;2:75–87.
2. Stein LI, Test MA. An alternative to mental health treatment, I: Conceptual model, treatment program, and clinical evaluation. *Archives of General Psychiatry*. 1980;37:392–397.
3. Bond GR, Drake RE, Mueser KT, et al. Assertive community treatment for people with severe mental illness: critical ingredients and impact on patients. *Disease Management & Health Outcomes*. 2001;9:141–159.
4. Latimer E. Economic impacts of assertive community treatment: a review of the literature. *Canadian Journal of Psychiatry*. 1999;44:443–454.
5. Mueser KT, Bond GR, Drake RE, et al. Models of community care for severe mental illness: a review of research on case management. *Schizophrenia Bulletin*. 1998;24:37–74.
6. Drake RE, Mueser KT, Torrey WC, et al. Evidence-based treatment of schizophrenia. *Current Psychiatry Reports*. 2000;2:393–397.
7. Lehman AF, Steinwachs DM, PORT Co-Investigators: At issue: translating research into practice. The Schizophrenia Patient Outcomes Research Team (PORT) treatment recommendations. *Schizophrenia Bulletin*. 1998;24:1–10.
8. Meisler N: Assertive community treatment initiatives: results from a survey of selected state mental health authorities. *Community Support Network News*. 1997;11:3–5.
9. Flynn LM: Commentary. *Schizophrenia Bulletin*. 1998;24:30–32.
10. NASHMPD Research Institute: Implementation of evidence-based services by state mental health agencies: 2001. *State Profile Highlights*. February 2002;2:1–4.
11. News & Notes: President Clinton announces an array of initiative at First White House Conference on Mental Health. *Psychiatric Services*. 1999;50:980–981.
12. Allness DJ, Knoedler WH: *The PACT Model of Community-Based Treatment for Persons With Severe and Persistent Mental Illness: A Manual for PACT Start-Up*. Arlington, Va: NAMI; 1998.
13. CARF: *2000 Behavioral Standards Manual*. Tucson, Ariz: CARF, the Rehabilitation Accreditation Commission; 2000.
14. Phillips SD, Burns BJ, Edgar ER, et al. Moving assertive community treatment into standard practice. *Psychiatric Services*. 2001;52:771–779.
15. Teague GB, Bond GR, Drake RE. Program fidelity in assertive community treatment: development and use of a measure. *American Journal of Orthopsychiatry*. 1998;68:216–232.
16. McGrew JH, Bond GR, Dietzen LL, et al. Measuring the fidelity of implementation of a mental health program model. *Journal of Consulting and Clinical Psychology*. 1994;62:670–678.
17. McHugo GJ, Drake RE, Teague GB, et al. The relationship between model fidelity and client outcomes in the New Hampshire Dual Disorders Study. *Psychiatric Services*. 1999;50:818–824.
18. Glaser R. Instructional technology and the measurement of learning outcomes. *American Psychologist*. 1963;18:519–521.
19. Clarke GN, Herinckx HA, Kinney RF, et al. Psychiatric hospitalizations, arrests, emergency room visits, and homelessness of clients with serious and persistent mental illness: findings from a randomized trial of two ACT programs vs. usual care. *Mental Health Services Research*. 2000;2:155–164.
20. Johnsen M, Samberg L, Calsyn R, et al. Case management models for persons who are homeless and mentally ill: The ACCESS Demonstration Project. *Community Mental Health Journal*. 1999;35:325–346.

21. Salyers MP, Masterton TW, Fekete DM, et al. Transferring clients from intensive case management: impact on client functioning. *American Journal of Orthopsychiatry*. 1998;68:233–245.
22. Winter JP, Calsyn RJ. The Dartmouth ACT Scale: a generalizability study. *Evaluation Review*. 2000;24:319–338.
23. Bond GR, Salyers MP, Fekete DM. *Illinois Assertive Community Treatment Project*. Indianapolis: Indiana University – Purdue University Indianapolis; 1996.
24. Salyers MP, Resnick SG, Bond GR. Fidelity of New York assertive community treatment programs. Indianapolis: Indiana University – Purdue University Indianapolis; 2000.
25. Dixon LB, Krauss N, Kernan E. Modifying the PACT model to serve homeless persons with severe mental illness. *Psychiatric Services*. 1995;46:684–688.
26. Drake RE, McHugo GJ, Clark RE, et al. Assertive community treatment for patients with co-occurring severe mental illness and substance use disorder: a clinical trial. *American Journal of Orthopsychiatry*. 1998;68:201–215.
27. Essock SM, Kontos N. Implementing assertive community treatment teams. *Hospital and Community Psychiatry*. 1995;46:679–683.
28. Primm AB. Assertive community treatment. In: Breakey WR, ed. *Integrated Mental Health Services: Modern Community Psychiatry*. New York: Oxford University Press; 1996:222–237.
29. Santos AB, Deci PA, Lachance KR, et al. Providing assertive community treatment for severely mentally ill patients in a rural area. *Hospital and Community Psychiatry*. 1993;44:34–39.
30. Teague GB, Drake RE, Ackerson TH. Evaluating use of continuous treatment teams for persons with mental illness and substance abuse. *Psychiatric Services*. 1995;46:689–695.
31. Randolph FL. Improving systems through systems integration: The ACCESS Program. *American Rehabilitation*. Spring 1995;21:36–37.
32. Rosenheck R, Morrissey J, Lam J, et al. Service system integration, access to services, and housing outcomes in a program for homeless persons with severe mental illness. *American Journal of Public Health*. 1998;88:1610–1615.
33. Rosenheck R, Neale M, Leaf P, et al. Multisite experimental cost study of intensive psychiatric community care. *Schizophrenia Bulletin*. 1995;21:129–140.
34. Rosenheck RA, Neale MS. Cost-effectiveness of intensive psychiatric community care for high users of inpatient services. *Archives of General Psychiatry*. 1998;55:459–466.
35. McGrew JH, Bond GR. Critical ingredients of assertive community treatment: judgments of the experts. *Journal of Mental Health Administration*. 1995;22:113–125.
36. Goldman HH, Ganju V, Drake RE, et al. Policy implications for implementing evidence-based practices. *Psychiatric Services*. 2001;52:1591–1597.
37. Peterson PD, Lippincott RC. State mental health directors' priorities for human resource development. *Hospital and Community Psychiatry*. 1993;44:788–790.
38. Bond GR, Becker DR, Drake RE, et al. Implementing supported employment as an evidence-based practice. *Psychiatric Services*. 2001;52:313–322.
39. Drake RE, Essock SM, Shaner A, et al. Implementing dual diagnosis services for clients with severe mental illness. *Psychiatric Services*. 2001;52:469–476.
40. Torrey WC, Drake RE, Dixon L, et al. Implementing evidence-based practices for persons with severe mental illness. *Psychiatric Services*. 2001;52:45–50.
41. Carpinello SE, Rosenberg L, Stone J, et al. New York state's campaign to implement evidence-based practices for people with serious mental disorders. *Psychiatric Services*. 2002;53:153–155.
42. Fekete DM, Bond GR, McDonel EC, et al. Rural assertive community treatment: a field experiment. *Psychiatric Rehabilitation Journal*. 1998;21:371–379.
43. Corrigan PW, Steiner L, McCracken SG, et al. Strategies for disseminating evidence-based practices to staff who treat people with serious mental illness. *Psychiatric services*. 2001;52:1598–1606.
44. Schoenwald SK, Hoagwood K. Effectiveness, transportability, and dissemination of interventions: what matters when? *Psychiatric Services*. 2001;52:1190–1197.