

Strategies for Improving Fidelity in the National Evidence-Based Practices Project

Gary R. Bond, Robert E. Drake, Gregory J. McHugo, Charles A. Rapp, Rob Whitley, &
the National Evidence-Based Practices Project Research Group

Affiliations:

- Gary Bond: Department of Psychology, Indiana University Purdue University Indianapolis, Indianapolis, IN
- Robert Drake: Departments of Psychiatry and Community and Family Medicine, Dartmouth Medical School & Dartmouth Psychiatric Research Center, Lebanon, NH
- Gregory McHugo: Department of Community and Family Medicine, Dartmouth Medical School & Dartmouth Psychiatric Research Center, Lebanon, NH
- Charles A. Rapp, School of Social Welfare, University of Kansas, Lawrence KS
- Rob Whitley: Department of Community and Family Medicine, Dartmouth Medical School & Dartmouth Psychiatric Research Center, Lebanon, NH

Paper Prepared for the
International Conference on Implementation and Translational Research
Stockholm, Sweden
October 15-16, 2007

To appear in a special issue of Research on Social Work Practice

ABSTRACT

Background. The National Evidence-Based Practices (EBP) Project developed and tested a model for facilitating the implementation of 5 EBPs for adults with severe mental illness in the U.S. The implementation model involved a comprehensive strategy that included support from state mental health authorities, provision of EBP toolkits containing videotapes, guidelines, practice manuals, and other resource materials, intensive training and consultation from experienced clinicians (“consultant/trainers”). A key element in the implementation model was frequent assessment of fidelity (defined as the extent to which a program adheres to the EBP model) using standardized fidelity scales, followed by fidelity reviews – feedback sessions provided to the leadership at the program site in which consultant/trainers provided specific recommendations for improving program quality.

Methods. The implementation model was tested in 53 sites in 8 states. In each site, one of the 5 EBPs was adopted for implementation and then studied for a two-year period using a combination of qualitative and quantitative methods. Fidelity was measured at baseline and at 6-month intervals for two years. Narrative site reports were examined to illustrate influences on fidelity.

Findings. Overall, 29 (55%) were judged as having high fidelity implementation by the end of the two-year follow-up. The large majority of sites implementing two of the EBPs achieved high fidelity, whereas half or fewer of the sites for the remaining three EBPs succeeded in high fidelity. Sites were more successful in implementing structural elements than clinical elements of program fidelity. Four factors were mentioned as influencing fidelity: (1) EBP-specific factors, (2) state factors, (3) leadership within the site, and (4) use of fidelity reviews.

Conclusion. A multi-pronged implementation strategy was effective in achieving high fidelity in over half of the sites seeking to implement a new EBP. Strategies for implementing complex psychosocial EBPs require attention to many aspects of the implementation process.

INTRODUCTION

The evidence is overwhelming that the quality of care in public mental health systems in the U.S. falls far short of what the research literature suggests mental health centers should be providing (Lehman & Steinwachs, 1998; New Freedom Commission on Mental Health, 2003; U.S. Department of Health and Human Services, 1999; Wang, Demler, & Kessler, 2002). What can we do to improve the quality of care? One set of approaches is found in the quality improvement movement as this has evolved in health care (Blumenthal & Kilo, 1998; Hermann, 2005; Hermann, Chan, Zazzali, & Lerner, 2006). The health care field has made some inroads in defining methods for systematically improving quality of care, but much more is left to learn. It has been firmly established that passive diffusion, i.e., publishing randomized controlled trials and assuming that practitioner and program leaders will read and adopt effective interventions, is not an effective strategy (Shojania & Grimshaw, 2005). In fact, one estimate is that it takes 17 years on average for an intervention demonstrated as effective in a clinical trial to be adopted within the health care field (Institute of Medicine, 2001). Similarly, merely disseminating guidelines has almost always proven to be ineffective (Grimshaw et al., 2005), unless paired with “strategies designed to handle possible obstacles to implementation...to improve adherence” (Grol, 2001, p. 46). One promising strategy, as suggested by numerous research demonstrations, is the use of simple reminder systems or informational feedback to influence clinicians to make specific changes in conformity to the evidence (e.g., Uttaro, Finnerty, White, Gaylor, & Shindelman, 2007). In support of the effectiveness of this strategy, Solberg (2000) concluded in his synthesis of 47 good-quality systematic reviews of quality improvement, “Using reminders and perhaps using feedback in the course of clinical encounters were the most effective ways of implementing guidelines” (p. 171). However, complex interventions appear to require more

multidimensional strategies. Moreover, what works for one intervention may not be effective for another (Shojania & Grimshaw, 2005).

As part of a more general trend within health care, the concept of evidence-based practice (EBP) is receiving increasing attention within the mental health field (New Freedom Commission on Mental Health, 2003; U.S. Department of Health and Human Services, 1999). For adults with severe mental illness (SMI), this increased attention also has been prompted by accumulating evidence on practices found effective in helping this population achieve greater community integration and higher quality of life (Drake, Merrens, & Lynde, 2005). Despite this improved knowledge base, implementation of EBPs in routine service settings has been slow (Lehman & Steinwachs, 1998; Wang et al., 2002).

Systematic dissemination of effective model programs is not a new endeavor for mental health. A large-scale effort launched in the 1970s to disseminate the empirically-validated community lodge approach for psychiatric inpatients discharged from hospitals ended in failure for lack of acceptance within the mental health community (Fairweather, 1980). During the ensuing decades, many demonstration projects were implemented throughout the U.S. based on the optimistic belief that effective model programs could be easily replicated. Many of these projects were funded by the National Institute of Mental Health through its Community Support Program (Turner & TenHoor, 1978). The results of these projects were variable. Project leaders sometimes assumed that community mental health centers would be sufficiently equipped to implement a new practice if they were given a written description of a program model, the funding to hire staff, and some initial training. However, often programs were poorly implemented or never implemented at all, sometimes for lack of an adequate implementation plan (Bond, 1991; Rosenheck, Neale, Leaf, Milstein, & Frisman, 1995), inadequate leadership

(Backer, Liberman, & Kuehnel, 1986) and/or lack of model specification (Noble, 1991). It became apparent that program planners needed to pay attention to *fidelity*, defined as adherence to the standards and principles of a program model (Bond, Evans, Salyers, Williams, & Kim, 2000). As researchers in other fields have found (Fixsen, Naoom, Blase, Friedman, & Wallace, 2005), dissemination of mental health program models, even those with strong evidence for effectiveness, is difficult. Moreover, many demonstrations have achieved short-term success but the model has faded or degraded rapidly, presumably because financing regulations, organizational relationships, and data systems have not been aligned to reinforce and sustain evidence-based practices (Drake, Goldman et al., 2001).

There are likely many reasons why dissemination efforts have often failed. Certainly one reason for failure is that most EBPs are complex multi-faceted interventions that are difficult to implement without some level of pre-existing structure and support (Torrey et al., 2001). Program planners often underestimate the infrastructure, practitioner skills, and leadership required for successful implementation.

The assertive community treatment (ACT) model offers an especially vivid case example of these difficulties in achieving successful dissemination of an effective program model. This model has been a huge influence on the mental health field starting with the broad circulation of the findings from the original study showing its effectiveness (Stein & Test, 1980). Several replications soon followed, and by the end of the century over 25 randomized controlled trials supported its status as an EBP (Bond, Drake, Mueser, & Latimer, 2001). Unlike many other mental health models (Brekke, 1988), the critical ingredients of the ACT model were well defined by the model originators. From the time of its earliest dissemination, these core ingredients were generally well understood by program leaders throughout the U.S. (McGrew &

Bond, 1995). By the mid-1990s, programs based on the ACT model had spread throughout the U.S. (Deci, Santos, Hiott, Schoenwald, & Dias, 1995), but fidelity to the original program model was highly variable. Many programs billing their services as ACT were a far cry from the service model envisioned by the model developers (Test, 1992), which led to the development of practice manuals (Allness & Knoedler, 1998, 2003; Stein & Santos, 1998) and videotapes (Harron, Burns, & Swartz, 1993) to provide better guidance to field.

The end of the century brought greater awareness of the scope of the knowledge base on effective treatments for people with SMI. One influential document was the Schizophrenia PORT report, which offered 35 treatment recommendations for schizophrenia that were widely accepted by the psychiatric community (Lehman et al., 2004; Lehman, Steinwachs, & PORT Co-Investigators, 1998). These recommendations ranged from very specific suggestions (e.g., medications should be prescribed within the recommended dose range) to broad service recommendations (e.g., vocational rehabilitation services should be available to all clients with schizophrenia). While these recommendations were widely endorsed by the psychiatric field, surveys found that the recommendations were not followed in routine service settings with any consistency (Lehman & Steinwachs, 1998).

Identification of EBPs

In 1998, a national panel of experts was convened to assess the current status of EBPs for adults with SMI (Drake, Goldman et al., 2001). The panel designated six practices as evidence-based. *Psychiatric Services* invited experts in each practice to prepare a review article describing each practice, identified the critical practice principles, summarized the evidence base, and discussed barriers to implementation. Five of these were psychosocial practices: supported employment (SE) (Bond, Becker et al., 2001), ACT (Phillips et al., 2001), integrated dual

disorders treatment (IDDT) (Drake, Essock et al., 2001), illness management and recovery (IMR) (Mueser et al., 2002), and family psychoeducation (FPE) (Dixon et al., 2001). The panel also identified a sixth EBP, involving collaborative medication management (Mellman et al., 2001), which was been developed and disseminated by Miller and colleagues (Bond et al., 2007). The panel also concluded that simply identifying EBPs was not sufficient to assure their adoption. A more systematic approach to dissemination was needed.

The National EBP Project

The National EBP Project was launched to address the aforementioned deficiencies (Drake, Goldman et al., 2001; Mueser, Torrey, Lynde, Singer, & Drake, 2003; Torrey et al., 2001; Torrey, Finnerty, Evans, & Wyzik, 2003; Torrey, Lynde, & Gorman, 2005). The investigators hypothesized that implementation of EBPs in routine settings had been impeded by the lack of comprehensive, user-friendly information about the EBPs and their implementation. In other words, however effective a practice may be, if it has not been appropriately marketed to the key stakeholders who have influential roles in implementing services with community mental health centers, then its dissemination will be inconsistent.

Therefore, the first phase of the National EBP Project involved creation of toolkits for each EBP, consisting of a variety of materials to facilitate practice implementation, such as practitioner workbooks, research articles, introductory and instructional videotapes, and PowerPoint lectures. The toolkits aimed at multiple “stakeholders,” based on the findings from prior studies and from focus groups (Torrey et al., 2005), that implementation is more likely to succeed with active support from the state mental health authority, the leadership within the community mental health center, and practitioners, consumers, and family members. The

influence of the state mental health authority includes leadership, alignment of policies, and adequate financing (Moser, DeLuca, Bond, & Rollins, 2004; Rapp et al., 2005).

In addition to these materials, each toolkit contained a “fidelity scale” (Bond et al., 2000; Mowbray, Holder, Teague, & Bybee, 2003) used to assess the degree of implementation of the EBP at a particular program site. These fidelity scales were viewed as critical tools for successful implementation, given the history of uneven implementation of even well-defined program models. At the inception of the National EBP Project, fidelity scales had been validated for ACT (Salyers et al., 2003; Teague, Bond, & Drake, 1998) and for supported employment (Bond, Becker, Drake, & Vogler, 1997) but not for the other EBPs; thus the fidelity scales for the other practices were developed for the project.

The rationale for using fidelity scales to guide practice is the hypothesis that fidelity to the program model will be associated with outcomes suggested by the research base underlying the EBP. In other words, programs that are higher in fidelity will have better outcomes. This hypothesis has been examined in a wide range of practices, with generally moderate to strong support for the fidelity-outcome relationship (e.g., Blakely et al., 1987; Henggeler, Pickrel, & Brondino, 1999; Jerrell & Ridgely, 1999; McDonnell, Nofs, Hardman, & Chambless, 1989; Oxman et al., 2006). This hypothesis has been strongly supported in four supported employment studies (Becker, Smith, Tanzman, Drake, & Tremblay, 2001; Becker, Xie, McHugo, Halliday, & Martinez, 2006; Gowdy, Carlson, & Rapp, 2003; McGrew & Griss, 2005), three of which used the SE Fidelity Scale used in the current study. The fidelity-outcome relationship has been studied in ACT program using a variety of fidelity instruments, with some supporting evidence, although the evidence has been not completely consistent (Bond & Salyers, 2004; Latimer, 1999; McGrew, Bond, Dietzen, & Salyers, 1994; McHugo, Drake, Teague, & Xie, 1999). One of these

studies used the same ACT fidelity scale used in the current project (Bond & Salyers, 2004). However, no studies have yet examined the predictive validity of fidelity scales for remaining three EBPs studied in the current project.

While making fidelity the primary focus, the National EBP Project researchers recognized that fidelity was but one critical ingredient necessary for high-quality care (Fixsen et al., 2005). Drake, Bond, and Rapp (2006) have estimated that program fidelity may account for 20% to 60% of the variance in program outcomes – in other words, fidelity has a considerable impact – but is by no means the only important influence on outcome. Two other crucial factors are practitioner competence and attention to consumer preferences (Drake et al., 2005).

Drake and colleagues also hypothesized that, in addition to the toolkits, another necessary component for successful implementation was systematic training and consultation. Importantly, the National EBP Project group posited that this training needed to be at a sufficient level of intensity to influence change, with frequent face-to-face contacts at program sites (Bond, 2007). Thus the National EBP Project researchers developed a training-consultation model that included the following elements (Torrey et al., 2003): (1) Consultation to state mental health authority, (2) Consultation to community mental health center administrators, (3) Baseline fidelity report, (4) “Kickoff” presentation to agency, (5) Provision of EBP toolkit to agency, (6) Initial skills training for practitioners, (7) Ongoing consultation to sites, and (8) Systematic monitoring of fidelity, principally through periodic fidelity reviews.

Regarding the last element in the strategy – provision of feedback to sites on their level of attainment of fidelity to the program model – the National EBP Project investigators implicitly adapted one of the major strategies in the quality improvement movement of modifying a practice and practice through provision of specific data to practitioners with recommendations

for change. The notion of influencing program practices through fidelity feedback was not new, but had been informally used in earlier projects (e. g., Bond & Salyers, 2004; Drake, McHugo, Becker, Anthony, & Clark, 1996).

Thus, one of key elements in the implementation model was provision of systematic feedback to the leadership at each study site on their attainment of fidelity to the EBP model. Each site was expected to develop a steering committee comprised on the agency's leadership and representation of different stakeholders. Thus, the membership might include the center director, clinical director for adult mental health services, the program leader for the EBP being implemented, and others, including family members, clients, and practitioners. The purpose of the steering committee was to monitor the implementation process and to provide input to the agency leadership for needed changes. In practice, formation and maintenance of steering committee varied widely across the different states and across centers. In some sites, the steering committee were very active and presumably influential in the implementation process, whereas this was not so in others. However, even in those sites lacking a formal steering committee, there was a de facto leadership "group" (sometimes a single individual) responsible for the progress of the implementation.

Following the fidelity assessments described above, the consultant/trainer prepared a fidelity report containing not only the quantitative findings for the assessment, but also a narrative account for the progress at the site on each component. Thus, as a quality assurance tool, the fidelity scales provided a structure for communicating areas of strength and weaknesses. According to the implementation model, the consultant/trainer was expected to send the fidelity report to the steering committee within a brief period after the fidelity assessment, scheduling a time to present and discuss the feedback in the report to the steering committee.

The training consultation model was designed to be one year in duration, with the full recognition that the length of time required for successful implementation would vary.

Based on these ideas, the second phase of the National EBP Project was launched in 2002 with the primary goal of evaluating the effectiveness of this implementation process for the 5 psychosocial EBPs. A related goal was to examine the barriers and strategies associated with successful EBP implementation. Each site was followed for a two-year period. The unit of analysis for this study of implementation was the site, and the primary outcome measure was model fidelity.

The purpose of this report is to compare and contrast changes over time in fidelity between the different EBPs and to use narrative site reports to generate hypotheses about factors influencing the attainment of high fidelity, as measured by the EBP fidelity scales.

METHODS

Sites

The project was conducted in 53 sites in 8 states. By design, there were two different EBPs implemented in each state (with the exception of one state, which disseminated a single EBP). The state mental health authority in each state played a lead role by recruiting sites and developing a mechanism for providing training and consultation, typically through a technical assistance center (Biegel, Swanson, & Kola, 2007; Rapp et al., in press; Salyers et al., 2007). With two exceptions (one a psychiatric rehabilitation center and the other a prison), all of the sites were public-sector community mental health agencies, and the EBPs were implemented within their programs of care for people with SMI (e.g., Community Support Programs). State mental health authorities provided a consultant/trainer for each EBP, and sites agreed to provide time for training and supervision and to develop a relationship with the consultant/trainer.

Each state had a senior researcher who coordinated the evaluation activities for the state in collaboration with the national evaluation, which was directed by the Dartmouth Psychiatric Research Center. Sites also agreed to participate in a range of evaluation activities, which were coordinated by an “implementation monitor” (i.e., a research assistant) who was assigned to each site. Implementation monitors visited the sites regularly to collect systematic qualitative and quantitative data on the process and outcomes of implementation. Institutional Review Board approval was obtained for the overall project and within each state.

Data Collection Procedures

Qualitative. Implementation monitors were assigned to each site to document training and implementation activities. They made monthly site visits where they observed activities related to the implementation. They also conducted regular interviews with trainers and program leaders according to the project protocol. Observations were recorded as field notes, and interviews were recorded and transcribed verbatim. These data were entered into a qualitative database and coded along twenty-six dimensions of implementation activity (Woltman & Whitley, in press). After two years of data collection, implementation monitors compiled detailed site reports summarizing the implementation process at each site, following a systematic protocol.

Quantitative. At each site, fidelity to the EBP model was assessed at baseline (prior to implementation) and at four 6-month intervals thereafter. In most cases, the local consultant/trainer and implementation monitor completed the assessments together. Senior staff for each evidence-based practice provided initial training to the fidelity assessors and also provided monthly telephone supervision.

Fidelity Measures

Fidelity was assessed by rating adherence to the principles and procedures specified in the evidence-based practice models. Fidelity scales had been validated previously for assertive community treatment (Teague et al., 1998) and supported employment (Bond et al., 1997). During the toolkit development phase we created fidelity scales for the remaining three EBPs (See <http://mentalhealth.samhsa.gov/cmhs/communitysupport/toolkits>).

The EBP fidelity scales all share a common assessment format. Each fidelity scale consists of 12-28 items, with each item reflecting a specific element in the practice. Items are rated on a 5-point behaviorally anchored scale, with a rating of “5” indicating close adherence to the model and “1” representing usual practice and/or a sharp departure from standards for that element. For example, on the Supported Employment Fidelity Scale, *Rapid job search* is scored 5 if the first contact with an employer is on average within one month after program entry, whereas 1 represents a delay of up to one year after program entry. Ratings of 4, 3, and 2 represent various gradations between these two extremes. For quality assurance purposes, item-level fidelity ratings are used to provide feedback to sites about their relative attainment of a core element in the EBP model. In addition, the average of the item ratings yields a total fidelity score, which expresses a global picture of overall fidelity. The total fidelity score ranges from 1 to 5, with higher scores indicating more faithful implementation. For the National EBP Project we adopted the convention that a total fidelity score of 4.0 or greater was considered high fidelity (i.e., full implementation of the EBP); scores between 3.0 and 4.0 indicate moderate fidelity; and scores less than 3.0 indicated low fidelity (McHugo et al., 2007). The same convention was adopted for interpreting scores for individual items.

Despite differences in content, the procedures for assessing fidelity are similar across practices. A fidelity assessment involves a one-day site visits by two trained fidelity assessors to gather information from various sources in order to make ratings on the critical components of the practice. Assessors follow a detailed protocol with instructions for preparing sites for the visit, critical elements in the fidelity assessment, and sample interview questions. The protocol also includes a fidelity assessment checklist, which provides general guidelines for the conduct of a fidelity assessment. Although the specifics of the assessment schedule vary by practice, the assessment typically includes interviews with the program leader and practitioners, observation of team meetings and EBP-related interventions (such as group and individual counseling sessions), accompanying practitioners on community visits, interviews with consumers, and review of consumer charts. After the site visit, each assessor independently makes fidelity ratings. The two assessors then reconcile any discrepancies to arrive at the final fidelity ratings, making follow-up calls to the program leader when necessary to clarify an item rating. After reaching consensus on the fidelity ratings, the fidelity assessors prepare a fidelity report summarizing the fidelity ratings and providing recommendations concerning any components of the practice that are deficient. While fidelity reports typically provide recognition and positive reinforcement in areas of high fidelity (5s), the primary focus is on remediation, particularly items rated 3 or lower. However, the narrative accounts allow for more fine-grain feedback of possible problem areas not captured by the fidelity scale.

As reported by McHugo et al. (in press), the inter-rater reliability of the fidelity assessments was evaluated with the intra-class correlation coefficient (McGraw & Wong, 1996), based on a one-way random effects analysis of variance model for agreement between the two fidelity assessors on the total scale scores. The intra-class correlation was computed across all

assessment points for each fidelity scale. Reliability between pairs of independent assessors was high for all five fidelity scales, ranging from .89 to .99 for the 5 practices.

Classification of content of the fidelity items. While sharing many features in common, including the assessment template for making ratings, the data collection procedures, and a focus on objective, observable data, the 5 EBP fidelity scales differed in content, starting with the dimensions on which the items were constructed. The two earliest scales developed, the ACT and SE fidelity scales, both examine a team-based practice in which certain organizational elements must be in place in order for the practice to be effective. The ACT and SE fidelity scales therefore focused nearly exclusively on what we have come to call *structural* elements of a practice, i.e., elements defining who delivers the services (*Staffing*), how the program is organized (*Organization*), and readily quantifiable features of the delivery of services (*Services*). Sample items include: “a full-time nurse for every 50 clients” (ACT Staffing); “integration between employment team and treatment team” (SE Organization), and “80% of client contact are in the community” (ACT Services). As shown in Table 1, the fidelity items for the ACT and SE fidelity scales are grouped in these three categories. While these two fidelity scales specify *how much* services should be provided, *where* they are provided, and to some degree *how* they are provided (e.g., “individualized job search,” “assertive outreach”), to a large extent, the *clinical* aspects of the practices (what specific interventions are used) are not specified by the fidelity scales. Both the ACT and SE fidelity scales have been factor analyzed (Bond, Vogler et al., 2001; Teague et al., 1998), but their resultant subscale structures are too fine-grained for the current purposes.

The three new fidelity scales developed for the National EBP Project (IDDT, IMR, and FPE) followed the steps outlined by Bond et al. (2000). Specifically, the fidelity scale

developers, in collaboration with the toolkit leaders for each EBP, agreed on a set of principles by which the practice was defined. Then one or more items were identified for each principle. All three of the new fidelity scales included structural elements similar to those for ACT and SE. However, to a greater extent than for ACT and SE, fidelity was conceptualized for these three additional practices as requiring close attention to *behaviors of individual practitioners*. Thus the fidelity scales for IDDT, IMR, and FPE included a strong representation of *clinical* elements (interventions performed by individual practitioners according to a prescribed counseling approach, e.g., *stagewise interventions* and *motivational techniques*). The authors had excellent agreement on the classification of the items for the 3 new scales as structural or clinical, as shown in Table 1.

FINDINGS

Quantitative Findings

McHugo et al. (2007) have reported the overall findings from the dissemination phase of the project. Of the 53 sites participating in the study, 29 (55%) were judged as having high fidelity implementation by the end of the two-year follow-up. There were wide discrepancies across practices, as shown in Table 2. The large majority of SE and ACT sites achieved high fidelity, whereas half of the IMR and FPE did so, and only a small proportion of the IDDT sites.

McHugo et al. (2007) also concluded that, overall, most of the increase in fidelity occurred within the first year, as shown in Figure 1. As further indicated in Figure 1, fidelity at baseline differed among the practices, as well as the trajectory of improvement. Specifically, the mean baseline fidelity was higher for ACT and SE than the remaining 3 practices and the trajectory for ACT and SE asymptoted quickly within the first year.

In Table 3 we have separated the structural and clinical items on the 3 newer scales. For IDDT and IMR (but not FPE), the separation over time in the mean scores suggests a clear pattern of more rapid implementation of fidelity for structural elements than clinical elements. The mean improvement over time in fidelity for structural items on the IDDT and IMR scales was roughly equivalent to that for the total scores for the SE and ACT fidelity scales.

What Accounts for Differences in Fidelity?

The National EBP Project researchers are just now starting to examine the large qualitative data base in search of themes regarding barriers to implementation and strategies for overcoming these barriers. Although this work has just begun, some outlines are starting to emerge. With respect to efforts to improve model fidelity, we suggest the following possible factors: (1) EBP-specific factors, (2) state factors, (3) leadership within the site, (4) use of fidelity reviews.

EBP-Specific Factors

The above findings suggest that some practices are more difficult to implement than others. As been frequently suggested, IDDT is more clinically complex than ACT or SE, therefore its poorer success can be explained by the difficulty clinicians had mastering the skills in order to be rated with high fidelity (Moser et al., 2004). Staff turnover further inhibited the achievement of high fidelity, as new staff not exposed to the skills training replaced those who had (Woltman & Whitley, in press).

State Factors

State-level factors had a prominent role in influencing fidelity (Moser et al., 2004; Rapp et al., in press). One such influence was that of state mental health authorities that tied funding to attainment of fidelity standards. Two states implementing ACT (Indiana and New York) had

an attractive reimbursement rate for providing ACT, and both states use a licensing/accreditation process for determining which sites were eligible for this source of funding. In both states, the accreditation process was closely linked to fidelity. Consequently, it was not surprising that implementation monitors frequently attributed high fidelity to this accreditation process. In the most successful New York ACT site, the site report noted:

As with the other ACT teams, the single most important factor in promoting fidelity was state requirements for licensure and monitoring visits, which included the ACT fidelity scale. An additional factor here was the organization's focus on fidelity, which further distinguished this team from the others. The program leader specifically addressed two areas—service intensity and work with families, which had both improved by 24 months.

Also noteworthy in the preceding report was the fact that this site went beyond the requirements of licensure. By contrast, another site, which achieved moderately high fidelity, approached fidelity differently:

It should be noted that the program leader was not an advocate for fidelity achievement. Indeed, she seemed both nonplussed and irritated whenever she was asked about the strategies she had undertaken to promote fidelity. At one point, she said, "my goal is not to meet fidelity; it's to make this team run as efficiently and effectively as possible to meet the needs of our participants." The only person beating the drum for fidelity was the consultant/trainer, and because she was not viewed as a trusted resource, her efforts were largely ineffective. However, because fidelity is to a large extent structural and the state mental health authority mandated a number of fidelity components (morning meeting, staffing, crisis services, etc.), the team achieved generally good fidelity in spite of its general lack of concern for it.

Another example of state-level influence on fidelity is given by Kansas. As reported by Rapp et al. (in press), a technical assistance center with a systematic, purposive approach can exert enormous influence on fidelity, through assisting sites to develop steering committees, providing field supervision in the form of showing practitioners at the site how to do the practice, and provision of fidelity reports in a timely fashion. In Kansas, fidelity assessments continued after the 2-year study period ended, and it was expanded to include state-level vocational rehabilitation counselors, as suggested in the following site report:

The consultant/trainer and implementation monitor rated fidelity items every 6 months during the implementation phase. During the sustaining phase, the state vocational rehabilitation agency field staff assisted with ratings as well. Agency staff, practitioners, families, consumers, and other vested parties were interviewed routinely. Monthly conference calls for the implementation monitors and consultant/trainers as well as ongoing support from the project's coordinating body helped clarify questions as they developed.

Site Leadership

A common theme in all the sites successfully implementing the EBP was leadership committed to implementing the practice; in many instance this commitment carried over to new leadership when an initial leader left, as this vignette from a successful FPE site illustrates:

Both first and second program leaders were enthusiastic advocates with a commitment to implementing a high fidelity practice. The second leader was particularly instrumental in keeping the practice moving at a high level of fidelity despite significant barriers and the failure to start a second multi-family group. Among the barriers, lack of

transportation, funding and staff turnover, the most troublesome to the implementation was staff turnover.

Without question, the leadership at some sites never fully embraced the EBP, thereby accounting for limitations in implementing the EBP with adequate fidelity. For example, at a site that implemented ACT with moderately high fidelity:

The agency director's prioritization of financial gain and productivity was without a doubt the most significant barrier for ACT implementation. The program leader characterized the administration as having no vision, but just struggling to "cut corners" and "putting out fires." Without the agency director's support, the Implementation Steering Committee failed miserably. Throughout the 2 years of implementation, the program leader and the consultant/trainer repeatedly lobbied the administration to reduce productivity standards, implement 24-hour coverage, and redesign documentation of ACT-specific assessment and treatment plans, only to be met with resistance and indifference.

Use of Fidelity Reviews

There are many examples of program leaders who embraced the feedback from the consultant/trainers and sought to make necessary changes. The ACT team leader in the following vignette exemplified this attitude:

The consultant/trainer's fidelity reports provided detailed feedback on the program's performance. Despite the program leader's initial lack of fidelity understanding, she made a concerted effort to understand fidelity and questioned the implementation team extensively about measurement findings and potential improvements.

In other instances, however, fidelity reviews had little or no influence. Reasons for the lack of impact included instances in which the consultant/trainer did not adequately execute of the fidelity review process and other instances in which the site leadership was not receptive to the feedback. In some cases, the consultant/trainer intervention was at least partly responsible for the lack of impact of the fidelity reviews, as was true for example at one of the FPE sites that withdrew from the project after the first year:

For the first two fidelity assessments, the consultant/trainer mailed a copy of the fidelity reports to the program leader. No follow-up was initiated by the consultant/trainer. The FPE therapists indicated that they had not seen a copy of the fidelity report. The recommendations from these reports were not followed. For the one-year fidelity assessment, the consultant/trainer mailed a copy of the fidelity report to the program leader and followed up with a phone call to arrange a meeting to discuss the report. The meeting with the program leader was taken over by news that the FPE therapist had resigned and the clinic was experiencing severe financial difficulties. The consultant/trainer reported that she was unable to review the report and its recommendations. There is no indication that the FPE staff received the fidelity reports. The recommendations from this report were not followed.

Face-to-face fidelity reviews were not provided at another FPE, which was successful in conducting two FPE groups with high fidelity to the model, but subsequently discontinued the services due to the lack of sufficient reimbursement and difficulty recruiting families to participate:

The consultant/trainer mailed fidelity reports to the center director and program leader. The FPE scale with the full set of ratings was not attached to the fidelity reports. Follow-

up to review the recommendations was not offered. When asked if the report recommendations were used, the center director and program leader did not remember seeing the baseline or six-month reports.

Sometimes the fidelity reviews were seen as not helpful, as suggested by this vignette from a FPE site that had uneven implementation:

The consultant/trainer conducted and provided fidelity reports at baseline, 6-months, and 12-months. These reports contained suggestions for improvement, but rarely explained how to achieve these suggestions. The program leader would have liked the consultant/trainer to be more specific and directive in his guidance.

Another weakness in the fidelity review process occurred when the fidelity reviews were tardy, as indicated in this vignette from a high-fidelity ACT site:

The consultant/trainer's fidelity feedback in the first year was sparse and often much delayed (e.g., the 12 month fidelity feedback was delayed almost 6 months).

It was also readily apparent that sites that did not have leadership supportive of quality improvement did not profit from the fidelity review process. A vignette from an ACT site illustrates this point:

In commenting on her use of the consultant/trainer's fidelity reports, for example, the program leader said, "Yes, we burned them; we have paper airplane fights with them." ...The agency administrators displayed similar passive-aggressive behavior toward the consultant/trainer. For example, they scheduled a meeting with the consultant/trainer and the program leader to discuss her findings from the fidelity visit. Later that day, they informed the program leader that she was being reassigned after 3 weeks on the job, rendering the earlier meeting a waste of time...In addition, the program

leader spent gradually less and less time in the field, as she was forced by administrative demands to remain in the office, resulting in a lower score on practicing team leader.

While the program leader was not an opponent of fidelity, she seemed not to pay much attention to it either. One area of fidelity that merits specific comment is frequency of services, on which the team generally scored quite low...For example, it was often the case that two or even three staff would go out together on home visits. The team also had a driver, meaning that four people would sometimes go on a visit to see one client. When the team arrived at the clients' apartment, one member of the team would often stay in the car.

A vignette from another FPE site is illustrative of both the initial rejection of the fidelity review and the later use of that information. This site failed in its first implementation but then later succeeded in implementing FPE at a second clinic:

The consultant/trainer also received feedback from the agency administrators that the fidelity report was overly negative and made the agency look bad, which could jeopardize their funding. When the practice was moved to another office, the new program leader requested copies of the fidelity reports from the first implementation effort, in order to learn from that experience. This program leader did use the fidelity reports that occurred at 12-months and 18-months to improve the FPE practice.

DISCUSSION

The diverse set of experiences of the 53 sites in this study suggests that no single factor accounts for high fidelity. Nor is there any single strategy that will assure high quality implementation. Instead, we concur with the recommendation from quality improvement scholars to “attend to many factors and use multiple strategies” (Solberg et al., 2000). One of the

key strategies to enhance fidelity used in the National EBP Project was systematic assessment of fidelity and specific feedback to sites regarding areas for improvement. Based on the quality improvement literature, we had hypothesized that this method would a powerful influence on change. In reading the site reports, we were surprised by the relatively lack of emphasis on fidelity reviews as a change mechanism; some sites achieved high fidelity in spite of an apparent disregard of the information provided in these reviews.

Not surprisingly, strong leadership married to a judicious choice of an evidence-based practice compatible with the goals of the host agency were often present in high-fidelity programs. Sites with committed leadership often were more able to use feedback and to make the necessary changes to achieve high fidelity, at least with regard to structural changes, for example, by hiring of staff to fill specific roles, limiting size of caseloads, and prescribing team meetings on a regular basis. Effective leaders also removed barriers to high fidelity, by discontinuing services at variance with the EBP, and by revising productivity standards, paperwork requirements, and other policies in conflict with the EBP they were trying to implement. In the case of supported employment, the impact of concrete administrative actions on improving fidelity was unmistakable, as well documented in the site reports (Bond, McHugo, Becker, Rapp, & Whitley, in press). Taken as a whole, the strong anecdotal evidence regarding the influence of leadership, organizational culture, and finances suggests an obvious strategy for improving fidelity outcomes; select sites that have characteristics that suggest that they will implement the practice well. Obviously, this is a time-honored strategy that leads funding agencies to choose “star” agencies when offering incentive funding to implement some new program. Other dissemination projects have reached similar conclusions; for example, Katon, Zatzick, Bond, and Williams (2005) recommend “careful vetting of potential partners for

organizations with stable leadership, healthy finances, a quality improvement culture, and where leaders and clinicians identify a need for improvement” (p. 615).

The uniformly greater achievement of structural elements of fidelity, as compared to clinical elements, can be understood by the greater challenges in achieving the latter. For example, achievement of high fidelity in the area of motivational interviewing requires care in selection of staff with the capacity to acquire the skills, provision of adequate training, and ongoing supervision of practitioners who actively learn the techniques. There was ample evidence during the course of the project that staff selection was not always optimal. Staff turnover attenuated the influence of the initial skills training in light of the fact that this initial training was not always repeated for replacement staff.

More work is needed in the area of articulating the domains of fidelity that are important for attaining adherence to a program model. In this report, we have identified two broad types of fidelity, which we have labeled structural and clinical. Fixsen et al. (2005) differentiate between fidelity measures of *context* (e.g., staffing qualifications), *compliance* (practitioners use core interventions prescribed by the model), and *competence* (i.e., practitioner skills to perform the necessary interventions). Their first category we have labeled structural, while their second and third categories together correspond to our notion of the clinical elements of fidelity.

The state mental health authority was clearly hugely influential in increasing fidelity to assertive community treatment in the two states that had established strong financial incentives for the delivery of these services. In both states, however, the second EBP disseminated as part of the national project did not fare well (Moser et al., 2004), suggesting that a combination of state support and choice of EBP may be needed to achieve dissemination goals. During the course of the project, we developed a scale to assess state-level factors presumed to affect

implementation of high-fidelity programs (Finnerty, Rapp, Bond, Lynde, & Goldman, 2005).

Modeled after the EBP fidelity scales, this scale measures objective indicators at the state level such as the designation of a point person within the state agency responsible for dissemination of the EBP, the establishment of a technical assistance center, state-level policies and regulations aligned to support the EBP, and financial incentives to implement the EBP, and. Preliminary evidence suggests an association between high ratings for the state mental health authority on this scale and high fidelity in programs implementing the practice.

Table 1. Classification of Items on 5 EBP Fidelity Scales

	Staffing	Organization	Services	Structural	Clinical	Total
SE	3 (20%)	3 (20%)	9 (60%)			15
ACT	10 (36%)	9 (32%)	9 (32%)			28
IDDT				5 (42%)	9 (58%)	14
IMR				4 (31%)	9 (69%)	13
FPE				6 (50%)	6 (50%)	12

Table 2. National EBP Project: 2-Year Rates of Successful Program Implementation

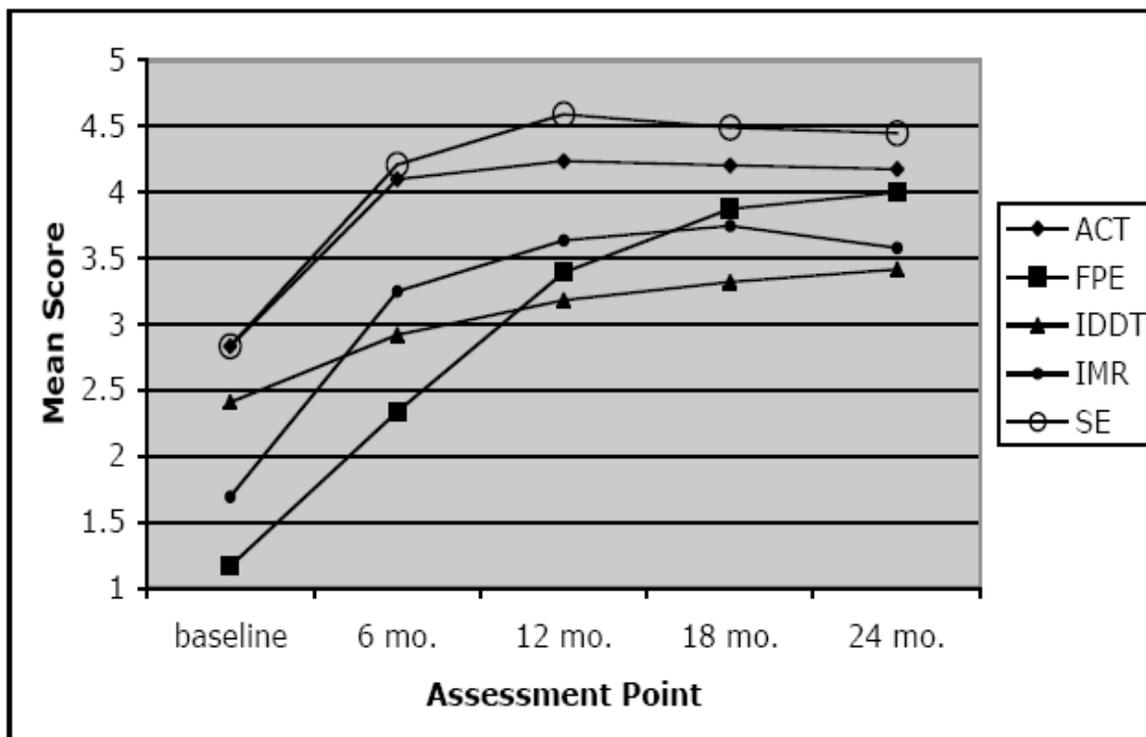
EBP	Number of Participating Sites	Successful Implementation (Fidelity >4.0)	Unsuccessful Implementation (Fidelity < 4.0)	Site Discontinued EBP
SE	9	8 (89%)	1 (11%)	0
ACT	13	10 (77%)	3 (23%)	0
IDDT	13	2 (15%)	9 (69%)	2 (15%)
IMR	12	6 (50%)	6 (50%)	0
FPE	6	3 (50%)	1(17%)	2 (33%)
Total	53	29 (55%)	20 (38%)	4 (8%)

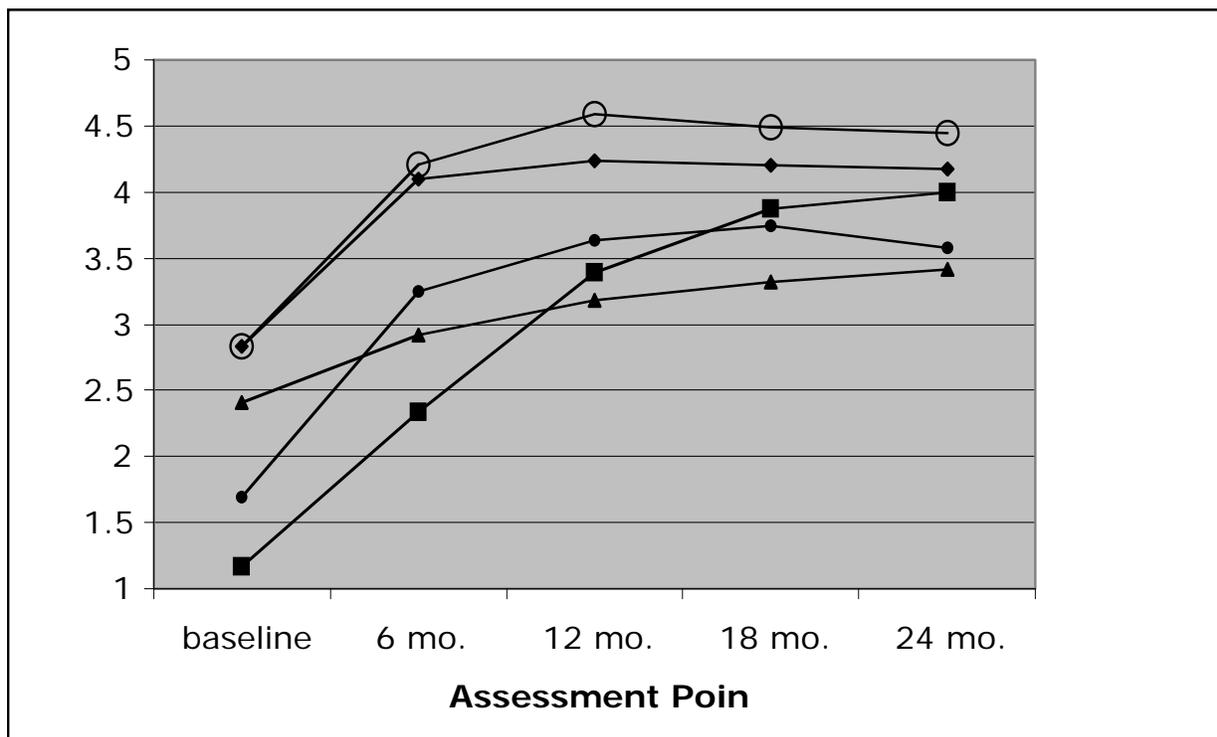
Table 3. Change in Structural and Clinical Fidelity Item Means Over Time for 3 EBPs

EBP	Baseline	6 mo	12 mo	18 mo	24 mo
Mean of Structural Items:					
IDDT	3.32	3.84	3.96	4.05	4.20
IMR	1.29	3.98	4.56	4.38	4.27
FPE	1.21	2.29	3.17	3.83	4.04
Total Structural	1.94	3.37	3.90	4.09	4.17
Mean of Clinical Items:					
IDDT	1.95	2.41	2.75	2.92	2.98
IMR	1.87	2.93	3.22	3.46	3.28
FPE	1.13	2.38	3.63	3.92	3.96
Total Clinical	1.65	2.57	3.20	3.43	3.41

Note: Scores range from 1 to 5, with 5 being highest fidelity.

Figure 1. Longitudinal plot of average fidelity by evidence-based practice (N=49 sites). Note: Reprinted from Psychiatric Services.





REFERENCES

Allness, D. J., & Knoedler, W. H. (1998). The PACT model of community-based treatment for persons with severe and persistent mental illness: A manual for PACT start-up. Arlington, VA: NAMI.

Allness, D. J., & Knoedler, W. H. (2003). The PACT model of community-based treatment for persons with severe and persistent mental illness: A manual for PACT start-up (2nd ed.). Arlington, VA: NAMI.

Backer, T., Liberman, R., & Kuehnel, T. (1986). Dissemination and adoption of innovative psychosocial interventions. Journal of Consulting and Clinical Psychology, *54*, 111-118.

Becker, D. R., Smith, J., Tanzman, B., Drake, R. E., & Tremblay, T. (2001). Fidelity of supported employment programs and employment outcomes. Psychiatric Services, *52*, 834-836.

Becker, D. R., Xie, H., McHugo, G. J., Halliday, J., & Martinez, R. A. (2006). What predicts supported employment program outcomes? Community Mental Health Journal, *42*, 303-313.

Biegel, D. E., Swanson, S., & Kola, L. A. (2007). The Ohio Supported Employment Coordinating Center of Excellence. Administration and Society, *39*, 504-512.

Blakely, C., Mayer, J., Gottschalk, R., Schmitt, N., Davidson, W., Roitman, D., & Emshoff, J. (1987). The fidelity-adaptation debate: Implications for the implementation of public sector social programs. American Journal of Community Psychology, *15*, 253-268.

Blumenthal, D., & Kilo, C. M. (1998). A report card on continuous quality improvement. Milbank Quarterly, *76*, 625-648.

Bond, G. R. (1991). Variations in an assertive outreach model. New Directions for Mental Health Services, 52, 65-80.

Bond, G. R. (2007). Modest implementation efforts, modest fidelity, and modest outcomes. Psychiatric Services, 58, 334.

Bond, G. R., Becker, D. R., Drake, R. E., Rapp, C. A., Meisler, N., Lehman, A. F., Bell, M. D., & Blyler, C. R. (2001). Implementing supported employment as an evidence-based practice. Psychiatric Services, 52, 313-322.

Bond, G. R., Becker, D. R., Drake, R. E., & Vogler, K. M. (1997). A fidelity scale for the Individual Placement and Support model of supported employment. Rehabilitation Counseling Bulletin, 40, 265-284.

Bond, G. R., Drake, R. E., Mueser, K. T., & Latimer, E. (2001). Assertive community treatment for people with severe mental illness: Critical ingredients and impact on patients. Disease Management & Health Outcomes, 9, 141-159.

Bond, G. R., Evans, L., Salyers, M. P., Williams, J., & Kim, H. K. (2000). Measurement of fidelity in psychiatric rehabilitation. Mental Health Services Research, 2(2), 75-87.

Bond, G. R., McHugo, G. J., Becker, D. R., Rapp, C. A., & Whitley, R. (in press). Fidelity of supported employment: Lessons learned from the National EBP Project. Psychiatric Rehabilitation Journal.

Bond, G. R., Miller, A. L., Taylor, A., Tsai, J., Howard, P. B., El-Mallakh, P., Finnerty, M., Kealey, E., Myrhol, B., Kalk, K., & Adams, N. (2007). A scale to assess fidelity to evidence-based principles of medication management for schizophrenia. Schizophrenia Bulletin, 33, 469.

Bond, G. R., & Salyers, M. P. (2004). Prediction of outcome from the Dartmouth ACT Fidelity Scale. CNS Spectrums, 9, 937-942.

Bond, G. R., Vogler, K. M., Resnick, S. G., Evans, L. J., Drake, R. E., & Becker, D. R. (2001). Dimensions of supported employment: Factor structure of the IPS Fidelity Scale. Journal of Mental Health, *10*, 383-393.

Bond, G. R., Williams, J., Evans, L., Salyers, M., Kim, H. W., Sharpe, H., & Leff, H. S. (2000). Psychiatric rehabilitation fidelity toolkit. Cambridge, MA: Human Services Research Institute.

Brekke, J. S. (1988). What do we really know about community support programs? Strategies for better monitoring. Hospital and Community Psychiatry, *39*, 946-952.

Deci, P. A., Santos, A. B., Hiott, D. W., Schoenwald, S., & Dias, J. K. (1995). Dissemination of assertive community treatment teams. Psychiatric Services, *46*, 676-678.

Dixon, L., McFarlane, W. R., Lefley, H., Lucksted, A., Cohen, M., Falloon, I., Mueser, K. T., Miklowitz, D., Solomon, P., & Sondheimer, D. (2001). Evidence-based practices for services to families of people with psychiatric disabilities. Psychiatric Services, *52*, 903-910.

Drake, R. E., McHugo, G. J., Becker, D. R., Anthony, W. A., & Clark, R. E. (1996). The New Hampshire study of supported employment for people with severe mental illness: Vocational outcomes. Journal of Consulting and Clinical Psychology, *64*, 391-399.

Drake, R. E., Bond, G. R., & Rapp, C. A. (2006). Explaining the variance within supported employment programs: Comment on "What Predicts Supported Employment Outcomes?". Community Mental Health Journal, *42*, 315-318.

Drake, R. E., Essock, S. M., Shaner, A., Carey, K. B., Minkoff, K., Kola, L., Lynde, D., Osher, F. C., Clark, R. E., & Rickards, L. (2001). Implementing dual diagnosis services for clients with severe mental illness. Psychiatric Services, *52*, 469-476.

Drake, R. E., Goldman, H. H., Leff, H. S., Lehman, A. F., Dixon, L., Mueser, K. T., & Torrey, W. C. (2001). Implementing evidence-based practices in routine mental health service settings. Psychiatric Services, *52*, 179-182.

Drake, R. E., Merrens, M. R., & Lynde, D. W. (Eds.). (2005). Evidence-based mental health practice: A textbook. New York: WW Norton & Company.

Fairweather, G. W. (1980). The Fairweather lodge: A twenty-five year retrospective. New Directions for Mental Health Services, *7*(Whole Issue).

Finnerty, M., Rapp, C. A., Bond, G. R., Lynde, D., & Goldman, H. (2005, February 8). State Health Authority Yardstick: Impact of State Level Action on the Quality and Penetration of EBPs in the Community. Paper presented at the 15th Annual Conference on State Mental Health Agency Services Research, Program Evaluation and Policy (Sponsored by the National Association of State Mental Health Program Directors Research Institute) (www.nri-inc.org/Conference/Conf05/2005agenda.cfm), Baltimore, MD.

Fixsen, D. L., Naoom, S. F., Blase, K. A., Friedman, R. M., & Wallace, F. (2005). Implementation research: A synthesis of the literature. Tampa, FL: University of South Florida.

Gowdy, E. A., Carlson, L. S., & Rapp, C. A. (2003). Practices differentiating high-performing from low-performing supported employment programs. Psychiatric Rehabilitation Journal, *26*, 232-239.

Grimshaw, J. M., Thomas, R. E., MacLennan, G., Fraser, C., Ramsay, C. R., Vale, L., Whitty, P., Eccles, M. P., Matowe, L., Wensing, S. M., Dijkstra, R., & Donaldson, C. (2005). Effectiveness and efficiency of guideline dissemination and implementation strategies. International Journal of Technology Assessment in Health Care, *21*, 149.

Grol, R. (2001). Successes and failures in the implementation of evidence-based guidelines for clinical practice. Medical Care, 39, Supplement 2:II-46-II-54.

Harron, B., Burns, B. J., & Swartz, M. (1993). Hospital without walls [videotape]. Durham, NC: Duke University.

Henggeler, S. W., Pickrel, S. G., & Brondino, M. J. (1999). Multisystemic treatment of substance-abusing and -dependent delinquents: Outcomes, treatment fidelity, and transportability. Mental Health Services Research, 1, 171-184.

Hermann, R. C. (2005). Improving mental healthcare: A guide to measurement-based quality improvement. Washington, DC: American Psychiatric Publishing.

Hermann, R. C., Chan, J. A., Zazzali, J. L., & Lerner, D. (2006). Aligning measurement-based quality improvement with implementation of evidence-based practices. Administration and Policy in Mental Health and Mental Health Services Research, 34, 636-645.

Institute of Medicine. (2001). Crossing the quality chasm: A new health system for the 21st century. Washington, DC: National Academy Press.

Jerrell, J. M., & Ridgely, M. S. (1999). Impact of robustness of program implementation on outcomes of clients in dual diagnosis programs. Psychiatric Services, 50, 109-112.

Katon, W. J., Zatzick, D., Bond, G. R., & Williams, J. W. (2006). Dissemination of evidence-based mental health interventions: Importance to the trauma field. Journal of Traumatic Stress, 19, 611-623.

Latimer, E. (1999). Economic impacts of assertive community treatment: A review of the literature. Canadian Journal of Psychiatry, 44, 443-454.

Lehman, A. F., Kreyenbuhl, J., Buchanan, R. W., Dickerson, F. B., Dixon, L. B., Goldberg, R., Green-Paden, L. D., Tenhula, W. N., Boerescu, D., Tek, C., Sandson, N., &

Steinwachs, D. M. (2004). The Schizophrenia Patient Outcomes Research Team (PORT): Updated treatment recommendations 2003. Schizophrenia Bulletin, *30*, 193-217.

Lehman, A. F., & Steinwachs, D. M. (1998). Patterns of usual care for schizophrenia: Initial results from the Schizophrenia Patient Outcomes Research Team (PORT) client survey. Schizophrenia Bulletin, *24*, 11-23.

Lehman, A. F., Steinwachs, D. M., & PORT Co-Investigators. (1998). At issue: Translating research into practice: The Schizophrenia Patient Outcomes Research Team (PORT) treatment recommendations. Schizophrenia Bulletin, *24*, 1-10.

McDonnell, J., Nofs, D., Hardman, M., & Chambless, C. (1989). An analysis of the procedural components of supported employment programs associated with employment outcomes. Journal of Applied Behavior Analysis, *22*, 417-428.

McGraw, K. O., & Wong, S. P. (1996). Forming inferences about some intraclass correlation coefficients. Psychological Methods, *1*, 30-46.

McGrew, J., & Griss, M. (2005). Concurrent and predictive validity of two scales to assess the fidelity of implementation of supported employment. Psychiatric Rehabilitation Journal, *29*, 41-47.

McGrew, J. H., & Bond, G. R. (1995). Critical ingredients of assertive community treatment: Judgments of the experts. Journal of Mental Health Administration, *22*, 113-125.

McGrew, J. H., Bond, G. R., Dietzen, L. L., & Salyers, M. P. (1994). Measuring the fidelity of implementation of a mental health program model. Journal of Consulting and Clinical Psychology, *62*, 670-678.

McHugo, G. J., Drake, R. E., Teague, G. B., & Xie, H. (1999). Fidelity to assertive community treatment and client outcomes in the New Hampshire Dual Disorders Study.

Psychiatric Services, *50*, 818-824.

McHugo, G. J., Drake, R. E., Whitley, R., Bond, G. R., Campbell, K., Rapp, C. A., Goldman, H. H., Lutz, W., & Finnerty, M. (2007). Fidelity outcomes in the National Evidence-Based Practices Project. Psychiatric Services.

Mellman, T. A., Miller, A. L., Weissman, E. M., Crismon, M. L., Essock, S. M., & Marder, S. R. (2001). Evidence-based pharmacologic treatment for people with severe mental illness: A focus on guidelines and algorithms. Psychiatric Services, *52*, 619-625.

Moser, L. L., DeLuca, N. L., Bond, G. R., & Rollins, A. L. (2004). Implementing evidence based psychosocial practices: Lessons learned from statewide implementation of two practices. CNS Spectrums, *9*, 926-936.

Mowbray, C. T., Holder, M., Teague, G. B., & Bybee, D. (2003). Fidelity criteria: Development, measurement, and validation. American Journal of Evaluation, *24*, 315-340.

Mueser, K. T., Corrigan, P. W., Hilton, D. W., Tanzman, B., Schaub, A., Gingerich, S., Copeland, M. E., Essock, S. M., Tarrier, N., Morey, B., Vogel-Scibilia, S., & Herz, M. I. (2002). Illness management and recovery: A review of the research. Psychiatric Services, *53*, 1272-1284.

Mueser, K. T., Torrey, W. C., Lynde, D., Singer, P., & Drake, R. E. (2003). Implementing evidence-based practices for people with severe mental illness. Behavior Modification, *27*(3), 387-411.

New Freedom Commission on Mental Health. (2003). Achieving the promise: Transforming mental health care in America. Final Report. DHHS Pub. No. SMA-03-3832. Rockville, MD: Substance Abuse and Mental Health Services Administration.

Noble, J. H. (1991). The benefits and costs of supported employment for people with mental illness and with traumatic brain injury in New York State (C-0023180). Buffalo, NY: Research Foundation of the State University of New York.

Oxman, T. E., Schulberg, H. C., Greenberg, R. L., Dietrich, A. J., Williams, J. W., Nutting, P. A., & Bruce, M. L. (2006). A fidelity measure for integrated management of depression in primary care. Medical Care, *44*, 1030-1037.

Phillips, S. D., Burns, B. J., Edgar, E. R., Mueser, K. T., Linkins, K. W., Rosenheck, R. A., Drake, R. E., & McDonel Herr, E. C. (2001). Moving assertive community treatment into standard practice. Psychiatric Services, *52*, 771-779.

Rapp, C. A., Bond, G. R., Becker, D. R., Carpinello, S. E., Nikkel, R. E., & Gintoli, G. (2005). The role of state mental health authorities in promoting improved client outcome through evidence-based practice. Community Mental Health Journal, *41*, 347-363.

Rapp, C. A., Etzel-Wise, D., Marty, D., Coffman, M., Carlson, L., Asher, D., Callaghan, J., & Whitley, R. E. (in press). Evidence-based practice implementation strategies: Results of a qualitative study. Community Mental Health Journal.

Rosenheck, R., Neale, M., Leaf, P., Milstein, R., & Frisman, L. (1995). Multisite experimental cost study of intensive psychiatric community care. Schizophrenia Bulletin, *21*, 129-140.

Salyers, M. P., Bond, G. R., Teague, G. B., Cox, J. F., Smith, M. E., Hick, M. L., & Koop, J. I. (2003). Is it ACT yet? Real-world examples of evaluating the degree of implementation for assertive community treatment. Journal of Behavioral Health Services & Research, *30*, 308-324.

Salyers, M. P., McKasson, M., Bond, G. R., McGrew, J. H., Rollins, A. L., & Boyle, C. (2007). The role of technical assistance centers in implementing evidence-based practices: Lessons learned. American Journal of Psychiatric Rehabilitation, *10*, 85-101.

Shojania, K. G., & Grimshaw, J. M. (2005). Evidence-based quality improvement: The state of the science. Health Affairs, *24*, 138-150.

Solberg, L. I., Brekke, M. L., Fazio, C. J., Fowles, J., Jacobsen, D. N., Kottke, T. E., Mosser, G., O'Connor, P. J., Ohnsorg, K. A., & Rolnick, S. J. (2000). Lessons from experienced guideline implementers: attend to many factors and use multiple strategies. Joint Commission Journal on Quality Improvement, *26*, 171-188.

Stein, L. I., & Santos, A. B. (1998). Assertive community treatment of persons with severe mental illness. New York: W. W. Norton.

Stein, L. I., & Test, M. A. (1980). An alternative to mental health treatment. I: Conceptual model, treatment program, and clinical evaluation. Archives of General Psychiatry, *37*, 392-397.

Teague, G. B., Bond, G. R., & Drake, R. E. (1998). Program fidelity in assertive community treatment: Development and use of a measure. American Journal of Orthopsychiatry, *68*, 216-232.

Test, M. A. (1992). Training in Community Living. In R. P. Liberman (Ed.), Handbook of psychiatric rehabilitation (pp. 153-170). New York: Macmillan.

Torrey, W. C., Drake, R. E., Dixon, L., Burns, B. J., Rush, A. J., Clark, R. E., & Klatzker, D. (2001). Implementing evidence-based practices for persons with severe mental illness. Psychiatric Services, *52*, 45-50.

Torrey, W. C., Finnerty, M., Evans, A., & Wyzik, P. F. (2003). Strategies for leading the implementation of evidence-based practices. Psychiatric Clinics of North America, 26, 883-897.

Torrey, W. C., Lynde, D. W., & Gorman, P. (2005). Promoting the implementation of practices that are supported by research: The National Implementing Evidence-Based Practice Project. Child and Adolescent Psychiatric Clinics of North America, 14, 297-306.

Turner, J. C., & TenHoor, W. J. (1978). The NIMH community support program: Pilot approach to a needed social reform. Schizophrenia Bulletin, 4, 319-348.

U.S. Department of Health and Human Services. (1999). Mental Health: A Report of the Surgeon General. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, National Institute of Mental Health.

Uttaro, T., Finnerty, M., White, T., Gaylor, R., & Shindelman, L. (2007). Reduction of concurrent antipsychotic prescribing practices through the use of PSYCKES. Administration and Policy in Mental Health and Mental Health Services Research, 34, 57-61.

Wang, P. S., Demler, O., & Kessler, R. C. (2002). Adequacy of treatment for serious mental illness in the United States. American Journal of Public Health, 92, 92-98.

Woltman, E., & Whitley, R. (in press). The role of staffing stability in the implementation of integrated dual disorders treatment: an exploratory study. Journal of Mental Health.